SCHÜTZINGER

Electrical Connectors for test and measurement

Company profile

The company Gerhard Schützinger Labor-Schütz GmbH, Stuttgart was established in 1949 by Gerhard Schützinger (born in 1921).

Today, production comprises a wide range of standard and special products for measuring apparatus and fittings, covering practically every form of application in the field of electrical laboratory and testing equipment. Specific customer requirements are analysed by creative employees and efficiently realized. Our team of highly qualified experts helps our customers to secure advantages based on more than 50 years of experience to solve their tasks. Continuity in the development of our products and in dealings with our customers guarantee a stable and relyable partnership.

In 1993 responsibility for the company was transfered to the managing partners Michael and Bernhard Schützinger, the company founder´s sons. Both have many years of active experience in the company, Michael since 1976 and Bernhard since 1978.

Labor-Schütz products are manufactured with high precision, using materials of high quality. At the design stage, great value is set on functional suitability, ergonomics and excellent form. Consistent superior quality is attained as the result of modern production methods and continual controls. Furthermore, importance is always attached to the use of environment-friendly raw materials. Products relevant to safety are tested by the trade association and are officially approved of. A further field of activity is the production of special plug connectors for the low-voltage lighting sector.

Alongside the Labor-Schütz range of products, we have successfully operated as an independent commercial agency since 1950, representing reputable German companies of the electrical industry.

Labor - Schütz GmbH Eichwiesenring 6 70567 Stuttgart ☎ +711 - 71546 - 0 fax +711 - 71546 - 40

Reference to the catalogue / Ordering information

The present edition of our catalogue covering measuring equipment includes a number of new products. These include several safety measuring leads, safety test probes, safety threaded sockets and press-in sockets, special measuring equipment and adapters.

All **new items** are integrated in the existing range of products and are not listed separately.

In compliance with IEC 1010-2-31, **voltage specifications**, e.g. 1000 V, CAT II, are given for every article in the ø 4 mm safety programme. The specifications refer on principle to the degree of contamination II.

Length of assembled leads
The length of an assembled lead is that of the cut lead length. For every article with an assembled lead there is a table in the catalogue detailing standard lengths. Additional lengths are produced upon request.

We are always pleased to offer non-standard products to customer specification, subject to minimum order quantities.
Products not presented from previous catalogues may still be available. Please contact our sales office for further information.

We reserve the right to make **technical modifications** serving technical improvement and safety without prior notice.

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Main characteristics and advantages

Single-pole miniature plug connectors for the transmission of voltages, currents and electrical measurement data.
High-grade materials such as spring brass and silver-plated or nickel-plated surfaces guarantee excellent contact reliability, low contact resistance and prevent corrosion. These universal functional articles thus comply with the high standards required in laboratories and in the field of metrology.

Compact assembly
Systems with ø 2 mm plug pins enable reliable plug connections within the smallest of areas and take up minimum space. This is of advantage particularly in the field of microelectronics. Crush-proof insulation sleeves mean that these plug connectors stand up to considerable loads.

Universal
Compatability with the ø 2.4 mm and ø 4 mm ranges is achieved by simple use of our adapters.

Important note
This miniature laboratory range with insulated grasp is designed for functional handling compined with safe operation for the user.

In this respect we refer to the VDE regulations VDE 0100, VDE 0105 and the regulations for the prevention of accidents VBG 4 of the trade association for precision engineering and electro-technics.

The range is intended for use with extra-low voltages.

Max. voltage for direct contact with bare parts:

30 V_{AC} / 60 V_{DC}

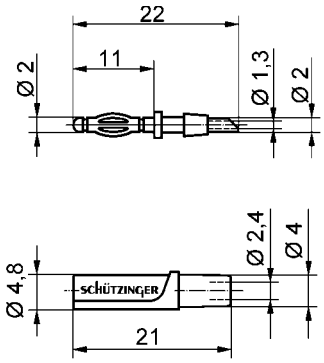
General information
In the case of special applications, verification whether products listed in this catalogue comply with regulations other than those stated is the responsibility of the user.

Reference to other laboratory plug connector series

Our **ø 2.4 mm programme** is to be found ..... **page 9**
Our **ø 4 mm programme** is to be found ..... **page 17**

Touchproof types for 1000V, CAT III
Our **ø 4 mm safety laboratory programme** with rigid sleeve and sliding sleeve is to be found ..... **page 45**

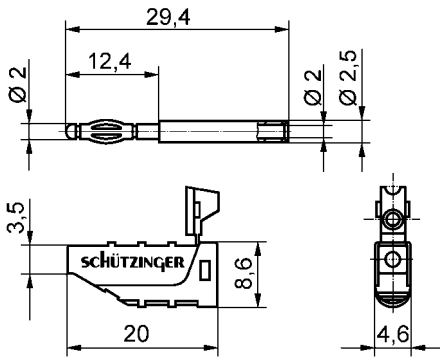
If you have any queries regarding application possibilities, technical data or special designs we will gladly advise you.



Lamella-basket plug
- straight, with soldering cup for leads up to 0,5 mm²
- with sleeve, unassembled

order no. **FK 02 L / ..**(colour)
- contact part: **nickel-plated**
- sleeve PA 6.6 (Polyamid)

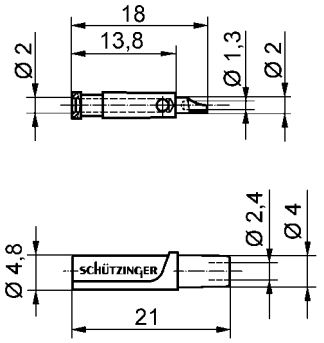
colours: see table



Lamella-basket plug
- with line in socket , for leads up to 0.5 mm²
- with sleeve, unassembled

order no. **FK 11 L / ..**(colour)
- contact part: **nickel-plated**
- sleeve PA 6.6 (Polyamid)

colours: see table



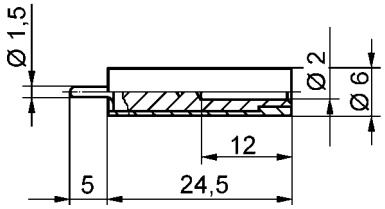
Coupler
- with soldering cup for leads up to 0.5 mm²
- with sleeve, unassembled

order no. **KU 02 L / ..**(colour)
- contact part: **nickel-plated**
- sleeve PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	**colours**	**terminal**	transition resistance	rated voltage	rated current	operating temperature
FK 02 L / ..(colour) contact part nickel-plated **FK 11 L / ..**(colour) contact part nickel-plated **KU 02 L / ..**(colour) contact part nickel-plated	black red blue yellow green	soldering 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C

other colours, platings and sleeves for other lead diameters on request

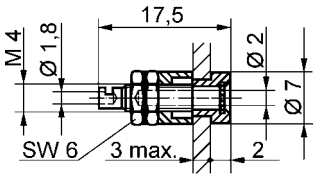


Laboratory Socket

- suitable to unstall a permanent measuring point with a socket. For that the pin is screwed under or soldered on a printed circuit board.

order no. **LB 2-1,5 / 5 / ..**(colour)
- contact part: **nickel-plated**
- insulation: PA 6 (Polyamid)

colours: see table

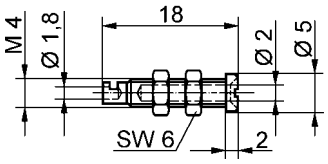


Socket

- with moulded insulation

order no. **IBU 2011 / ..**(colour)
- contact part: **nickel-plated**
- insulation: PA 6.6 (Polyamid)
- soldering cup: up to 0.75 mm²
- hole ø 5 mm

colours: see table



Socket

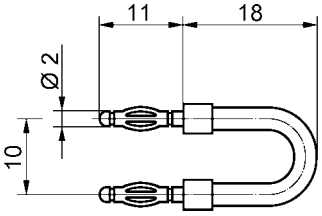
- without insulation

order no. **BU 20**
- contact part: **silver-plated**
- soldering cup: up to 0.75 mm²
- hole ø 4 mm

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
LB 2-1,5 / 5 / ..(colour) contact part nickel-plated **IBU 2011 / ..**(colour) contact part nickel-plated **BU 20** contact part silver-plated	black red blue yellow green —	soldering 0.75 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C

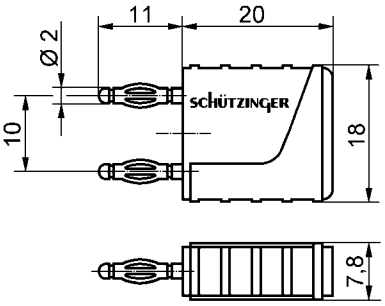
other colours and platings on request

ø 2



Connecting plug
- without insulation

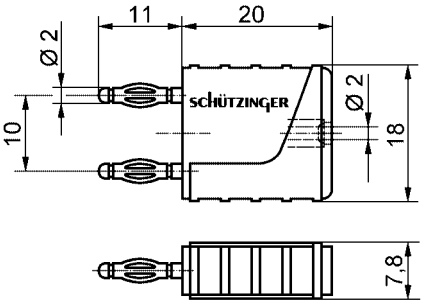
order no. **KURZ 10 - 2**
- contact part: **nickel-plated**



Connecting plug
- moulded insulation

order no. **KURZ 10 - 2 IG / ..** (colour)
- contact part: **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



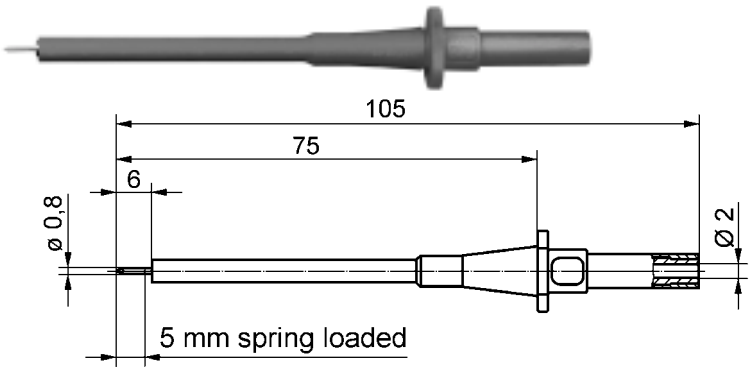
Connecting plug
- moulded insulation
- with rear socket ø 2 mm

order no. **KURZ 10 - 2 IG MB / ..** (colour)
- contact part: **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
KURZ 10-2 contact part nickel-plated	—	—	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
KURZ 10-2 IG / ..(colour) contact part nickel-plated	black	—	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
KURZ 10-2 IG MB / ..(colour) contact part nickel-plated	black	rear socket	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C

other colours and platings on request

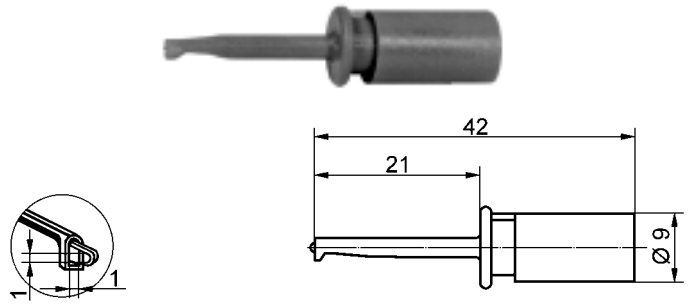


Test probe
- suitable for fine flex and wires
- also suitable for wire-wrap posts up to 1 x 1 mm

with solder connection for cross-section up to 0.5 mm²

order no. **PRÜF 3072 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6 (Polyamid)

colours: see table



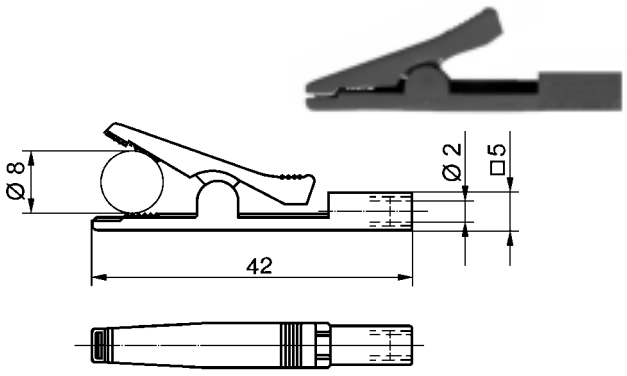
Test clip
- suitable for fine flex and wires
- also suitable for wire-wrap posts up to 1 x 1 mm

with solder connection for cross-section up to 0.5 mm²

order no. **KLEPS 42 / ..**(colour)
- contact hook **gold-plated**
- insulation PA 6 (Polyamid)

colours: see table

other test clips on page 44 and page 70

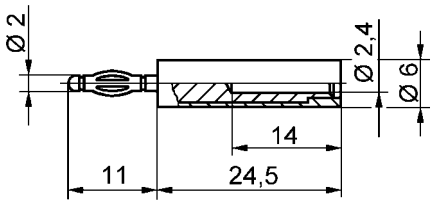


Crocodile clip
- 2 mm socket

order no. **AK 2799 / ..**(colour)
- contact hook **nickel-plated**
- insulation Polypropylen

colours: see table

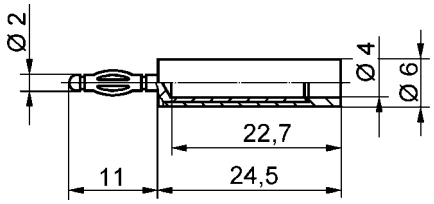
General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
PRUF 3072 / .. (colour) contact part gold-plated	black red	rear socket	15 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 100 °C
KLEPS 42 / .. (colour) contact part gold-plated	black red	soldering - 0.5 mm²	15 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
AK 2799 / ..(color) Kontaktteile vernickelt	black red	rear socket	15 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 80 °C



Adapter
- for connecting ø 2 mm - system to ø 2.4 mm - system

order no. **A 20 - 24 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

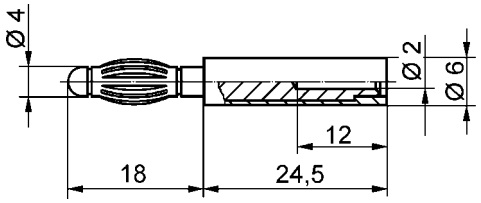
colours: see table



Adapter
- for connecting ø 2 mm - system to ø 4 mm - system

order no. **A 20 - 40 S / ..**(colour)
- contact part: **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



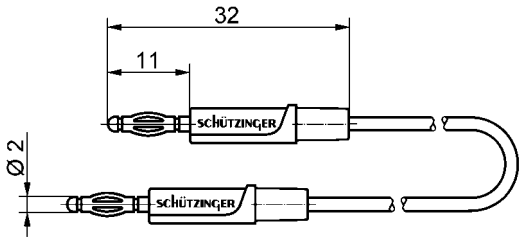
Adapter
- for connecting ø 4 mm - system to ø 2 mm - system

order no. **A 40 - 20 / ..**(colour)
- contact part: **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

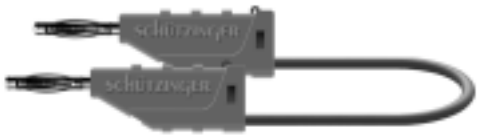
General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
A 20 - 24 / .. (colour) contact part nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 20 - 40 S / .. (colour) contact part nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 40 - 20 / .. (colour) contact part nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C

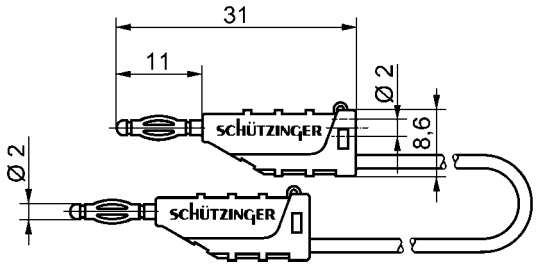
other colours and platings on request



Measuring lead
- with 2 lamella-basket plugs FK 02 L / .. (colour)
  and highly flexible leads

order no.	**MFK 02 / 0,5 / ..**(length) **/ ..**(colour)
- lead	0.5 mm² PVC-insulation
- contact parts	**nickel-plated**
- sleeves	PA 6.6 (Polyamid)
colours:	see table



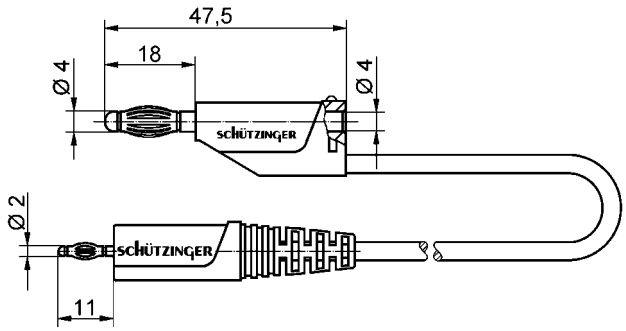


Measuring lead
- with 2 lamella-basket plugs FK 11 L / .. (colour)
  and highly flexible leads

order no.	**MFK 11 / 0,5 / ..**(length) **/ ..**(colour)
- lead	0.5 mm² PVC-insulation
- contact parts	**nickel-plated**
- sleeves	PA 6.6 (Polyamid)
colours:	see table

General information			Technical data				
							sleeve -30 °C ...+ 110 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	**lenght**	**colours**	**leads**	transition resistance	rated voltage	rated current	operating temperature
MFK 02 / 0,5 / ..(length) **/ ..**(colour) contact part nickel-plated	10 cm 25 cm 50 cm 100 cm	black red blue yellow green	PVC-isol. 0.5 mm²	3 mΩ 5 mΩ 9 mΩ 17 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 10 °C ... + 80 °C
MFK 11 / 0,5 / ..(length) **/ ..**(colour) contact part nickel-plated	10 cm 25 cm 50 cm 100 cm		PVC-isol. 0.5 mm²	3 mΩ 5 mΩ 9 mΩ 17 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 10 °C ... + 80 °C

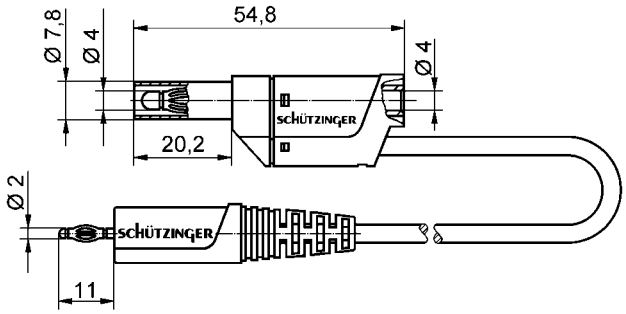
other colours, lengths and platings on request



Adapter lead
- with 1 lamella-basket plug FK 2162 L / .. (colour) and 1 lamella-basket plug FK 15 L / 1 / .. (colour) with highly flexible lead

order no. **AL 2177 / 1 / ..**(length) / **..**(colour)
- lead 1 mm² PVC-double insulation
- contact parts **nickel plated**

colours: see table



Adapter lead
- with 1 lamella-basket plug FK 2162 L / .. (colour) and 1 lamella-basket plug SFK 40 L / 1 / .. (colour) with highly flexible lead

order no. **AL 2178 / 1 / ..**(length) / **..**(colour)
- lead 1 mm² PVC-double insulation
- contact parts **nickel-plated**

colours: see table

General information			Technical data				
							sleeve -30 °C ...+ 110 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	**lenght**	**colours**	**leads**	**transition resistance**	**rated voltage**	**rated current**	**operating temperature**
AL 2177 / 1 / ..(length) / **..**(colour) contact part nickel-plated	100 cm	black red	PVC 1 mm²	17 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 10 °C ... + 80 °C
AL 2178 / 1 / ..(length) / **..**(colour) contact part nickel-plated	100 cm	black red	PVC 1 mm²	17 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 10 °C ... + 80 °C

other colours, lengths and platings on request

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High-grade materials such as spring brass and silver-plated or nickel-plated surfaces guaran-tee excellent contact reliability, low contact re-sistance and prevent corrosion. These universal functional articles thus comply with the high standards required in laboratories and in the field of metro-logy.

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Universal
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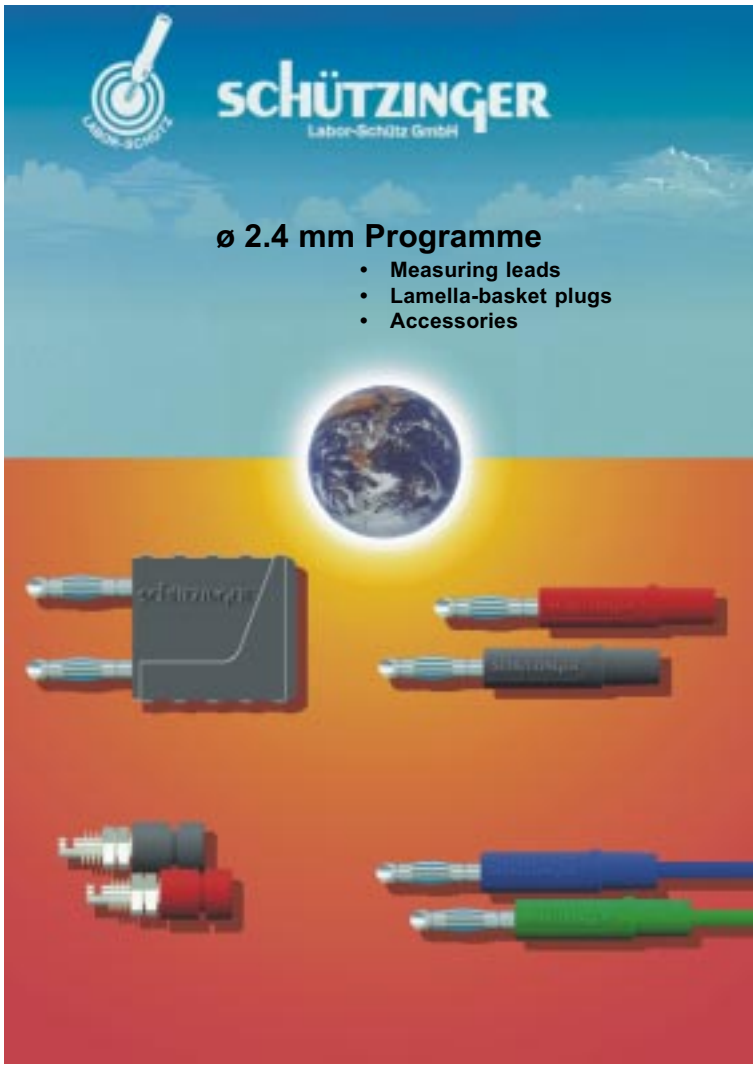

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The programme is intended for use with extra-low voltages.

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Reference to other laboratory plug connector series

Our **ø 2 mm** programme is to be found ..... **page 1**
Our **ø 4 mm** programme is to be found ..... **page 17**

Touchproof types for 1000V, CAT III
Our **ø 4 mm safety labatory programme** with rigid sleeve and sliding sleeve is to be found ..... **page 45**

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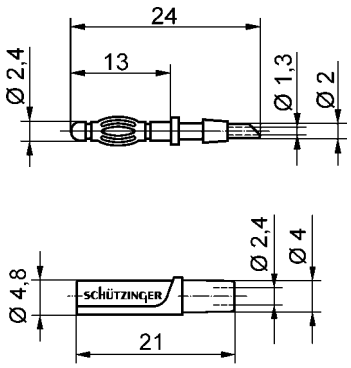
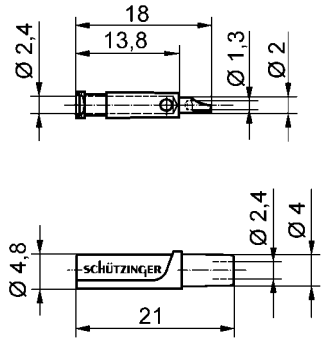


Lamella-basket plug
- straight,with soldering cup for leads up to 0.5 mm²
- with sleeve, unassembled

order no. **FK 04 L / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)

colours: see table



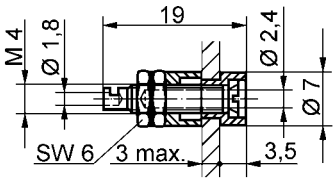
Coupler
- with soldering cup for leads up to 0.5 mm²
- with sleeve, unassembled

order no. **KU 04 L / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	**colours**	**terminal**	transition resistance	rated voltage	rated current	operating temperature
FK 04 L / ..(colour) contact parts nickel-plated	black red blue	soldering 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C
KU 04 L / ..(colour) contact parts nickel-plated	yellow green	soldering 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C

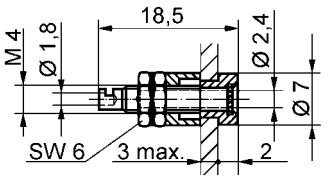
other colours and platings on request



Socket
- with insulation

order no. **IBU 24 / ..**(colour)

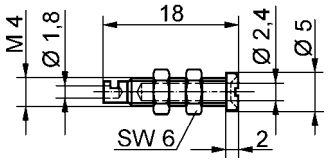
- contact part	**silver-plated**
- insulation	PA 6 (Polyamid)
- soldering cup	up to 0.75 mm²
- hole	ø 5 mm
colours:	see table



Socket
- with moulded insulation

order no. **IBU 2413 / ..**(colour)

- contact part	**nickel-plated**
- insulation	PA 6 (Polyamid)
- soldering cup	up to 0.75 mm²
- hole	ø 5 mm
colours:	see table



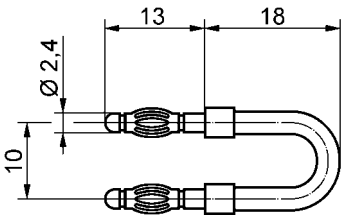
Socket
- without insulation

order no. **BU 24**

- contact part	**silver-plated**
- soldering cup	up to 0.75 mm²
- hole	ø 4 mm

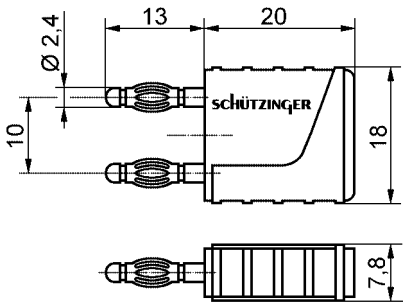
General information		Technical data				
order no.	**colours**	**terminal**	transition resistance	rated voltage	rated current	operating temperature
IBU 24 / ..(colour) contact parts silver-plated	black red blue	soldering 0.75 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C
IBU 2413 / ..(colour) contact parts nickel -plated	yellow green	soldering 0.75 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C
BU 24 contact parts silver-plated	—	soldering 0.75 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 40 °C ... + 110 °C

other colours and platings on request



Connecting plug
- without insulation

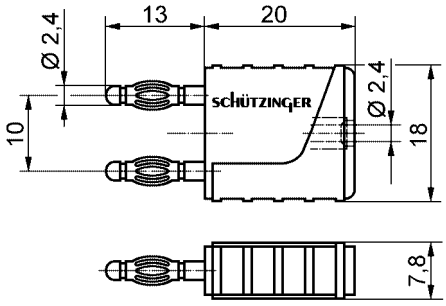
order no. **KURZ 10 - 2,4**
- contact part **nickel-plated**



Connecting plug
- moulded insulation

order no. **KURZ 10 - 2,4 IG / ..** (colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



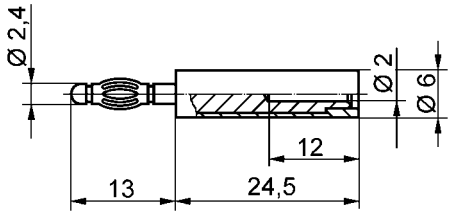
Connecting plug
- moulded insulation
- with rear socket ø 2.4 mm

order no. **KURZ 10 - 2,4 IG MB / ..** (colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
KURZ 10-2,4 contact part nickel-plated	—	—	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C
KURZ 10-2,4 IG / ..(colour) contact part nickel-plated	black	—	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C
KURZ 10-2,4 IG MB / ..(colour) contact part nickel-plated	black	rear socket	3 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 40 °C ... + 110 °C

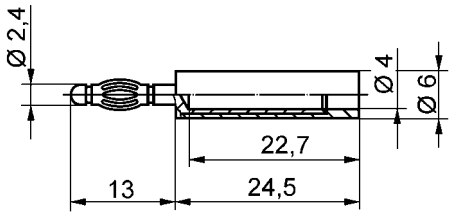
other colours and platings on request



Adapter
- for connecting ø 2.4 mm - system to ø 2 mm - system

order no. **A 24 - 20 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

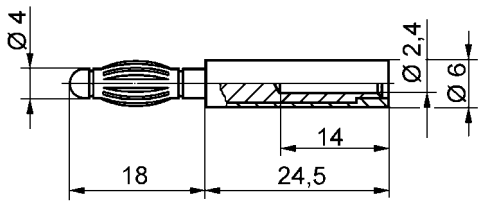
colours: see table



Adapter
- for connecting ø 2.4 mm - system to ø 4 mm - system

order no. **A 24 - 40 S / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



Adapter
- for connecting ø 4 mm - system to ø 2.4 mm - system

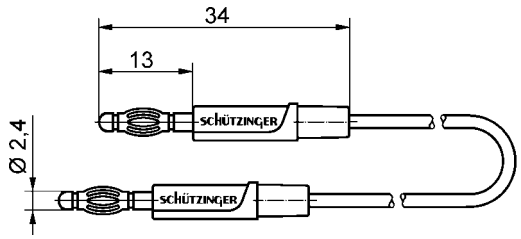
order no. **A 40 - 24 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
A 24 - 20 / .. (colour) contact part nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 24 - 40 S / .. (colour) contact part nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C
A 40 - 24 / .. (colour) contact part nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 25 °C ... + 90 °C

other colours and platings on request

ø 2.4



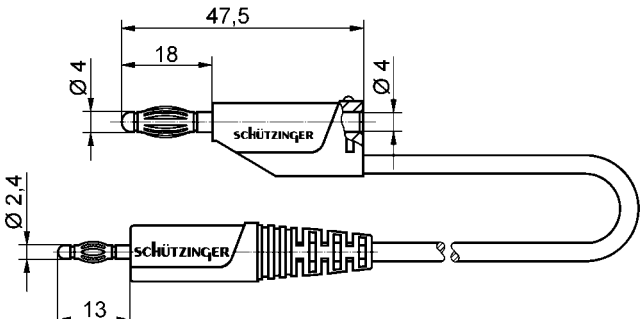
Measuring lead
- with 2 lamella-basket plugs FK 04 L / .. (colour) and highly flexible leads

order no. MFK 04 / 0,5 / ..(length) **/ ..**(colour)

- lead	0.5 mm² PVC insulation
- contact parts	**nickel-plated**
- sleeve	PA 6.6 (Polyamid)
colours:	see table

General information			Technical data				
							sleeve -30 °C ...+ 110 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	**lenght**	**colours**	**leads**	transition resistance	rated voltage	rated current	operating temperature
MFK 04 / 0,5 / ..(lenght) **/ ..**(colour) contact parts nickel-plated	10 cm 25 cm 50 cm 100 cm	black red blue yellow green	PVC 0.5 mm²	3 mΩ 5 mΩ 9 mΩ 17 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 10 °C ... + 80 °C

other colours, lengths and platings on request



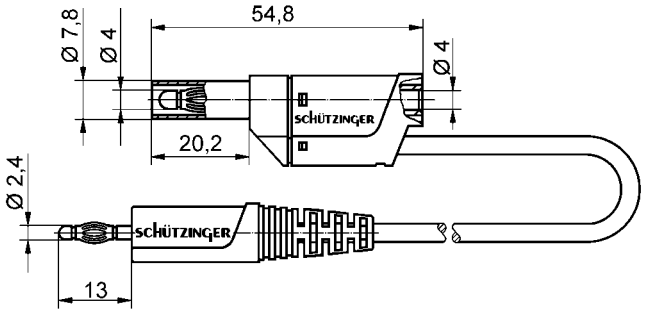
Adapter lead

- with 1 lamella-basket plug FK 2310 L / .. (colour) and 1 lamella-basket plug FK 15 L / 1 / .. (colour) with highly flexible lead

order no. **AL 2220 / 1 / ..**(length) **/ ..**(colour)

- lead: 1 mm² PVC-double-insulation
- contact parts: **nickel-plated**

colours: see table



Adapter lead

- with 1 lamella-basket plug FK 2310 L / .. (colour) and 1 lamella-basket plug SFK 40 L / 1 / .. (colour) with highly flexible lead

order no. **AL 2221 / 1 / ..**(length) **/ ..**(coulor)

- lead: 1 mm² PVC-double-insulation
- contact parts: **nickel-plated**

colours: see table

General information			Technical data				
							sleeve -30 °C ...+ 110 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	**lenght**	**colours**	**leads**	transition resistance	rated voltage	rated current	operating temperature
AL 2220 / 1 / ..(length) **/ ..**(colour) contact parts nickel-plated	100 cm	black red	PVC 1 mm²	17 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 10 °C ... + 80 °C
AL 2221 / 1 / ..(length) **/ ..**(colour) contact parts nickel-plated	100 cm	black red	PVC 1 mm²	17 mΩ	30 V_{AC} 60 V_{DC}	12 A	- 10 °C ... + 80 °C

other colours, lengths and platings on request

Notes

Main characteristics and advantages

Single-pole plug connectors for the transmission of voltages, currents and electrical measurement data.
High-grade materials such as spring brass and silver-plated or nickel-plated surfaces guarantee excellent contact reliability and prevent corrosion. These universal functional articles thus comply with the high standards required in laboratories and in the field of metrology.

Robust assembly
Crush-proof insulation means that these plug connectors also withstand considerable mechanical considerable mechanical loads.

Wide range, universal application

Plug connectors: Connections optional, soldered or as socket clamp connection, plugs with lamella-basket contact.
Threaded sockets: Many types for various requirements: fully insulated or bare.
Terminal posts: Types for different front panel thicknesses and currents.
Crocodile clips: Bare, partially or fully insulated with soldered, screw-in and press-in connection.
Measuring leads: Types suitable for operation in the extra-low voltage range and for constant currents up to 32 A. Simple possibility of interchange due to parallel or axial socket connection.
Couplers: For ø 4 mm plugs as well as types with soldered connection.
Quick-release terminals: Different types for various requirements - with soldering connection or with socket for flat pin sleeve 6.3 mm. As threaded or press-in quick-release terminal ideally suitable to achieve quick contact of strands and wires.

Important note
This laboratory range with insulated grasp is designed for functional handling and safest operation for the user. It is intended for use with extra-low voltages. In this respect we refer to the VDE regulations VDE 0100, VDE 0105 and the regulations for the prevention of accidents VBG 4 of the trade association of precision engineering and electro-technics.

Max. voltage for direct contact with bare parts:

30 V_{AC} / 60 V_{DC}

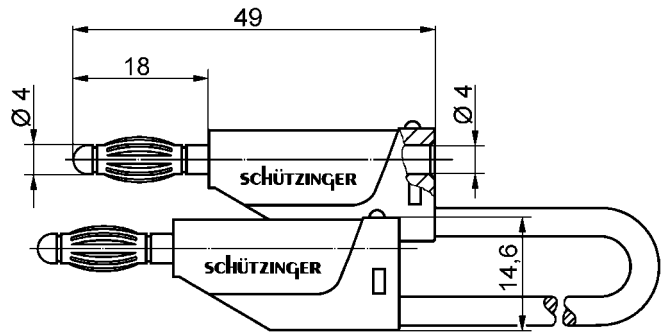
General information
In the case of special applications, verification whether products listed in this catalogue comply with regulations other than those stated is the responsibility of the user.

Reference to other laboratory plug connector series
Our ø **2 mm** programme is to be found ..... **page 1**
Our ø **2.4 mm** programme is to be found ..... **page 9**

Touchproof types for 1000 V, CAT III
Our ø **4 mm safety laboratory programme** with rigid sleeve and sliding sleeve is to be found ..... **page 45**

If you have any queries regarding application possibilities, technical data or special designs we will gladly advise you.

ø 4

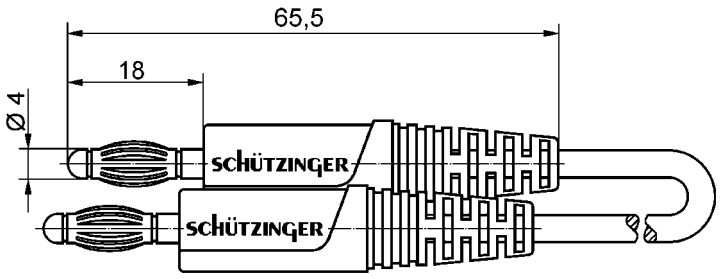


Measuring lead

- with axial socket
- 2 lamella-basket plugs welded on highly flexible PVC lead with double insulation
- sleeves marked with the wire square-section

order no. **MFK 15 / 1 / ..**(length) / ..(colour)

- lead	1 mm² PVC double insulated
- contact parts	**nickel-plated**
- sleeves	PE (Hostalen)
colours:	see table



Measuring lead

- 2 lamella-basket plugs soldered on PVC-double-insulated highly flexible lead

order no. **MFK 09 / 2,5 / ..**(length) / ..(colour)

- lead	2.5 mm² PVC double insulated
- contact parts	**nickel-plated**
- sleeve	TPE (Evoprene)
colours:	see table

General information			Technical data				
							sleeve -30 °C ...+ 110 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	**lenght**	**colours**	**leads**	transition resistance	rated voltage	rated current	operating temperature
MFK 15 / 1 / ..(length) / ..(colour) contact parts nickel-plated	25 cm 50 cm 100 cm 150 cm 200 cm	black, red, blue yellow, green, green-yellow	PVC 1 mm²	5 mΩ 10 mΩ 20 mΩ 30 mΩ 40 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 10 °C ... + 80 °C
MFK 09 / 2,5 / ..(length) / ..(colour) contact parts nickel-plated	100 cm	black red	PVC 2.5 mm²	18 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 10 °C ... + 80 °C

Other lengths, colours, wire square-sections, platings and Silicon-cable on request

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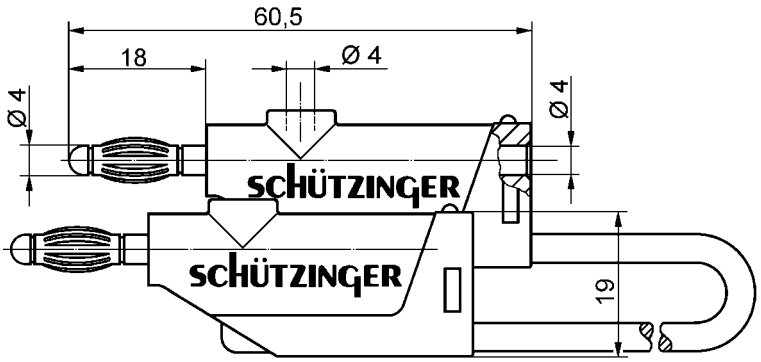


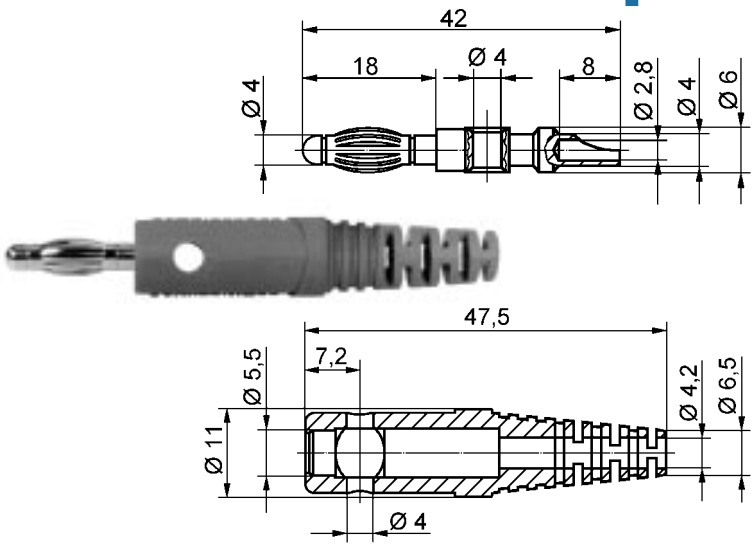
Measuring lead
- with axial and parallel socket.
- 2 lamella-basket plugs welded on highly flexible PVC lead with double insulation
- sleevs marked with the conductor square-section

order no.	**MFK 20 / 2,5 / ..**(length) **/ ..**(colour)
- lead	2.5 mm² PVC double insulated
- contact parts	**nickel-plated**
- sleeves	PE (Hostalen)
colours:	see table

ø 4

General information			Technical data				
							sleeve -30 °C ...+ 110 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	**lenght**	**colours**	**leads**	transition resistance	rated voltage	rated current	operating temperature
MFK 20 / 2,5 / ..(length) **/ ..**(colour) contact parts nickel-plated	25 cm 50 cm 100 cm 150 cm 200 cm	black red	PVC 2.5 mm²	5 mΩ 9 mΩ 18 mΩ 27 mΩ 35 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 10 °C ... + 80 °C

Other lengths, colours, wire square-sections, platings and Silicon-cable on request



Lamella-basket plug
- straight, with soldering cup
- with sleeve, unassembled

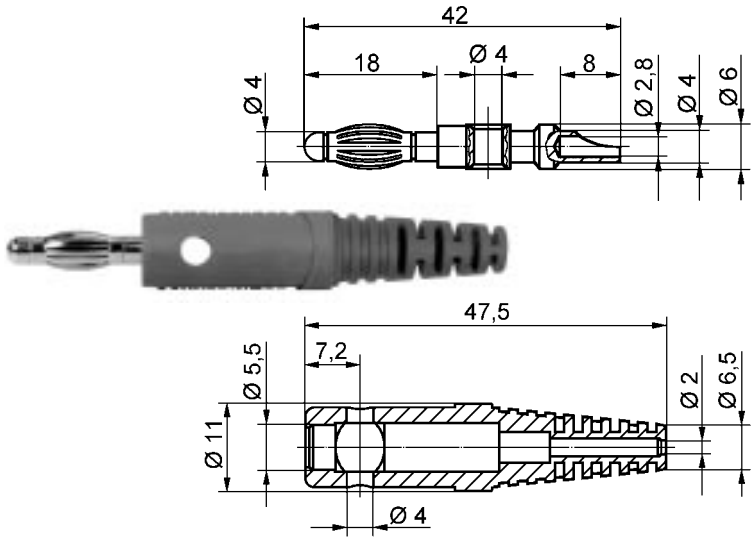
order no. **FK 8 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2,5 mm²**
for insulation diameter up to **4 mm**

colours : see table

order no. **FK 8 L AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table



Lamella-basket plug
- straight, with soldering cup
- with sleeve, unassembled

order no. **FK 82 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **0,5 mm²**
for insulation diameter up to **2 mm**

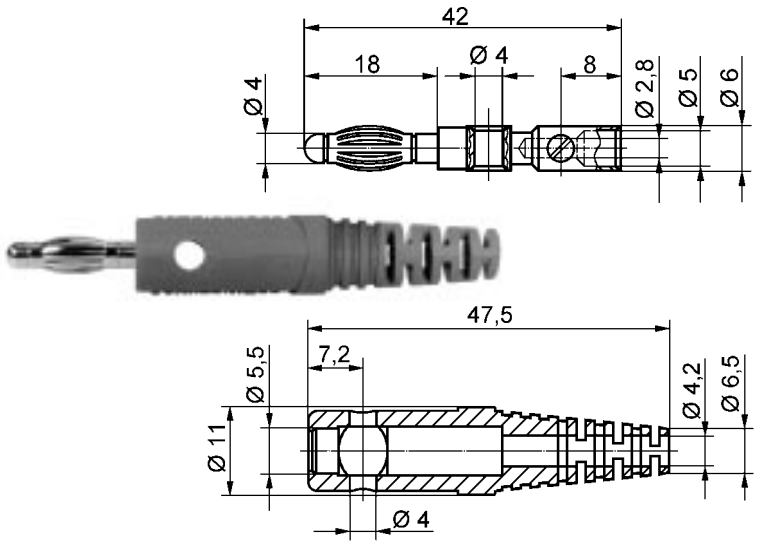
colours : see table

order no. **FK 82 L AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 8 L / ..(colour) contact part nickel-plated	ø 4 mm		soldering - 2,5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 8 L AU / ..(colour) contact part gold-plated	ø 4 mm	black red blue	soldering - 2,5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 82 L / ..(colour) contact part nickel-plated	ø 2 mm	yellow green	soldering - 0,5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C
FK 82 L AU / ..(colour) contact part gold-plated	ø 2 mm		soldering - 0,5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C

other colours and platings on request



Lamella-basket plug
- straight, with screw
- with sleeve, unassembled

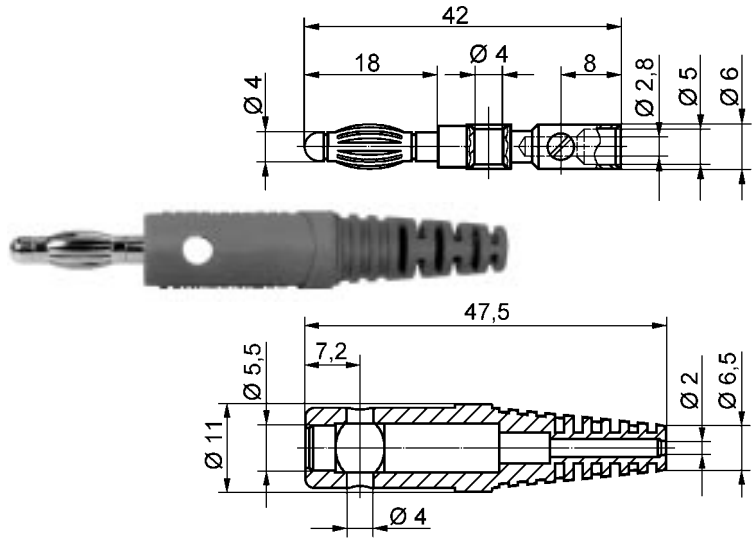
order no. **FK 8 S / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours : see table

order no. **FK 8 S AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table



Lamella-basket plug
- straight, with screw
- with sleeve, unassembled

order no. **FK 82 S / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **0.5 mm²**
for insulation diameter up to **2 mm**

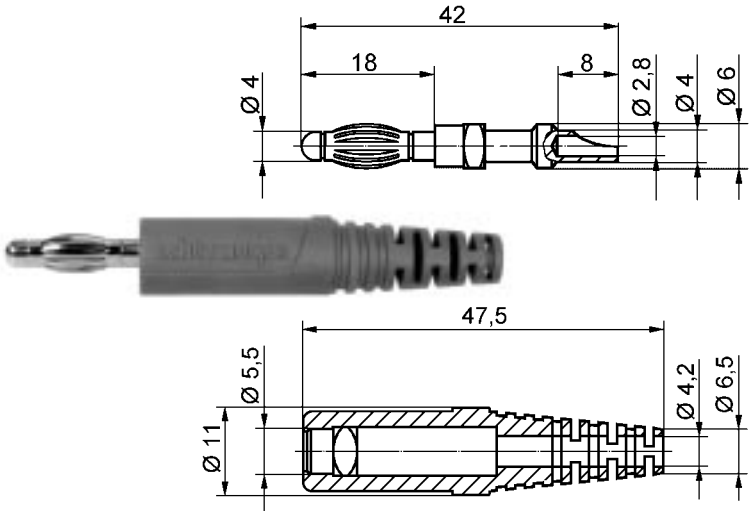
colours : see table

order no. **FK 82 S AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 8 S / ..(colour) contact part nickel-plated	ø 4 mm		screw - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 8 S AU / ..(colour) contact part gold-plated	ø 4 mm	black red blue	screw - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 82 S / ..(colour) contact part nickel-plated	ø 2 mm	yellow green	screw - 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C
FK 82 S AU / ..(colour) contact part gold-plated	ø 2 mm		screw - 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C

other colours and platings on request



Lamella-basket plug
- straight, with soldering cup
- with sleeve, unassembled

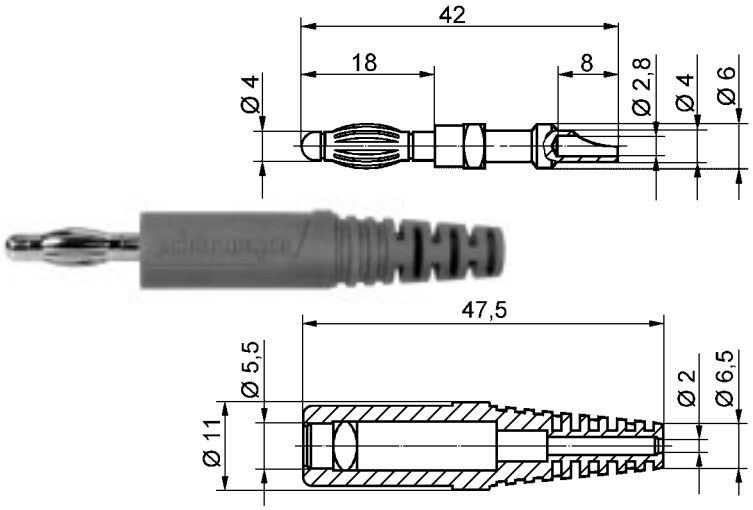
order no. **FK 9 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours : see table

order no. **FK 9 L AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table



Lamella-basket plug
- straight, with soldering cup
- with sleeve, unassembled

order no. **FK 92 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **0.5 mm²**
for insulation diameter up to **2 mm**

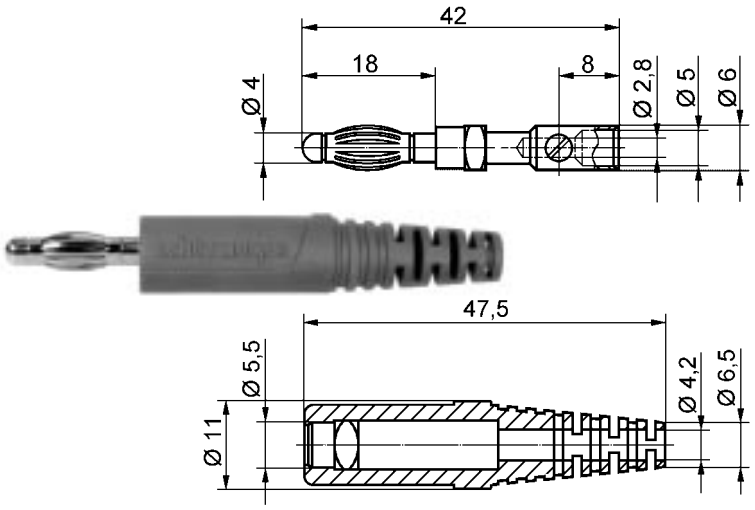
colours : see table

order no. **FK 92 L AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 9 L / ..(colour) contact parts nickel-plated	ø 4 mm		soldering - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 9 L AU / ..(colou) contact parts gold-plated	ø 4 mm	black red blue	soldering - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 92 L / ..(colou) contact parts nickel-plated	ø 2 mm	yellow green	soldering - 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C
FK 92 L AU / ..(colou) contact parts gold-plated	ø 2 mm		soldering - 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10A	- 30 °C ... + 110 °C

other colours and platings on request



Lamella-basket plug
- straight, with screw
- with sleeve, unassembled

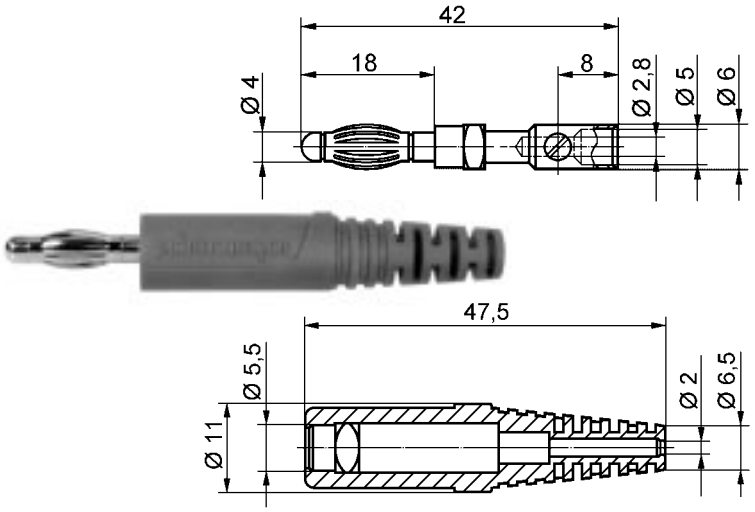
order no. **FK 9 S / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours : see table

order no. **FK 9 S AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table



Lamella-basket plug
- straight, with screw
- with sleeve, unassembled

order no. **FK 92 S / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

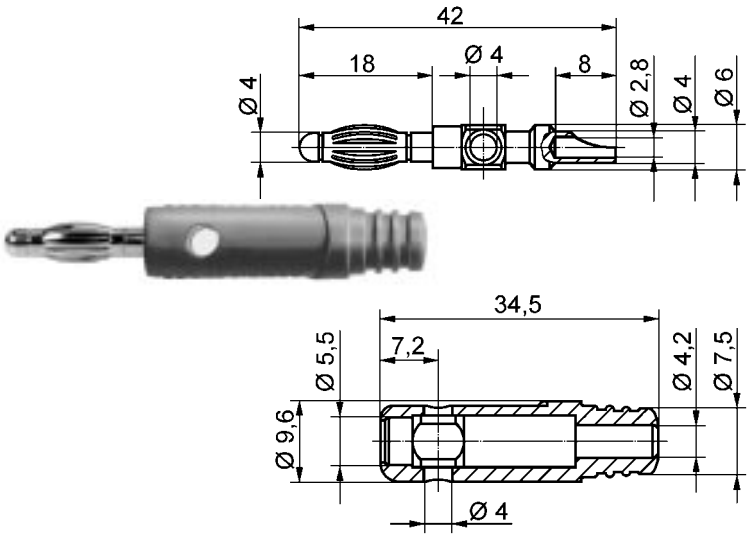
colours : see table

order no. **FK 92 S AU / ..**(colour)
- as above, but contact parts **gold-plated**

colours : see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 9 S / ..(colour) contact parts nickel-plated	ø 4 mm		screw up to 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 9 S AU / ..(colour) contact parts gold-plated	ø 4 mm	black red blue	screw up to 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 92 S / ..(colour) contact parts nickel-plated	ø 2 mm	yellow green	screw up to 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C
FK 92 S AU / ..(colour) contact parts gold-plated	ø 2 mm		screw up to 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C

other colours and platings on request

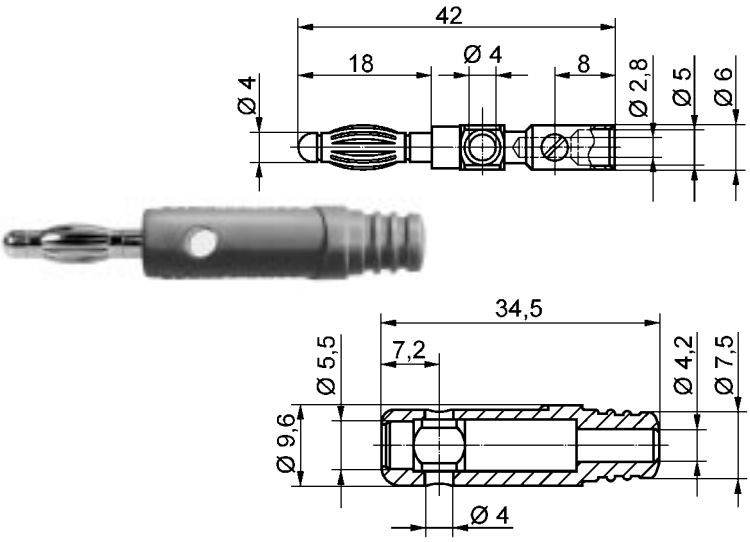


Lamella-basket plug
- straight, with soldering cup
- with sleeve, unassembled

order no. **FK 28 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours : see table



Lamella-basket plug
- straight, with screw
- with sleeve, unassembled

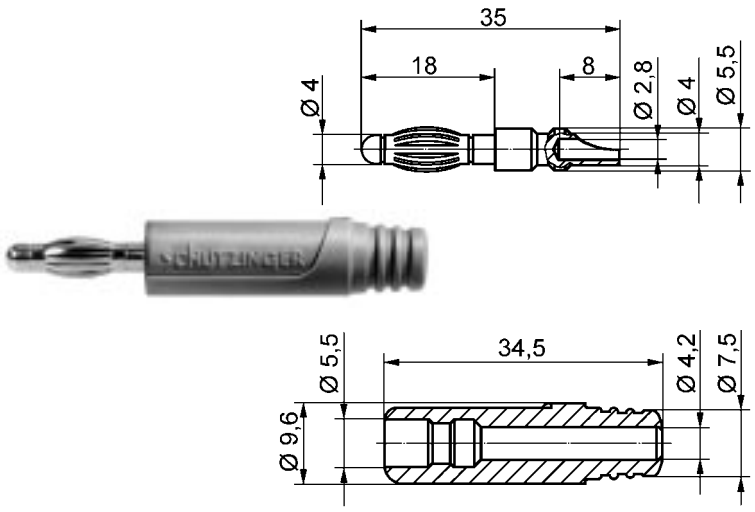
order no. **FK 28 S / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours : see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 28 L / ..(colour) contact parts nickel-plated	ø 4 mm	black red	soldering - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 28 S / ..(colour) contact parts nickel-plated	ø 4 mm	black red	screw - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C

other colours and platings on request

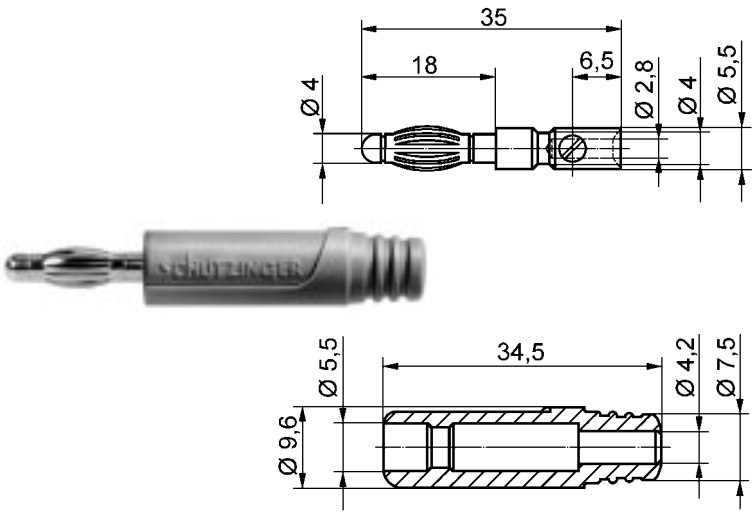


Lamella-basket plug
- straight, with soldering cup
- with sleeve, unassembled

order no. **FK 29 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours : see table



Lamella-basket plug
- straight, with screw
- with sleeve, unassembled

order no. **FK 29 S / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

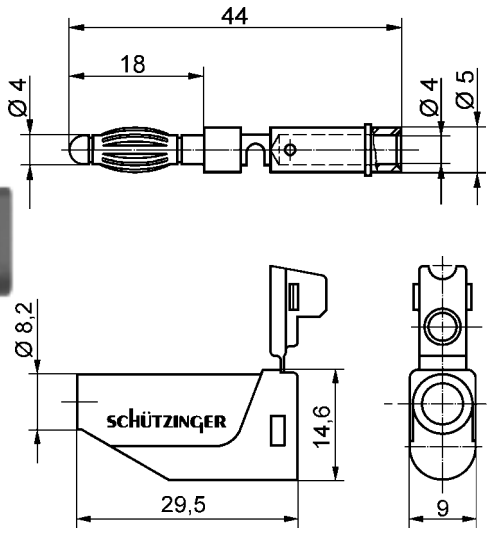
for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours : see table

General information			Technical data				
order no.	**sleeve for lead**	**colours**	**terminal**	**transition resistance**	**rated voltage**	**rated current**	**operating temperature**
FK 29 L / ..(colour) contact parts nickel-plated	ø 4 mm	black red	soldering - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
FK 29 S / ..(colour) contact parts nickel-plated	ø 4 mm	black red	screw - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C

other colours and platings on request

ø 4

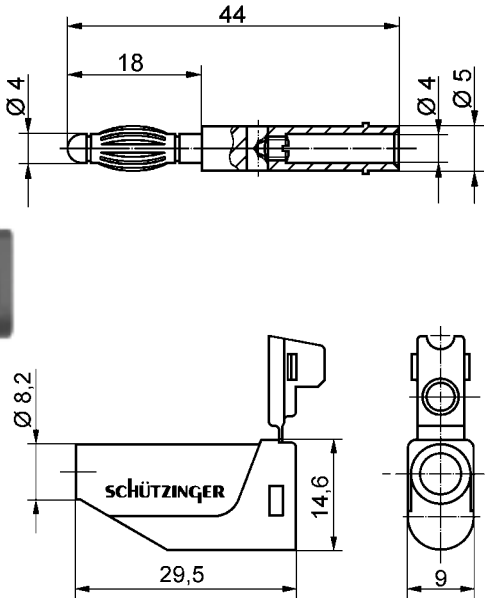


Lamella-basket plug
- soldering terminal
- with line in socket
- with sleeve, unassembled

order no. **FK 15 L / 1 / ..**(colour)
- contact parts **nickel-plated**
- sleeve PE (Hostalen)

for wire square-section up to **1 mm²**
for insulation diameter up to **4 mm**

colours: see table



Lamella-basket plug
- screw terminal
- with line in socket
- with sleeve, unassembled

order no. **FK 15 S / 1 / ..**(colour)
- contact parts **nickel-plated**
- sleeve PE (Hostalen)

for wire square section up to **1 mm²**
for insulation diameter up to **4 mm**

order no. **FK 15 S / 0,5 / ..**(colour)
- as above, but
- sleeve PE (Hostalen)

for wire square section up to **0.5 mm²**
for insulation diameter up to **2 mm**

colours: see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 15 L / 1 / ..(colour) contact part nickel-plated	ø 4 mm	black red blue yellow green	soldering - 1 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 110 °C
FK 15 S / 1 / ..(colour) contact part nickel-plated	ø 4 mm		screw - 1 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 110 °C
FK 15 S / 0,5 / ..(colour) contact part nickel-plated	ø 2 mm		screw - 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 110 °C

other colours and platings on request

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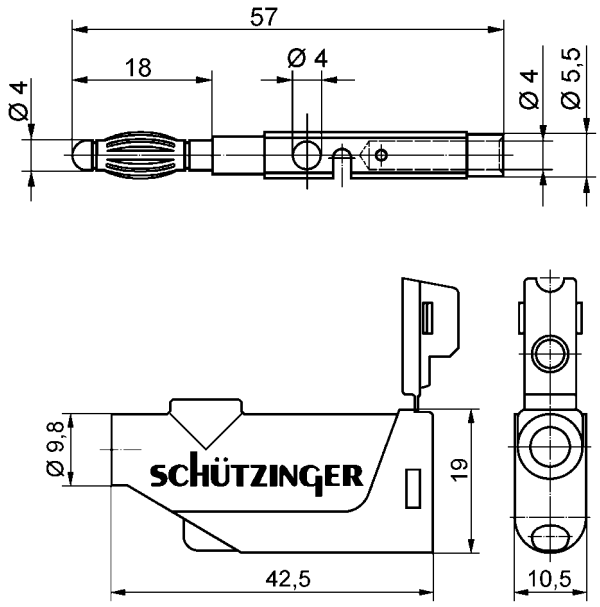
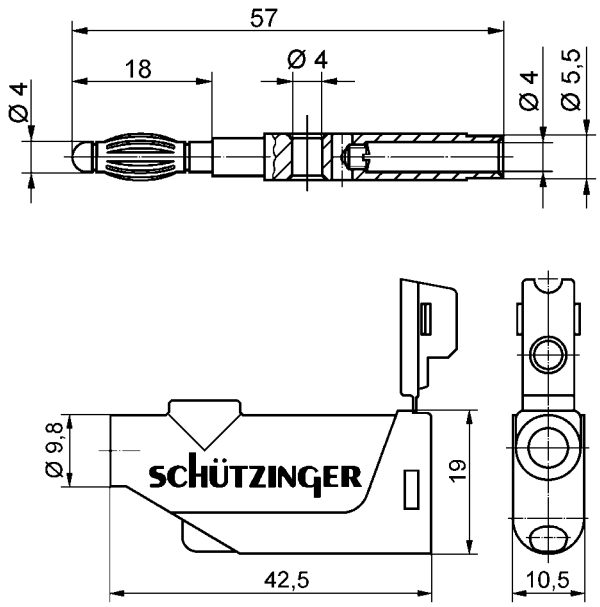


Lamella-basket plug
- soldering terminal
- with line in and parallel socket
- with sleeve, unassembled

order no. **FK 20 L / 1 / ..**(colour)
- contact parts **nickel-plated**
- sleeve PE (Hostalen)

for wire square section up to **1 mm²**
for insulation diameter up to **4 mm**

colours: see table



Lamella-basket plug
- screw terminal
- with line in and parallel socket
- with sleeve, unassembled

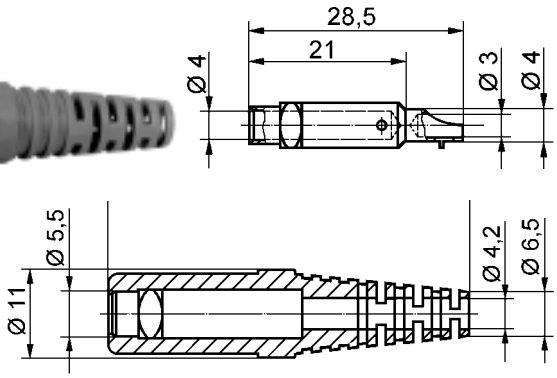
order no. **FK 20 S / 1 / ..**(colour)
- contact parts **nickel-plated**
- sleeve PE (Hostalen)

for wire square section up to **1 mm²**
for insulation diameter up to **4 mm**

colours: see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 20 L / 1 / ..(colour) contact part nickel-plated	ø 4 mm	black red blue	soldering - 1 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 110 °C
FK 20 S / 1 / ..(colour) contact part nickel-plated	ø 4 mm	yellow green	screw - 1 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 110 °C

other colours and platings on request

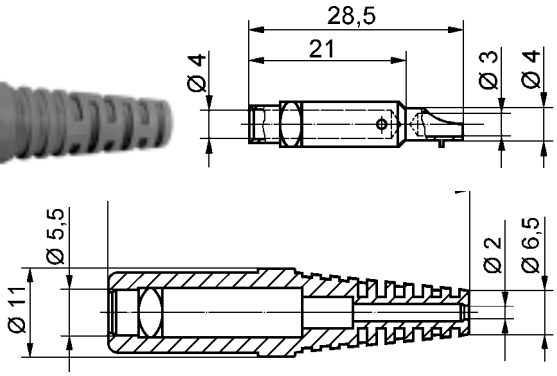


Coupler
- soldering cup
- with sleeve, unassembled

order no. **KU 09 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours: see table

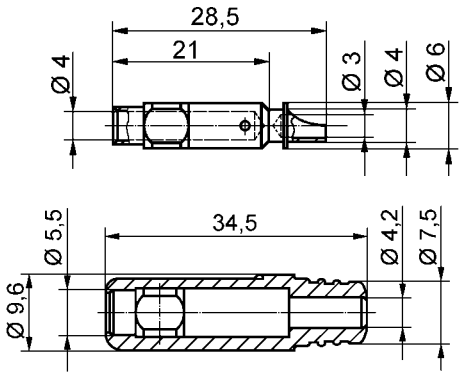


Coupler
- soldering cup
- with sleeve, unassembled

order no. **KU 92 L / ..**(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square section up to **0.5 mm²**
for insulation diameter up to **2 mm**

colours: see table



Coupler
- soldering cup
- with sleeve, unassembled

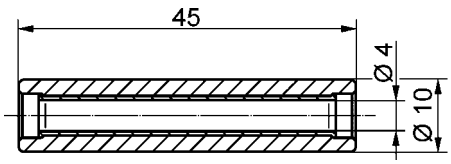
order no. KU 32 L / ..(colour)
- contact part **nickel-plated**
- sleeve TPE (Evoprene)

for wire square-section up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours: see table

General information			Technical data				
order no.	sleeve for lead	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
KU 09 L / ..(colour) contact part nickel-plated	ø 4 mm	black red blue	soldering - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C
KU 92 L / ..(colour) contact part nickel-plated	ø 2 mm	yellow green	soldering - 0.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 30 °C ... + 110 °C
KU 32 L / ..(colour) contact part nickel-plated	ø 4 mm	black red	soldering - 2.5 mm²	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 30 °C ... + 110 °C

other colours and platings on request

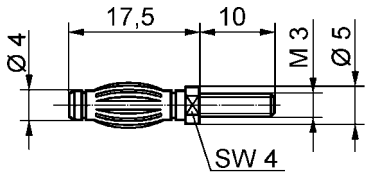


Coubler
- 2 in-line sockets
- with insulation

order no. **KU 320 / ..**(colour)
- contact part **brass**
- insulation Polystyrol

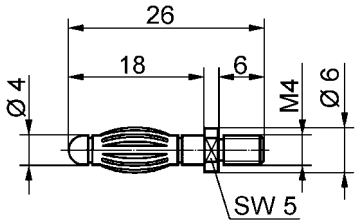
colours: see table

General information		Technical data				
order no.	**colours**	**terminal**	transition resistance	rated voltage	rated current	operating temperature
KU 320 / ..(colour) contact part brass	black red	2 x socket	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 10 °C ... + 70 °C



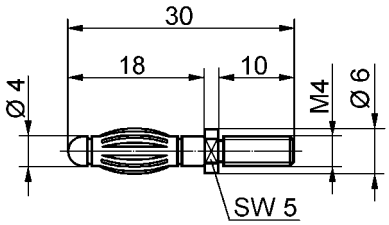
Lamella-basket plug with thread
- for keys with SW 4
- thread M3 x 10

order no. FK 1199
- contact part **nickel-plated**



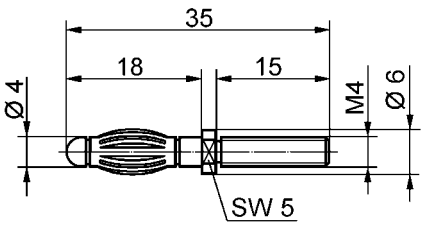
Lamella-basket plug with thread
- for keys with SW 5
- thread M4 x 6

order no. FK 1209
- contact part **nickel-plated**



Lamella-basket plug with thread
- for keys with SW 5
- thread M4 x 10

order no. FK 1210
- contact part **nickel-plated**

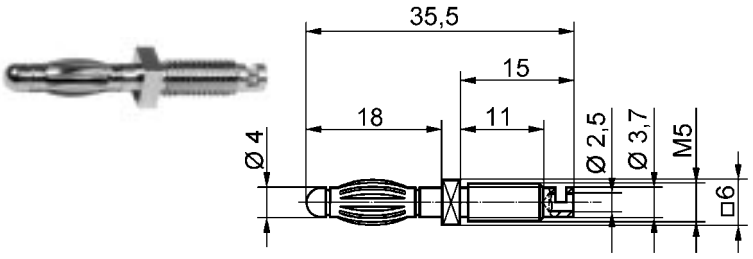


Lamella-basket plug with thread
- for keys with SW 5
- thread M4 x 15

order no. FK 1211
- contact part **nickel-plated**

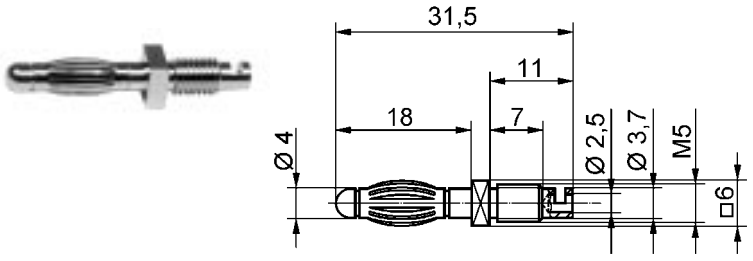
General information		Technical data				
order no.	thread	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 1199 contact part nickel-plated	M3 x 10	—	< 3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C
FK 1209 contact part nickel-plated	M4 x 6	—	< 3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C
FK 1210 contact part nickel-plated	M4 x 10	—	< 3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C
FK 1211 contact part nickel-plated	M4 x 15	—	< 3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C

other types and platings on request



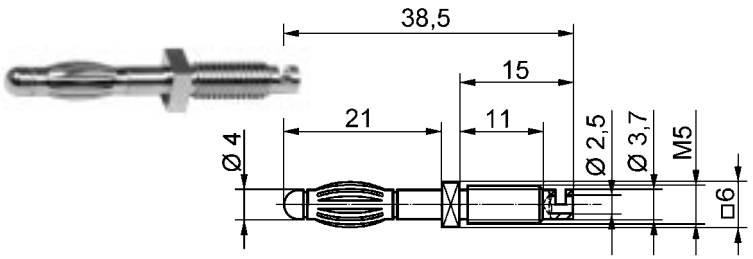
Lamella-basket plug with thread
- square for keys with SW 6
- thread M5 x 11
- soldering terminal for leads up to 2.5 mm²

order no. FK 1212
- contact part **nickel-plated**



Lamella-basket plug with thread
- square for keys with SW 6
- thread M5 x 7
- soldering terminal for leads up to 2.5 mm²

order no. FK 1215
- contact part **nickel-plated**

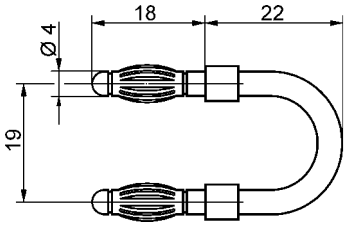


Lamella-basket plug with thread
- square for keys with SW 6
- thread M5 x 11
- soldering terminal for leads up to 2.5 mm²

order no. FK 1386
- contact part **nickel-plated**

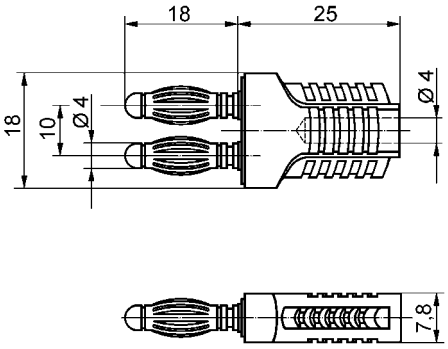
General information		Technical data				
order no.	thread	terminal	transition resistance	rated voltage	rated current	operating temperature
FK 1212 contact part nickel-plated	M5 x 11	soldering - 2.5 mm²	< 3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C
FK 1215 contact part nickel-plated	M5 x 7	soldering -2.5 mm²	< 3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C
FK 1386 contact part nickel-plated	M5 x 11	soldering - 2.5 mm²	< 3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C

other types and platings on request



Connecting plug
- without insulation

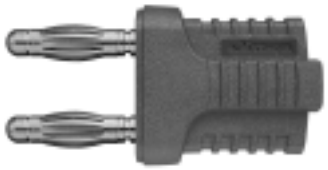
order no. **KURZ 19 - 4**
- contact part **nickel-plated**

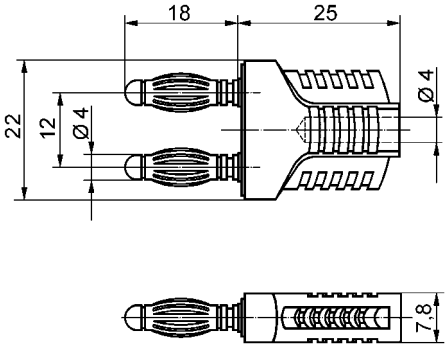


Connecting plug
- moulded insulation
- with rear socket ø 4 mm

order no. **KURZ 10 - 4 IG MB / ..** (colour)
- contact part **nickel-plated**
- insulation PA 6 (Polyamid)

colours: see table





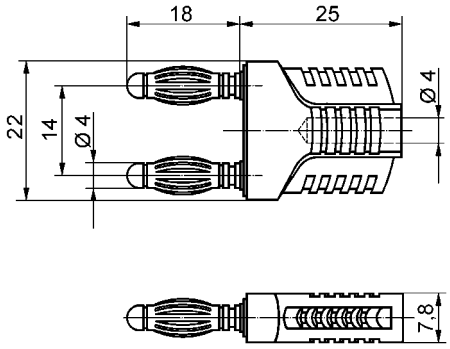
Connecting plug
- moulded insulation

order no. **KURZ 12 - 4 IG MB / ..** (colour)
- contact part **nickel-plated**
- insulation PA 6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
KURZ 19 - 4 contact part nickel-plated	—	—	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40°C... +110°C
KURZ 10 - 4 IG MB / ..(colour) contact part nickel-plated	black	rear- socket	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 25°C... +110°C
KURZ 12 - 4 IG MB / ..(colour) contact part nickel-plated	black	rear- socket	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 25°C... +110°C

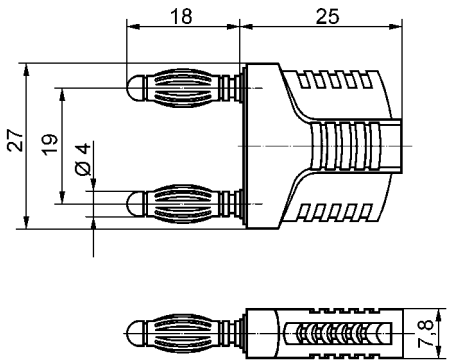
other colours and platings on request



Connecting plug
- moulded insulation
- with rear socket ø 4 mm

order no. **KURZ 14 - 4 IG MB / ..** (colour)
- contact part **nickel-plated**
- insulation PA 6 (Polyamid)

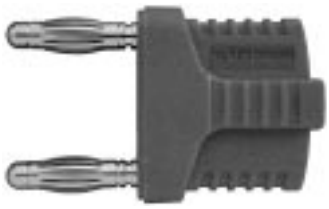
colours: see table

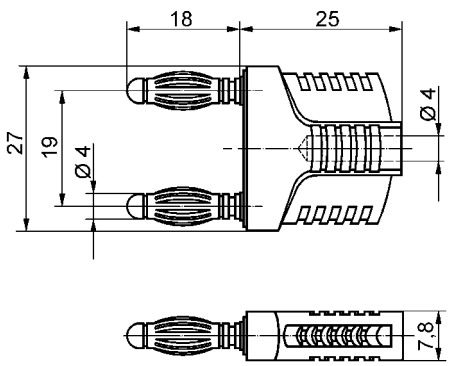


Connecting plug
- moulded insulation

order no. **KURZ 19 - 4 IG / ..** (colour)
- contact part **nickel-plated**
- insulation PA 6 (Polyamid)

colours: see table





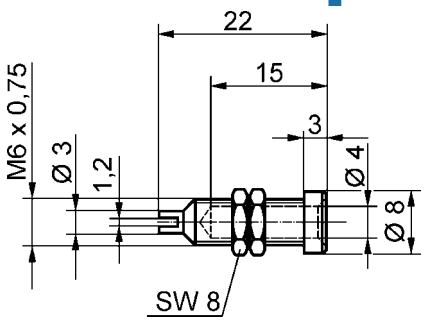
Connecting plug
- moulded insulation
- with rear socket ø 4 mm

order no. **KURZ 19 - 4 IG MB / ..** (colour)
- contact part **nickel-plated**
- insulation PA 6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
KURZ 14 - 4 IG MB / ..(colour) contact part nickel-plated	black	rear-socket	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 25°C... +110°C
KURZ 19 - 4 IG / ..(colour) contact part nickel-plated	black	—	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 25°C... +110°C
KURZ 19 - 4 IG MB / ..(colour) contact part nickel-plated	black red / white	rear-socket	3 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 25°C... +110°C

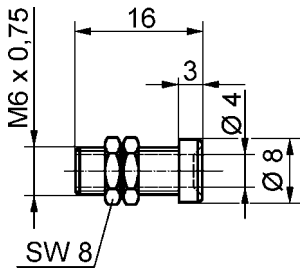
other colours and platings on request



Socket
- not insulated
- hole ø 6.1 mm

order no. BU 404

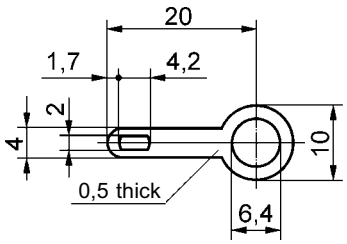
- contact part material	brass
- contact part	**nickel-plated**



Socket
- not insulated
- hole ø 6.1 mm

order no. BU 405

- contact part material	brass
- contact part	**nickel-plated**



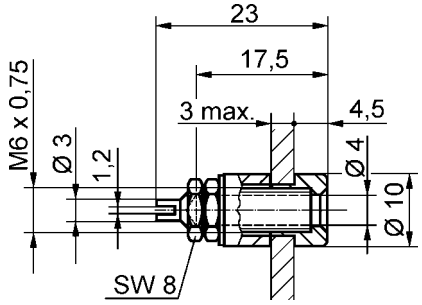
Soldering loop
- fits sockets IBU 401 / .. (colour), IBU 403 / .. (colour), BU 404, BU 405

order no. LÖ 6,4 x 20

- contact part material	brass
- plating	**tin-plating**

General information			Technical data				
order no.	max. torque for nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
BU 404 contact part nickel-plated	300 Ncm	—	soldering or soldering loop	< 10 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C
BU 405 contact part nickel-plated	300 Ncm	—	soldering or soldering loop	<10 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 40 °C ... + 110 °C
LÖ 6,4 x 20 tin-plated			soldering				

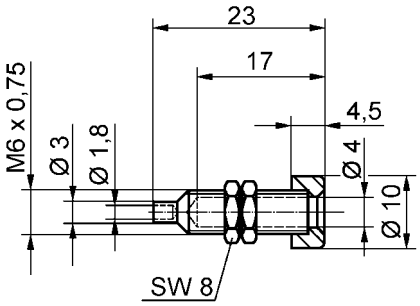
other types and platings on request



Socket
- fully insulated fitting
- insulated head screwed on
- hole ø 7.5 mm

order no. **IBU 401 / ..** (colour)

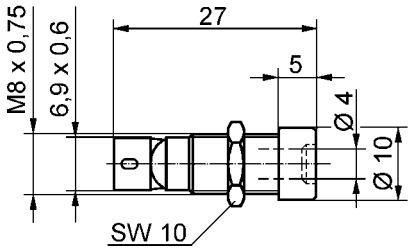
- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6 (Polyamid)
colours:	see table



Socket
- insulated head screwed on
- hole ø 6.1 mm

order no. **IBU 403 / ..** (colour)

- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6 (Polyamid)
colours:	see table



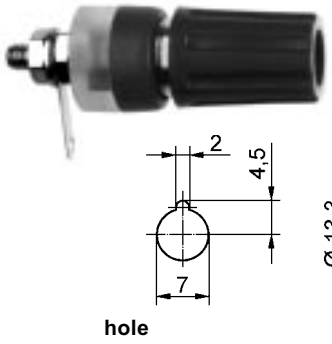
Socket
- insulated
- hole ø 8 mm

order no. **IBU 9213 / ..** (colour)

- contact part material	rolled brass sheet
- contact part	**tin-plated**
- insulation	ABS

General information			Technical data				
order no.	max. torque for nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
IBU 401 / .. (colour) contact part nickel-plated	300 Ncm	black, red, blue, yellow, green,white	soldering, solder loop	< 10 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 25 °C ... + 80 °C
IBU 403 / .. (colour) contact part nickel-plated	300 Ncm			< 10 mΩ	30 V_{AC} 60 V_{DC}	32 A	- 25 °C ... + 80 °C
IBU 9213 / .. (colour) contact part tin-plated	100 Ncm	black red	soldering, cable lug	< 10 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 30 °C ... + 90 °C

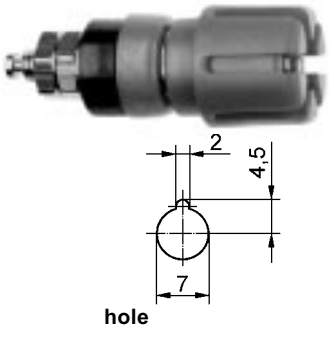
other types and platings on request



Terminal post
- with undetachable head

order no. **POL 1989 / ..** (colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



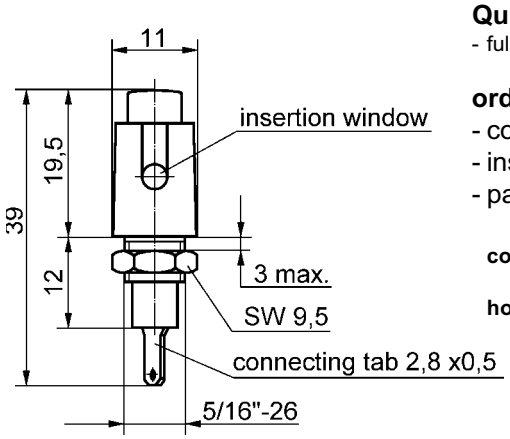
Terminal post
- with undetachable head

order no. **POL 1994 / ..** (colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information			Technical data				
order no.	max. torque for nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
POL 1989 / .. (colour) contact parts nickel-plated	100 Ncm	black red	soldering, soldering loop	< 2 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 80 °C
POL 1994 / .. (colour) contact parts nickel-plated	200 Ncm	black red		< 2 mΩ	30 V_{AC} 60 V_{DC}	25 A	- 25 °C ... + 80 °C

other types on request

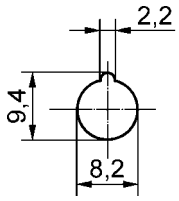


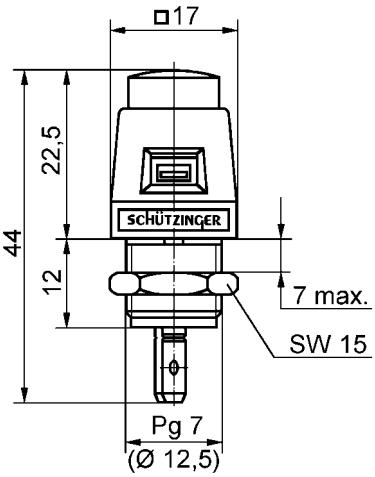
Quick-release terminal
- fully insulated

order no. **L 1757 / ..** (colour)

- contact parts	**nickel-plated**
- insulation	PP (Polypropylen)
- panel thickness	0.8 mm - 3 mm
colours:	see table

hole





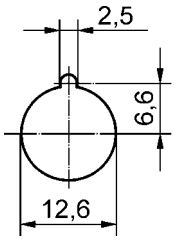
front insertion window **6.5 mm x 4 mm**
rear insertion window **8.0 mm x 4 mm**

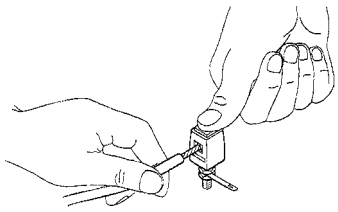
Quick-release terminal
- fully insulated

order no. **ESD 498 / ..** (colour)

- contact parts	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
- panel thickness	0.8 mm - 7 mm
colours:	see table

hole

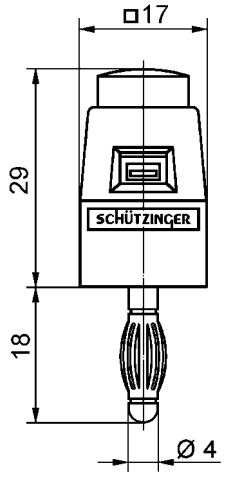




Functional description:
Wires and strands are connected between the spring jaws by pressing on the head of the terminal post.
Every quick-release terminal has an insertion window. The window size is approx. 8 mm x 4 mm. A strong compression spring guarantees good contact. The pressure of the compression spring amounts to approx. 19 N. The quick-release terminals are particulary suitable for quick connection and testing of series appliances.

General information			Technical data				
order no.	max. torque for nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
L 1757 / ..(colour) contact parts nickel-plated	85 Ncm	black red	FSH 2,8x0,5 or soldering	< 3 mΩ	30 V_{AC} 60 V_{DC}	5 A	- 25 °C ... + 70 °C
ESD 498 / ..(colour) contact parts nickel-plated	120 Ncm	black red	FSH 6,3x0,8 or soldering	< 3 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 90 °C

other colours and compression springs for ESD 498 / .. (colour) on request

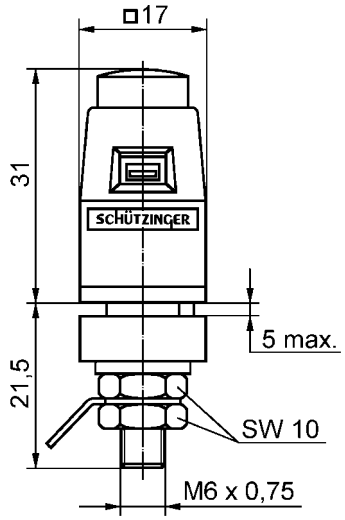


Quick-release terminal
- to plug in a 4 mm socket

order no. **SDK 502 / ..** (colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

front insertion window **6.5 mm x 4 mm**
rear insertion window **8.0 mm x 4 mm**

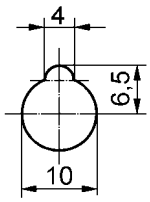


Quick-release terminal
- fully insulated for metal panels

order no. **SDK 503 / ..** (colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)
- panel thickness 0.8 mm - 7 mm

colours: see table

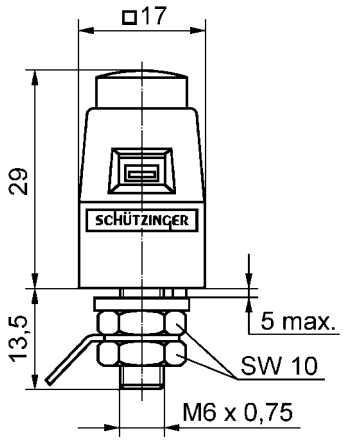
hole



front insertion window **6.5 mm x 4 mm**
rear insertion window **8.0 mm x 4 mm**

General information			Technical data				
order no.	max. torque for nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
SDK 502 / ..(colour) contact parts nickel-plated	—	black red	plug	< 3 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 90 °C
SDK 503 / ..(colour) contact parts nickel-plated	120 Ncm	black red	soldering loop cable lug	< 3 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 25 °C ... + 90 °C

other colours and compression springs on request

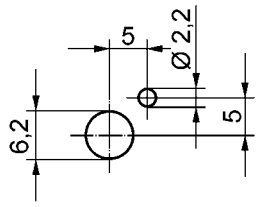


Quick-release-terminal
- fully insulated

order no. **SDK 504 / ..** (colour)

- contact parts	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
- panel thickness	0.8 mm - 7 mm
colours:	see table

hole

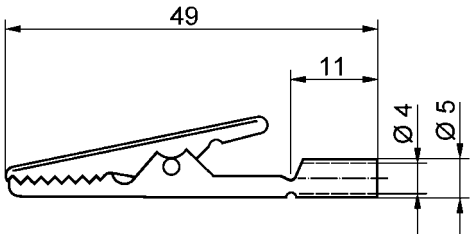


front insertion window	**6.5 mm x 4 mm**
rear insertion window	**8.0 mm x 4 mm**

Crocodile clip
- un-insulated
- socket terminal ø 4 mm

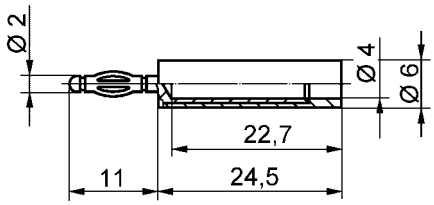
order no. **AK 305**

- contact parts material	steel
- contact parts	**nickel-plated**
- grips up to ø 8 mm	



General information			Technical data				
order no.	max. torque for nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
SDK 504 / ..(colour) contact parts nickel-plated	120 Ncm	black red	soldering loop or cable lug	< 3 mΩ	30 V_{AC} 60 V_{DC}	5 A	- 25 °C ... + 90 °C
AK 305 contact parts nickel-plated	—	—	socket	< 100 mΩ	30 V_{AC} 60 V_{DC}	16 A	- 40 °C ... + 110 °C

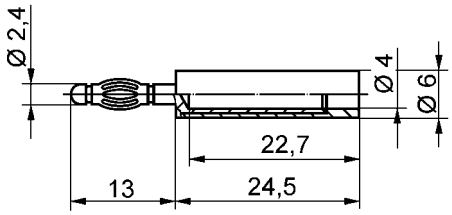
other colours and compression springs for SDK 504 / .. (colour) on request



Adapter
- for conecting ø 2 mm system to ø 4 mm safety system

order no. **A 20 - 40 S / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



Adapter
- for connecting ø 2.4 mm system toø 4 mm safety system

order no. **A 24 - 40 S / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	**colours**	**terminal**	transition resistance	rated voltage	rated current	operating temperature
A 20 - 40 / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 24 - 40 / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C

other colours and platings on request

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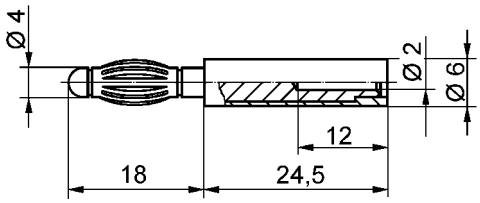
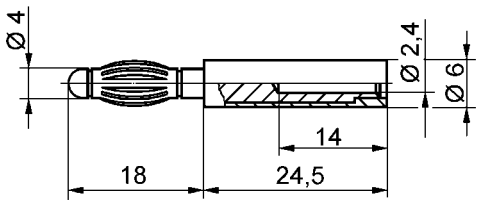


Adapter
- for connecting ø 4 mm - system to ø 2 mm - system

order no. **A 40 - 20 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

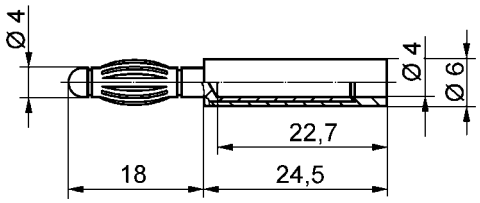
colours: see table



Adapter
- for connecting ø 4 mm - system to ø 2.4 mm - system

order no. **A 40 - 24 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



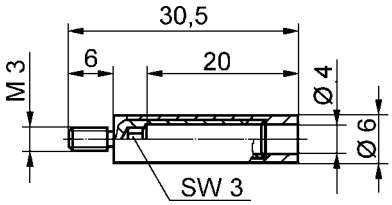
Adapter
- for connecting ø 4 mm - system to ø 4 mm safety - system

order no. **A 40 - 40 S / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
A 40 - 20 / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 40 - 24 / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 40 - 40 S / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C

other colours and platings on request

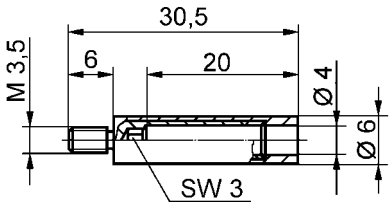


Socket

- **to facilitate assembly there is a hexagon at the bottom of the socket for a 3 mm Allen key. The Allen key can be used to counterhold when tightening the socket.**
- safety plugs with rigid sleeve can be used .

order no. BU 2240 S / .. (colour)

- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
colours:	see table

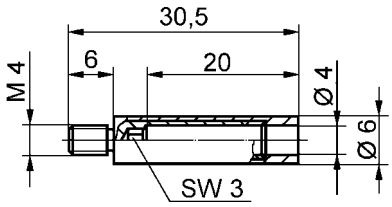


Socket

- **to facilitate assembly there is a hexagon at the bottom of the socket for a 3 mm Allen key. The Allen key can be used to counterhold when tightening the socket.**
- safety plugs with rigid sleeve can be used .

order no. BU 2242 S / .. (colour)

- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
colours:	see table



Socket

- **to facilitate assembly there is a hexagon at the bottom of the socket for a 3 mm Allen key. The Allen key can be used to counterhold when tightening the socket.**
- safety plugs with rigid sleeve can be used .

order no. BU 2244 S / .. (colour)

- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
colours:	see table

General information			Technical data				
order no.	**max. torque**	**colours**	**terminal**	transition resistance	rated voltage	rated current	operating temperature
BU 2240 S / .. (colour) contact part nickel-plated	80 Ncm	M3 x 6	black red blue	<10 mΩ	30 V_{AC} * 60 V_{DC}*	32 A	- 25 °C ... + 90 °C
BU 2242 S / .. (colour) contact part nickel-plated	85 Ncm	M3,5 x 6		<10 mΩ	30 V_{AC}* 60 V_{DC}*	32 A	- 25 °C ... + 90 °C
BU 2244 S / .. (colour) contact part nickel-plated	100 Ncm	M4 x 6		<10 mΩ	30 V_{AC}* 60 V_{DC}*	32 A	- 25 °C ... + 90 °C

* depending on assembly up to 900 V, CAT II, degree of contamination II

other colours and platings on request

Notes

Notes

Main characteristics and advantages

Safety laboratory programme up to 1000 V in accordance with IEC 1010-2-031

The plug insulation sleeve is rigid and cannot be pushed back (as with the sliding sleeve system). The counterparts, e.g. safety threaded sockets, are appropriately formed for insertion of the plugs.

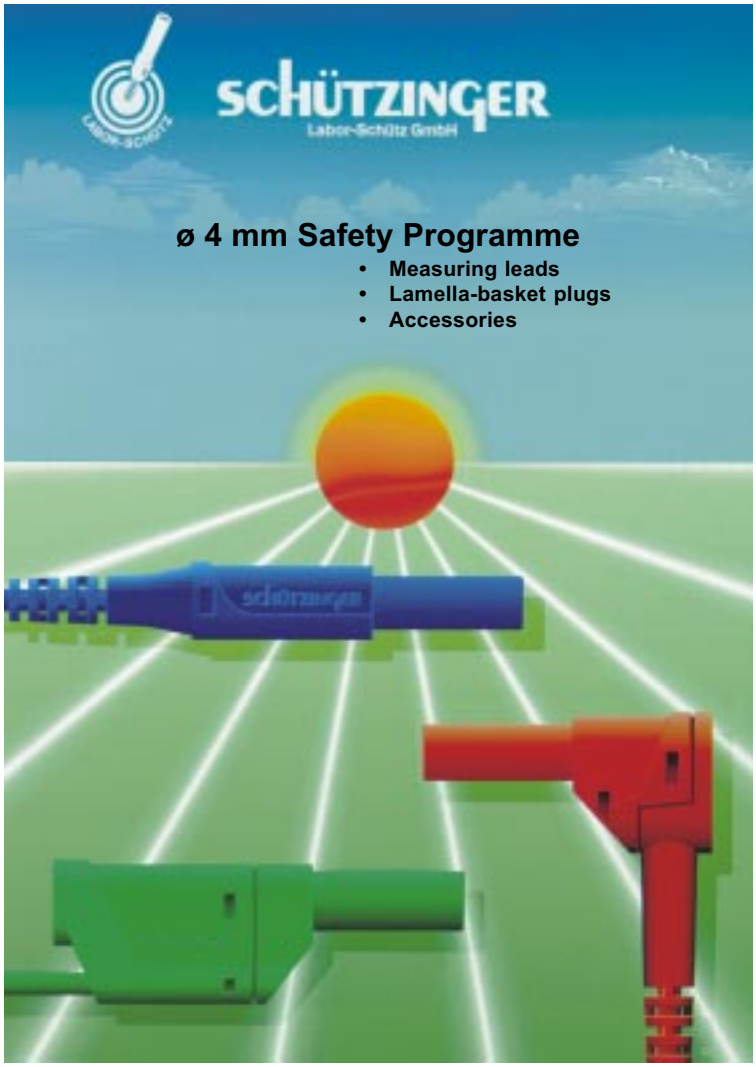
Additional safety
is attained by means of an insulating protective cap placed on the contact pin. This prevents unintentional contact from the front.

Reliable and touchproof connections
High-grade contact materials such as brass or copper-beryllium, which are nickel-plated or gold-plated, guarantee excellent contact reliability and prevent corrosion.

Robust assembly
Crush-proof insulation means that these plug connectors also withstand considerable mechanical loads.

Wide range, universal application

Measuring leads: Various types suitable for operation up to 1000 V, CAT II, pollution degree 2 and for constant currents up to 32 A. Simple possibility of interchange due to axial socket connection.
Test probes: Types for operation up to 1000 V, CAT III, pollution degree 2 also assembled with lead and safety lamella-basket plug. We also offer test probes with interchangeable probe sets.
Safety sockets: Many types for various requirements: fully insulated, as threaded- or press-in sockets with many different connection possibilities.
Safety lamella-basket plugs and labatory sockets:
Sockets with thread or clamp connection, plugs with lamella-basket contact.
Crocodile clips: Fully insulated with screw-in and socket connections
Quick-release terminals: Different types - with soldering terminal or with tab for flat pin sleeve 6.3 mm. As threaded or pluged quick-release terminal ideally suitable to achieve quick contact of strands and wires.



Important note
The safety of operating personnel is only then ensured when all parts are from the safety laboratory programme. Reference is made to the safety regulations VDE 0100, VDE 0105 and the regulations for the prevention of accidents VBG 4 of the trade association of precision engineering and electro-technics as well as to the **explanations on safety** commencing on the next page.

General information
In the case of special applications, verification whether products listed in this catalogue comply with regulations other than those stated is the responsibility of the user.

Reference to other laboratory plug connector series
Our ø **2 mm** programme is to be found ..... **page 1**
Our ø **2.4 mm** programme is to be found ..... **page 9**
Our ø **4.0 mm** programme is to be found .... **page 17**

If you have any queries regarding application possibilities, technical data or special designs we will gladly advise you.

Explanations on safety for measuring equipment

On the subject of safety at work ....

Maximum safety when working with electrical measuring equipment must be the main objective for you as user and for us as manufacturer.

It goes without saying that specialized knowledge is a condition to **work** safely with electrical measuring equipment. However, to avoid accidents it is just as important to consider several aspects when **selecting** electrical measuring equipment.

Selection of correct measuring equipment
Working safety cannot be ensured by the product alone. It equally depends upon the specific situation in which the measuring equipment is to be used. The following questions, for example, arise:

- What is the measuring task?
- Which voltage can occur?
- At which point in the network are measurements to taken?
- Accessibility of the test object?
- Enviromental conditions?

Responsability for selecting the correct equipment is with the user at work place.
All the conditions must be assossed before deciding on the appropriate equipment to be used.
In effect:

Safety at work =

SCHÜTZINGER - equipment
+ correct application

To be precise, users wishing to work safely and in accordance with the relevant standards should take the following points into consideration:

Is the selected voltage range for **protection against accidental contact** sufficiently high?

The measuring equipment should be designed for voltages at least equivalent to the maximum expected voltage. In the case of uncertainty, the measuring equipment should be selected from the range providing greater protection.

In which **overvoltage category** are the measurements to be carried out?

The user must be sure **where** in the network he is working. Which surge voltages are to be expected essentially depends on where in the network the measurements are carried out.

Which **degree of pollution** is to be expected during the planned measuring?

When using electrical measuring equipment it is essential to establish the surrounding conditions. The user should consider whether pollution or moisture are to be expected.

Essential to safe handling of measuring equipment is its **proper use.**

A practical example of proper use is holding an article of measuring equipment by its designated grasp.

Note:
Should you not be familiar with such terms as protection against accidental contact, overvoltage category, degree of pollution, etc. the meaning of these can be found on the following pages.

Hand-held and manually operated measuring equipment

Particular demands regarding safety should be made on measuring equipment with which the user comes into direct contact. IEC 1010, part 2-031 takes this important standard specification into account and specifically covers hand-held and manually operated measuring equipment.

Insulation

IEC 1010, Part 2-031 includes the stipulation of double or strengthened insulation on principle for hand-held and manually operated measuring equipment. Schützinger strictly adheres to the regulations of this standard. All Schützinger safety test and measuring leads are designed with strengthened or double insulation.

Connection between plug and leads

The stipulations in IEC 1010, Part 2-031 also include that soldered connections of hand-held measuring equipment may not be used.
All leads on Schützinger safety measuring equipment are crimped, insuring total safety and a longer life expactancy over conventional units.

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Explanations on safety for measuring equipment

Definition of terms

Overvoltage, overvoltage category

Overvoltages are spoken of when, for example, due to switching operations or lightning strikes the nominal voltage of an electric network or in electrical appliances is temporarily exceeded. Which overvoltages are to be expected near or in electrical appliances essentially depends upon the point of the network at which the relevant appliance is located.

Rule of thumb
The greater the number of switch and safety devices to be found on the current path between the origin of the overvoltage and the relevant point of the network, the lower the overvoltages to be expected.

As it is impossible to determine the precise possible overvoltage for each individual case, so-called overvoltage categories are applied.

The division into overvoltage categories follows from the **insulation coordination** which is defined in DIN VDE 0110 and IEC 664-1. The values given there for the surge voltages (transients) to be expected relate to the voltage limiters or safety switches actually existing in the electric networks, their task being not to let through surge voltages above a certain level.

DIN VDE 0110 and IEC 664 differentiate between 4 overvoltage categories (CAT):

CAT I applies to electrical equipment used in appliances in which only minor overvoltages can occur.
Example: Within electronic appliances after the input transformer.

CAT II applies to electrical equipment in appliances in which lightning strikes need not be considered although where overvoltages due to switching operations could occur.
Example: Electrical equipment between appliance and socket, within electrical appliances without input transformers, household appliances.

CAT III includes, unlike overvoltage category II, electrical equipment on which special demands are made regarding safety and accessibility.
Example: Fixed installations in buildings, contactors, safety devices, switches, sockets.

CAT IV applies to electrical equipment for which lightning strikes also have to be considered.
Example: Ripple control receiver, meters, connections to aerial lines.

Nominal voltages to earth (V_{AC} oder V_{DC})	overvoltage category I	II	III	IV
	surge voltage to be expected (in V)			
50	330	500	800	1500
100	500	800	1500	2500
150	800	1500	2500	4000
300	1500	2500	4000	6000
600	2500	4000	6000	8000
1000	4000	6000	8000	12000

Table: Surge voltages to be expected

A summary of the surge voltages to be expected when working in a certain overvoltage category is given in Table 1 for different nominal voltages. These surge voltages are applied when calculating the insulation strength.

Degree of pollution

The insulation property of measuring equipment is greatly reduced by surface pollution. Water or dust and soot particles form conductive bridges and decrease the resistance of the creepage distances considerably.
DIN VDE 0110 and IEC 664 differentiate between four degrees of pollution:

1 No pollution occurs or is only dry, non-conductive. The pollution is of no consequence.
Example: Within enclosed appliances

2 Only non-conductive pollution occurs.
Occasional temporary conductibility is to be expected due to moisture.
Example: Laboratory, light industry

3 Conductive pollution occurs or dry, non-conductive pollution which becomes conductive as moisture is to be expected.
Example: Heavy industry, short operation in the open.

4 Pollution leads to constant conductibility.
Example: Assembly in the open, conductibility caused by conductive dust, rain or snow.

Note:
Pollution degree 1 can never be kept to with hand-held measuring equipment as even slightly sweaty hands signify pollution degree 2. Schützinger measuring equipment should not be used in the case of pollution degree 4 because with constant conductibility of the surroundings even extremely long creepage distances cannot guarantee absolute safety against dangerous voltages.

Explanations on safety for measuring equipment

Protection against accidental contact

Protection against accidental contact is very important to safety when dealing with equipment for electrical measuring purposes. This term is always associated with a voltage specification and stands for an upper limit of electrical voltage up to which this piece of equipment can safely be used. Among other things, protection against accidental contact depends upon the relevant overvoltage category and under which surrounding conditions measurements are carried out. If no further details are provided, the voltage specifications given in this catalogue refer to overvoltage category II and degree of pollution 2.

The following tables assist in determining the necessary voltage range of protection should you carry out your measurements in other overvoltage categories or the degree of pollution be different. Basis for the conversion are the voltage specifications given in the cata-logue which are shaded grey in the tables below.

pollution degree	overvoltage category I	II	III	IV
1	600	300	150	100
2	300		150	100
3	50	50	50	50

pollution degree	overvoltage category I	II	III	IV
1	1500	1000	600	300
2	1150		600	300
3	450	450	450	300

pollution degree	overvoltage category I	II	III	IV
1	2000	1500	1000	600
2	1600		1000	600
3	600	600	600	600

Tables 2 to 4:
Permissible operating voltages to earth of safety measuring equipment (in accordance with the voltage ranges of protection against accidental contact)

Example:
Should you work in overvoltage category III using measuring equipment classified in the catalogue for 1000 V, CAT II (middle table), your protection is reduced to 600 V. Should pollution degree 3 apply, the protection is further reduced to 450 V.

Note:
These considerations are relevant as soon as work is concerned using measuring equipment designed for voltages higher than the protective low voltage 30V_{AC} / 60 V_{DC} .

Creepage distance

Creepage distances along the surface of the insulating material between two conductive parts.

Clearance

The shortest distance in air between two conductive parts.

Note:
Keeping to sufficiently long clearances and creepage distances is essential for the set-up of safe measuring equipment and, in addition to the insulation thickness, decisive in defining the nominal voltage.

Basic insulation

Insulation, the failure of which could cause a risk of electric shock.

Supplementary insulation

Independent insulation applied in addition to **basic insulation** in order to provide protection against electric shock in the event of a failure of **basic insulation**.

Double insulation

Insulation comprising both **basic insulation** and **supplementary insulation**.

Reinforced insulation

Insulation which provides protection against electric shock not less than that provided by **double insulation**. It may comprise several layers which cannot be tested single as **supplementary insulation** or **basic insulation**.

Note:
The creepage distances and clearances for double and strengthened insulation are twice as long as for the basic insulation. You will find double and strengthened insulation marked in the catalogue and on the products.

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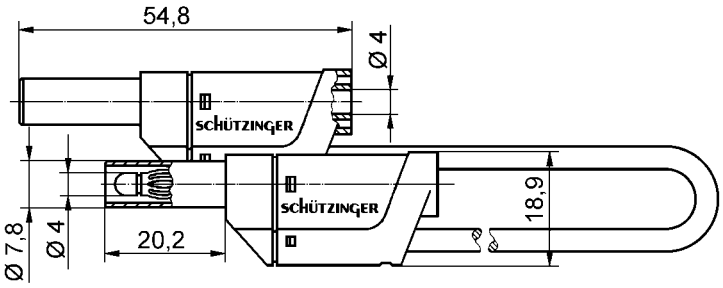


Measuring lead

- 2 safety lamella-basket plugs crimped on highly flexible lead. In accordance to IEC 1010, BG tested and awarded the Design Award IF 95.

order no. **VSFK 40 / 2,5 / ..**(length) / **..**(colour)
- lead 2.5 mm²
  with tension relief
  PVC double insulated
- contact parts **nickel-plated**
- sleeves PA 6.6 (Polyamid)

colours see table

order no. **VSFK 41 / 2,5 / ..**(length) / **..**(colour)
- as above
- contact parts **gold-plated**

colours see table

ø 4 safety

General information			Technical data				
							sleeves -25 °C ... + 90 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	lengths	colours	lead	transition resistance	rated voltage	rated current	operating temperature
VSFK 40 / 2,5 / ..(length) / **..**(colour) contact parts nickel-plated	25 cm 50 cm 100 cm 150 cm 200 cm	black red blue yellow green	PVC 2.5 mm²	5 mΩ 9 mΩ 17 mΩ 25 mΩ 35 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C
VSFK 41 / 2,5 / ..(length) / **..**(colour) contact parts gold-plated	25 cm 50 cm 100 cm 150 cm 200 cm	black red blue yellow green	PVC 2.5 mm²	5 mΩ 8 mΩ 14 mΩ 22 mΩ 27 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C

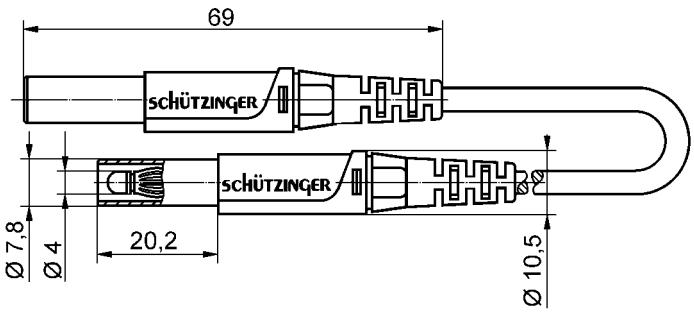
other lengths, platings and wire square sections and silicon-leads on request

Measuring lead

- 2 safety lamella-basket plugs crimped on highly flexible lead. In accordance to IEC 1010, BG tested and awarded the Design Award IF 95.

order no. **MSFK 30 / 2,5 / ..**(length) / **..**(colour)
- lead 2.5 mm²
  with tension relief
  PVC-double-insulated
- contact parts **nickel-plated**
- sleeves PA 6.6 (Polyamid)

colours see table



order no. **MSFK 31 / 2,5 / ..**(length) / **..**(colour)
- as above
- contact parts **gold-plated**

colours see table

General information			Technical data				
order no.	lengths	colours	lead	transition resistance	rated voltage	rated current	operating temperature (sleeves -25 °C ... + 90 °C, PVC-insulated lead -10 °C ... + 80 °C)
MSFK 30 / 2,5 / ..(length) / **..**(colour) contact parts nickel-plated	25 cm 50 cm 100 cm 150 cm 200 cm	black red	PVC 2.5 mm²	5 mΩ 9 mΩ 17 mΩ 25 mΩ 35 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C
MSFK 31 / 2,5 / ..(length) / **..**(colour) contact parts gold-plated	100 cm 200 cm	black red	PVC 2.5 mm²	14 mΩ 27 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C

other lengths, platings and wire square sections and Silikon-leads on request

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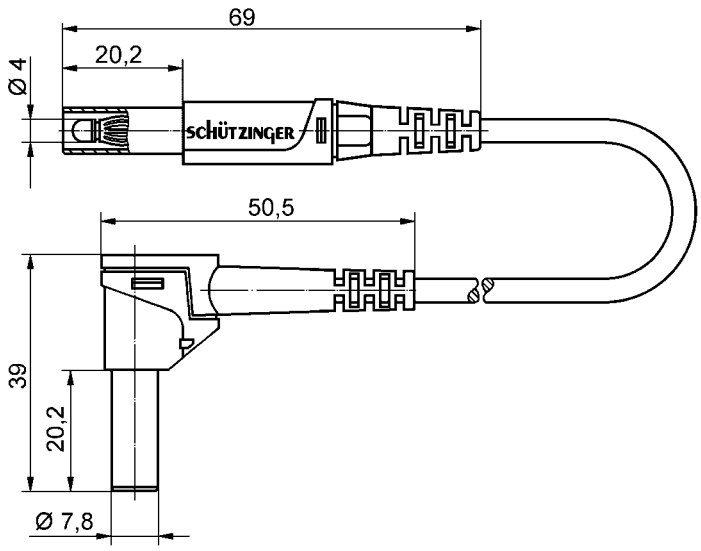


Measuring lead
- 2 safety lamella-basket plugs crimped on highly flexible lead. In accordance to IEC 1010, BG tested and awarded the Design Award IF 95.

order no. **MSFK 50 / 2,5 / ..**(length) / **..**(colour)
- lead 2.5 mm²
  with tension relief
  PVC-double-insulated
- contact parts **nickel-plated**
- sleeves PA 6.6 (Polyamid)

colours see table

order no. **MSFK 51 / 2,5 / ..**(length) / **..**(colour)
- as above
- contact parts **gold-plated**

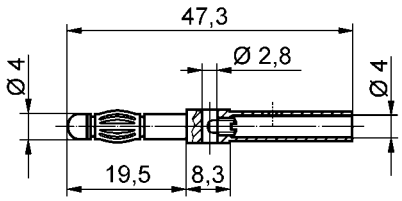
colours see table

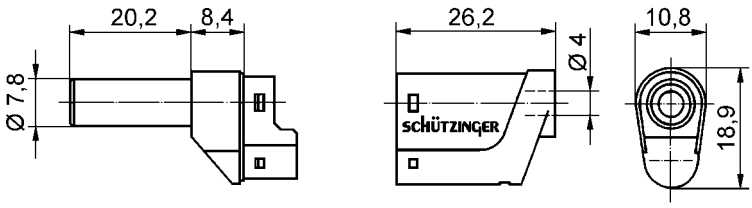
General information			Technical data				
							sleeves -25 °C ... + 90 °C PVC-insulated lead -10 °C ... + 80 °C
order no.	**lengths**	**colours**	**lead**	transition resistance	rated voltage	rated current	operating temperature
MSWFK 50 / 2,5 / ..(length) / **..**(colour) contact parts nickel-plated	25 cm 50 cm 100 cm 150 cm 200 cm	black red blue yellow green	PVC 2.5 mm²	5 mΩ 9 mΩ 17 mΩ 25 mΩ 35 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C
MSWFK 51 / 2,5 / ..(length) / **..**(colour) contact parts gold-plated	100 cm 200 cm	black red	PVC 2.5 mm²	14 mΩ 27 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C

other lengths, platings and wire square sections and Silikon-leads on request

according to IEC 1010

Safety lamella-basket plug
- screw terminal
- with axial socket
- with sleeve, unassembled





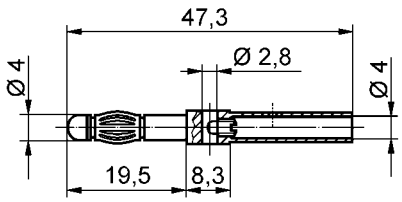
order no. **SFK 40 S / 1 / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)

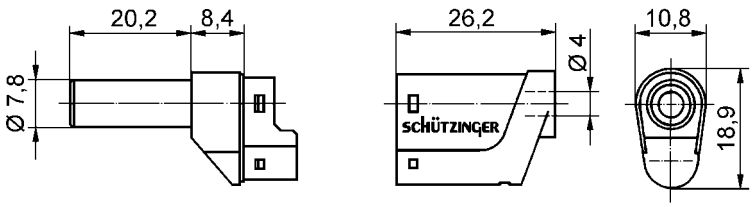
for conductors up to **1 mm²**
for insulation diameter up to **4 mm**

colours: see table

according to IEC 1010

Safety lamella-basket plug
- screw terminal
- with axial socket
- with sleeve, unassembled





order no. **SFK 40 S / 2,5 / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)

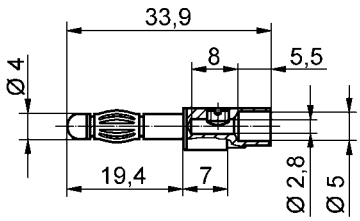
for conductors up to **2.5 mm²**
for insulation diameter up to **4 mm**

colours: see table

General information			Technical data				
order no.	sleeves for leads	colours	terminal	Transition resistance	Rated voltage	Rated current	operating temperature
SFK 40 S / 1 / ..(colour) contact part nickel-plated	ø 4 mm	black, red, blue, green, yellow	screw up to 1 mm²	3 mΩ	1000 V CAT II	16 A	- 25 °C ... + 90 °C
SFK 40 S / 2,5 / ..(colour) contact part nickel-plated	ø 4 mm		screw up to 2.5 mm²	3 mΩ	1000 V CAT II	32 A	- 25 °C ... + 90 °C

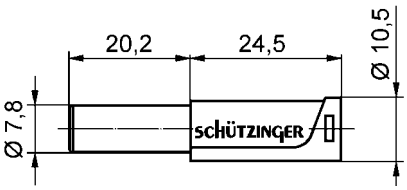
other colours and platings on request

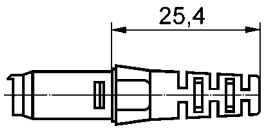
Safety lamella-basket plug
- screw terminal
- with sleeve, unassembled



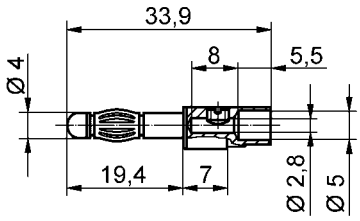
order no. **SFK 30 S / 1 / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)
  for conductors up to **1 mm²**
  for insulation diameter up to **4 mm**

colours: see table



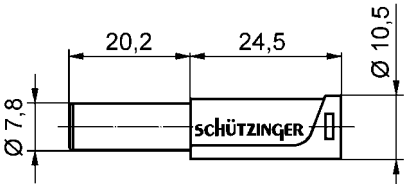


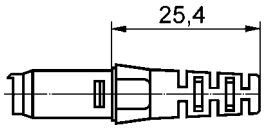
Safety lamella-basket plug
- screw terminal
- with sleeve, unassembled



order no. **SFK 30 S / 2,5 / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)
  for conductors up to **2.5 mm²**
  for insulation diameter up to **4 mm**

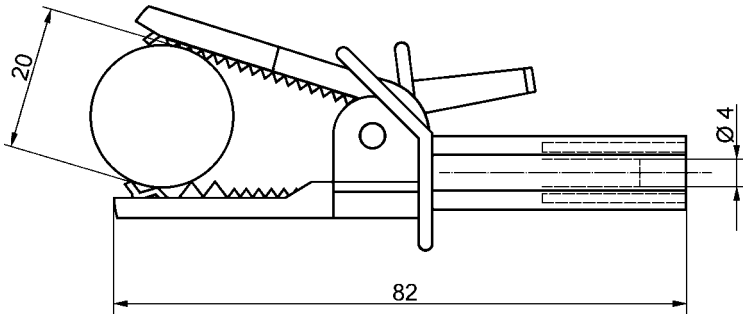
colours: see table





General information			Technical data				
order no.	sleeves for leads	colours	terminal	Transition resistance	Rated voltage	Rated current	operating temperature
SFK 30 S / 1 / ..(colour) contact part nickel-plated	ø 4 mm	black, red, blue, green, yellow	screw up to 1 mm²	3 mΩ	1000 V CAT II	16 A	- 25 °C ... + 90 °C
SFK 30 S / 2,5 / ..(colour) contact part nickel-plated	ø 4 mm		screw up to 2.5 mm²	3 mΩ	1000 V CAT II	32 A	- 25 °C ... + 90 °C

other colours and platings on request

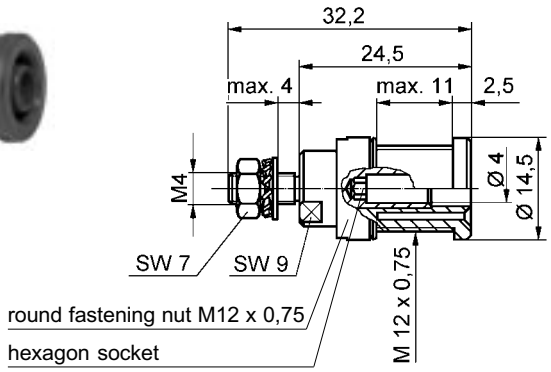


Crocodile clip
- insulated
- socket ø 4 mm

order no. **SAK 2492 / ..** (colour)

- contact part material	**brass**
- contact part	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
- gripping width	ø 20 mm
colours:	see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
SAK 2492 / .. (colour) contact part nickel-plated	black red	socket	< 10 mΩ	600 V CAT III	12 A	- 25 °C ... + 80 °C



Safety threaded socket
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

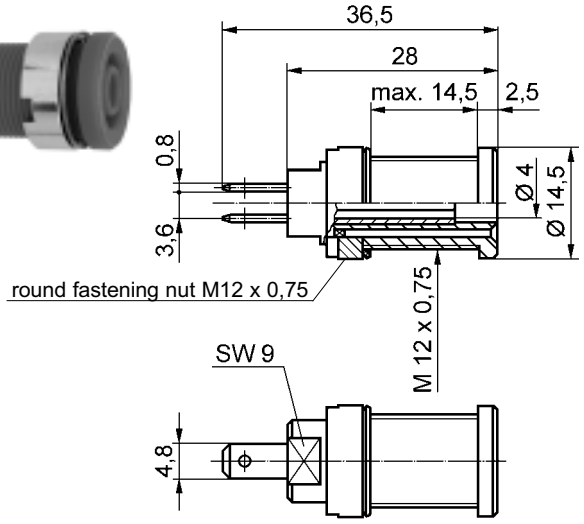
order no. SEB 1987 / ..(colour)
- contact part **nickel-plated**
- thread M4
- insulation PA 6.6 (Polyamid)

order no. SEB 1987 AU / ..(colour)
- as above
- contact part **gold-plated**

colours see table

The hexagon socket has the following advantages:
1. When fitting the socket in a front panel this can be accomplished with an Allen key.
2. The Allen key can be used to counterhold when tightening the socket (no special key necessary).
3. When tightening the M4 nut the Allen key can be used to counterhold it.

Note: All Schützinger safety threaded and press-in sockets can be supplied with a hexagonal socket on request!



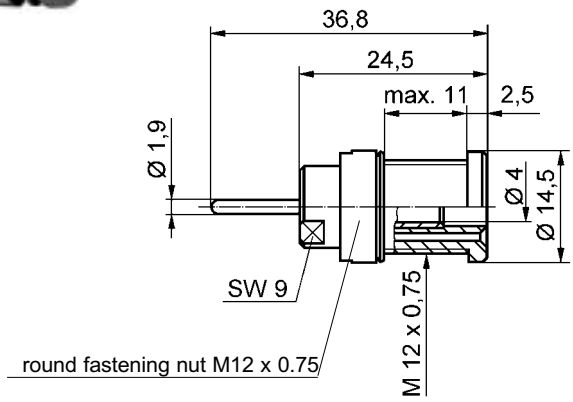
Safety switch socket
- for fitting into panels up to 14,5 mm thick
- round fastening nut M12 x 0,75

order no. SEB 3090 / ..(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours see table

General information			Technical data				
				rated impulse voltage 8kV, 1,2 / 50 µs test voltage 4350 V			
order no.	**max. torque for the fastening nuts**	**colours**	**terminal**	**transition resistance**	**rated voltage**	**rated current**	**operating temperature**
SEB 1987 / ..(colour) contact part nickel-plated **SEB 1987 AU / ..**(colour) contact part gold-plated	100 Ncm 100 Ncm	black, red, blue, green, yellow, green-yellow	M4	5 mΩ	1500 V CAT II	32 A	- 40 °C ... + 80 °C
SEB 3090/ ..(colour) contact part nickel-plated	100 Ncm	black, red, blue, green, yellow, green-yellow	soldering, cable lug	5 mΩ	1500 V CAT II	20 A	- 40 °C ... + 80 °C

other terminals, colours and platings on request

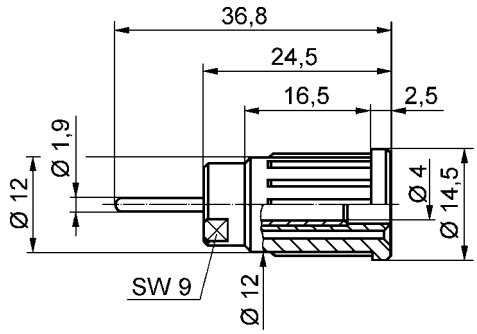


Safety threaded socket
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

order no. SEB 1764 / ..(colour)
- contact part **nickel-plated**
- pin 11.9 x ø 1.9
- insulation PA 6.6 (Polyamid)

order no. SEB 1764 AU / ..(colour)
- as above
- contact part **gold-plated**

colours see table



Safety press in socket
- for pressing into panel,
- with hole ø 12.2 ± 0.1 mm, sunk one side (0.5 x 45°)
- panel thickness
  metal-panels ≥ 1 mm
  plastic-panels ≥ 2 mm

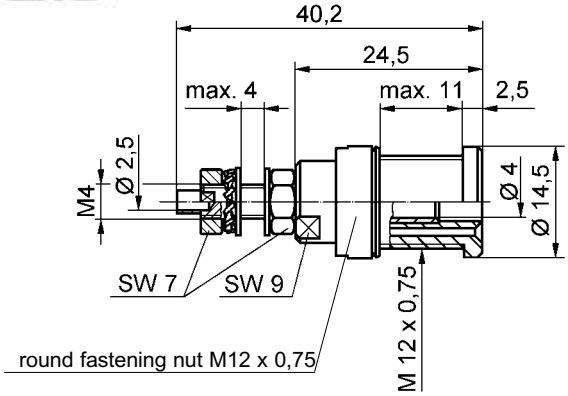
order no. SEPB 1765 / ..(colour)
- contact part **nickel-plated**
- pin 11.9 x ø 1.9
- insulation PA 6.6 (Polyamid)

order no. SEPB 1765 AU / ..(colour)
- as above
- contact part **gold-plated**

colours see table

General information			Technical data				
			rated impulse voltage 8kV, 1,2 / 50 µs test voltage 4350 V				
order no.	**max. torque for the fastening nuts**	**colours**	**terminal**	**transition resistance**	**rated voltage**	**rated current**	**operating temperature**
SEB 1764 / ..(colour) contact part nickel-plated **SEB 1764 AU / ..**(colour) contact part gold-plated	100 Ncm 100 Ncm	black, red, blue, green, yellow, green-yellow	PIN ø 1.9 x 11.9	5 mΩ	1500 V CAT II	24 A	- 40 °C ... + 80 °C
SEPB 1765 / ..(colour) contact part nickel-plated **SEPB 1765 AU / ..**(colour) contact part gold-plated	— —	black, red, blue, green, yellow, green-yellow	PIN ø 1.9 x 11.9	5 mΩ	1500 V CAT II	24 A	- 40 °C ... + 80 °C

other terminals, colours and platings on request

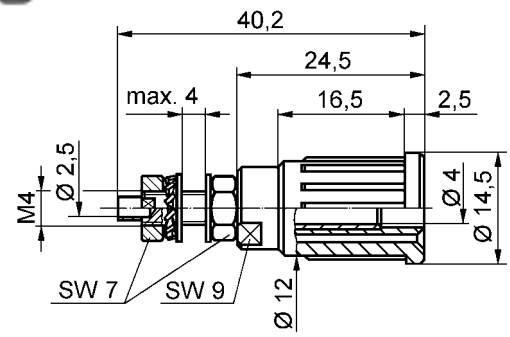


Safety threaded socket
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

order no. SEB 1768 / ..(colour)
- contact part **nickel-plated**
- thread M4
- insulation PA 6.6 (Polyamid)

order no. SEB 1768 AU / ..(colour)
- as above
- contact part **gold-plated**

colour: see table



Safety press-in socket
- for pressing into panel,
- with hole ø 12.2 ± 0.1 mm, sunk on one side (0.5 x 45°)
- panel thickness
  metal-panels ≥ 1 mm
  plastic-panels ≥ 2 mm

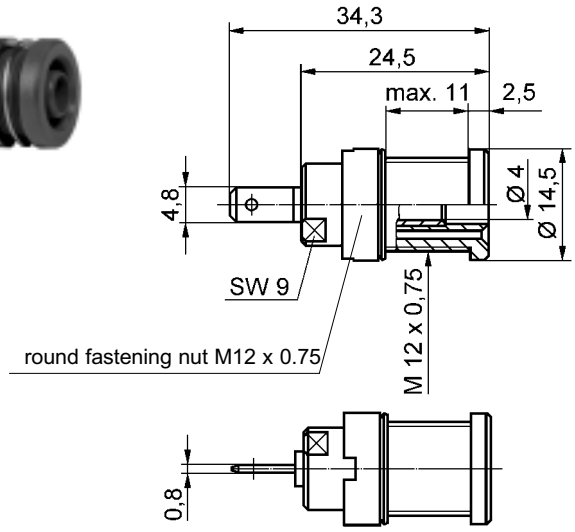
order no. SEPB 1781 / ..(colour)
- contact part **nickel-plated**
- thread M4
- insulation PA 6.6 (Polyamid)

order no. SEPB 1781 AU / ..(colour)
- as above
- contact part **gold-plated**

colour: see table

General information			Technical data				
			rated impulse voltage 8kV, 1,2 / 50 µs test voltage 4350 V				
order no.	**max. torque for the fastening nuts**	**colours**	**terminal**	**transition resistance**	**rated voltage**	**rated current**	**operating temperature**
SEB 1768 / ..(colour) contact part nickel-plated **SEB 1768 AU / ..**(colour) contact part gold-plated	100 Ncm 100 Ncm	black, red, blue, green, yellow, green-yellow	M4	5 mΩ	1500 V CAT II	32 A	- 40 °C ... + 80 °C
SEPB 1781 / ..(colour) contact part nickel-plated **SEPB 1781 AU / ..**(colour) contact part gold-plated	— —	black, red, blue, green, yellow, green-yellow	M4	5 mΩ	1500 V CAT II	32A	- 40 °C ... + 80 °C

other terminals, colours and platings on request

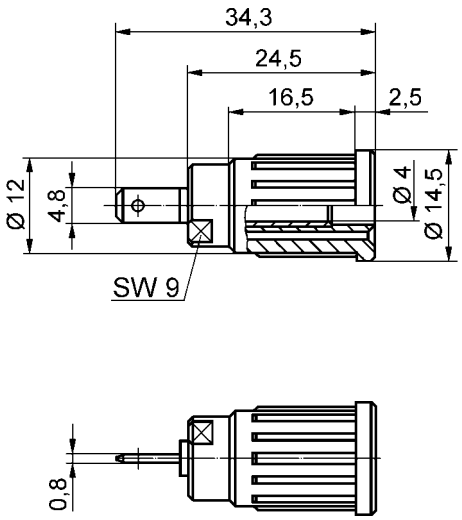


Safety threaded socket
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

order no. **SEB 1772 / ..**(colour)
- contact part **nickel-plated**
- tab 4.8 x 0.8
- insulation PA 6.6 (Polyamid)

order no. **SEB 1772 AU / ..**(colour)
- as above
- contact part **gold-plated**

colours see table



Safety press-in socket
- for pressing into panel,
- with hole ø 12.2 ± 0.1 mm, sunk on one side (0.5 x 45°)
- panel thickness
  metal-panels ≥ 1 mm
  plastic-panels ≥ 2 mm

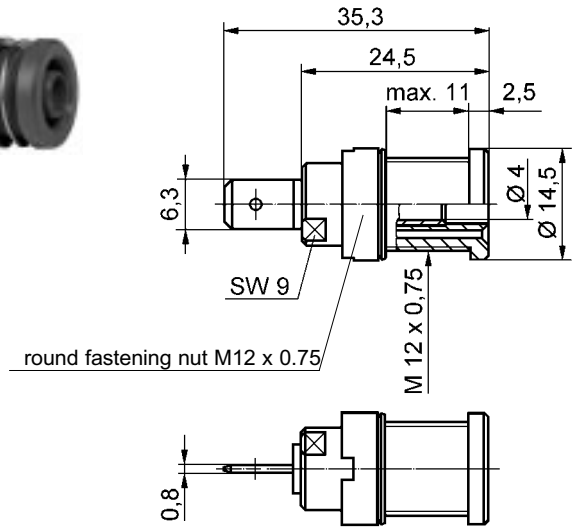
order no. **SEPB 1773 / ..**(colour)
- contact part **nickel-plated**
- tab 4.8 x 0.8
- insulation PA 6.6 (Polyamid)

order no. **SEPB 1773 AU / ..**(colour)
- as above
- contact part **gold-plated**

colours see table

General information			Technical data				
			rated impulse voltage 8kV, 1,2 / 50 µs test voltage 4350 V				
order no.	**max. torque for the fastening nuts**	**colours**	**terminal**	**transition resistance**	**rated voltage**	**rated current**	**operating temperature**
SEB 1772 / ..(colour) contact part nickel-plated **SEB 1772 AU / ..**(colour) contact part gold-plated	100 Ncm 100 Ncm	black, red, blue, green, yellow, green-yellow	FS 4.8 x 0.8	5 mΩ	1500 V CAT II	24 A	- 40 °C ... + 80 °C
SEPB 1773 / ..(colour) contact part nickel-plated **SEPB 1773 AU / ..**(colour) contact part gold-plated	— —	black, red, blue, green, yellow, green-yellow	FS 4.8 x 0.8	5 mΩ	1500 V CAT II	24A	- 40 °C ... + 80 °C

other terminals, colours and platings on request



Safety threaded socket

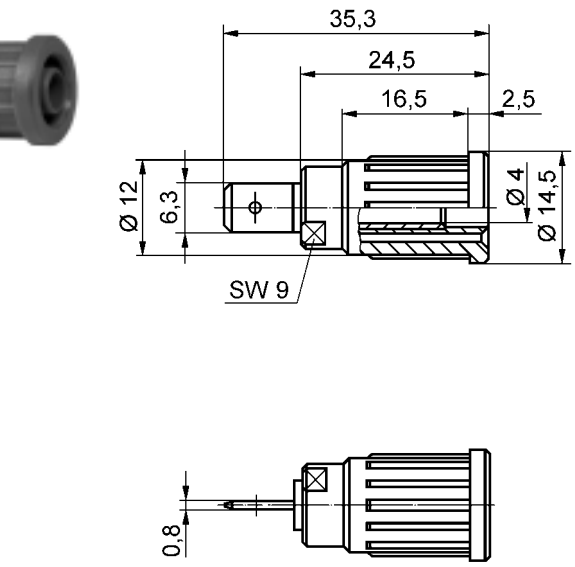
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

order no. **SEB 1776 / ..**(colour)

- contact part	**nickel-plated**
- tab	6.3 x 0.8
- insulation	PA 6.6 (Polyamid)

order no. **SEB 1776 AU / ..**(colour)

- as above	
- contact part	**gold-plated**
colours	see table



Safety press-in socket

- for pressing into panel,
- with hole ø 12.2 ± 0.1 mm, sunk on one side (0.5 x 45°)
- panel thickness

metal-panels	≥ 1 mm
plastic-panels	≥ 2 mm

order no. **SEPB 1777 / ..**(colour)

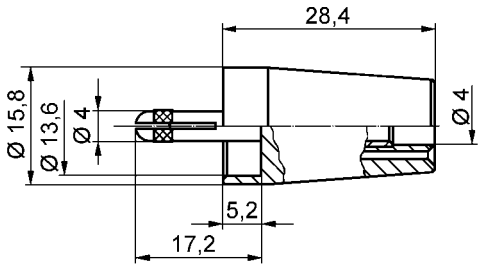
- contact part	**nickel-plated**
- tab	6.3 x 0.8
- insulation	PA 6.6 (Polyamid)

order no. **SEPB 1777 AU / ..**(colour)

- as above	
- contact part	**gold-plated**
colours	see table

General information			Technical data				
			rated impulse voltage 8kV, 1,2 / 50 µs test voltage 4350 V				
order no.	**max. torque for the fastening nuts**	**colours**	**terminal**	**transition resistance**	**rated voltage**	**rated current**	**operating temperature**
SEB 1776 / ..(colour) contact part nickel-plated	100 Ncm	black, red, blue, green, yellow, green-yellow	FS 6.3 x 0.8	5 mΩ	1500 V CAT II	32 A	- 40 °C ... + 80 °C
SEB 1776 AU / ..(colour) contact part gold-plated	100 Ncm						
SEPB 1777 / ..(colour) contact part nicke--plated	—	black, red, blue, green, yellow, green-yellow	FS 6.3 x 0.8	5 mΩ	1500 V CAT II	32 A	- 40 °C ... + 80 °C
SEPB 1777 AU / ..(colour) contact part gold-plated	—						

other terminals, colours and platings on request

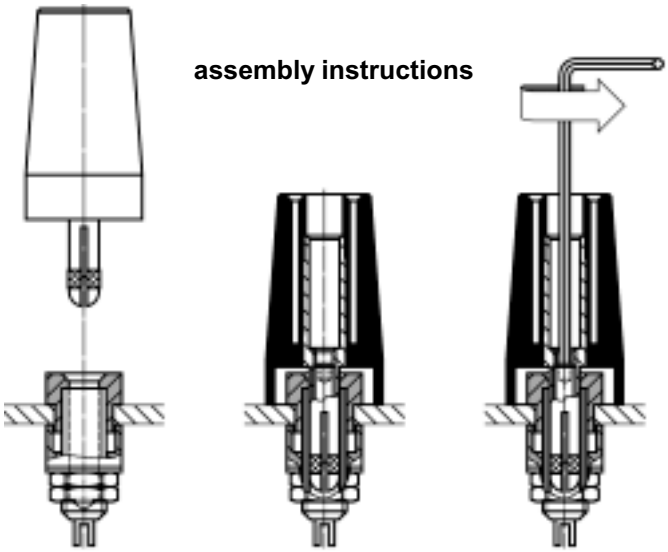


Safety adapter

The safety adapter can be fitted into all ø 4 mm sockets. This ensures compatibility with the safety measuring leads with rigid sleeves. By screwing in a hexagonal socket screw (SW 1.5) into the splay plug, the safety adapter can be tightly connected to the ø 4 mm socket. The safety adapter can no longer be removed afterwards without tools.

order no. **SURB 2112 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



assembly instructions

Please note the technically required left-handed thread of the hexagonal socket screw. In this way the existing socket body cannot be screwed out of its insulating head when tightening the screw!

When installing the safety adapter the 5 safety regulations according to DIN VDE 105, Part 1 are to be heeded. Briefly these are:

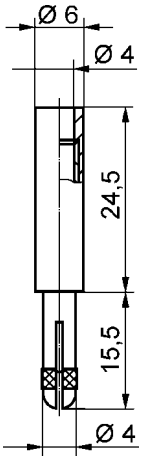
1. Disconnect
2. Secure against restoration of power
3. Establish that voltage is cut off
4. Earthing and short-circuiting
5. Cover or enclose adjacent live parts

The air gaps and creep paths given for the appliances for the installed sockets must also be taken into consideration when using the safety adapter and are possibly decisive for the maximum operating voltage.

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
SURB 2112 / .. (colour) contact parts nickel-plated	black red blue yellow green white	see assembly instructions	5 mΩ	... V*	32 A	- 25 °C ... + 90 °C

*depending on assembly up to 1000 V, CAT II, degree of contamination II

other colours on request

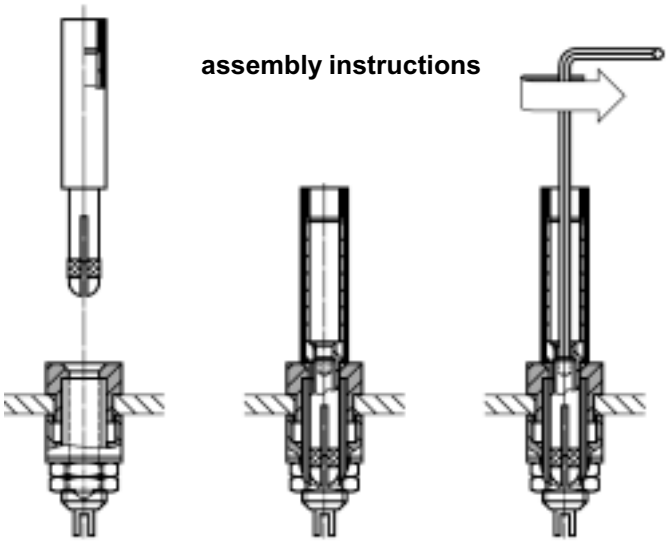


Safety adapter

The safety adapter can be fitted into all ø 4 mm sockets. This ensures compatibility with the safety measuring leads with rigid sleeves. By screwing in a hexagonal socket screw (SW 1.5) into the splay plug, the safety adapter can be tightly connected to the ø 4 mm socket. The safety adapter can no longer be removed afterwards without tools.

order no. **A 2116 / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



assembly instructions

Please note the technically required left-handed thread of the hexagonal socket screw. In this way the existing socket body cannot be screwed out of its insulating head when tightening the screw!

When installing the safety conversion socket the 5 safety regulations according to DIN VDE 105, Part 1 are to be heeded. Briefly these are:

1. Disconnect
2. Secure against restoration of power
3. Establish that voltage is cut off
4. Earthing and short-circuiting
5. Cover or enclose adjacent live parts

The air gaps and creep paths given for the appliances for the installed sockets must also be taken into consideration when using the safety adapter and are possibly decisive for the maximum operating voltage.

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
A 2116 / .. (colour) contact parts nickel-plated	black red blue	see assembly-instructions	5 mΩ	... V*	32 A	- 25 °C ... + 90 °C

*depending on assembly up to 900 V, CAT II, degree of contamination II

other colours on request

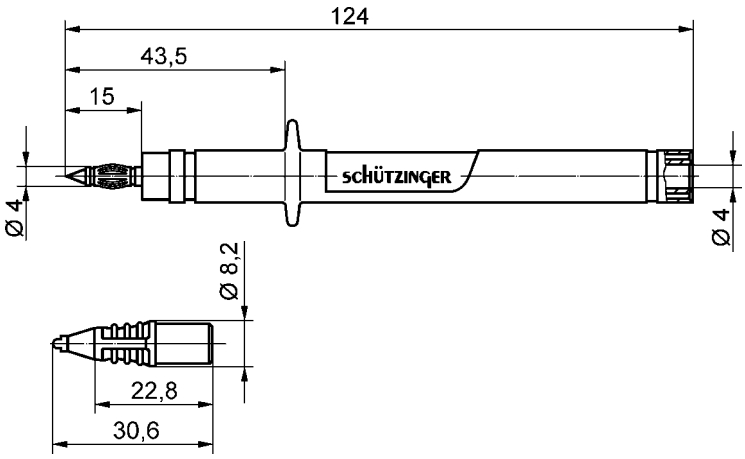
New Test-Probes

INDUSTRIE FORUM DESIGN HANNOVER

The newly developed safety test probe series from Schützinger is convincing not only due its ergonomic design and touchproof protection in the grip area according IEC 1010, but also due to its universal suitability. In addition to conventional versions with the reliable 4 mm lamella basket contact and fine steel test pin, witch are suitable for plugging into ø 4 mm sockets as well as probing, we now also offer versions with interchangeable test probe insets. With these you have a test probe or test lead in hand which offers great variety of measuring possibilities with different insets. The very robust and crush-proof syntetic materials used for the test probeholder as well as the double insulated and highliy flexible lead crimpt at both ends ensure long service life. When worn, the test probe insets can be ordered seperately. This helps save costs in the long run and is an enviromental aspect. The test probes have a low transition resistance as current is transfered via the 4 mm lamella basket.

The tip protection head with integrated IC probe is also used to change the insets.

spring loaded test probe for IC's
2 mm and 2,4 mm lamella basket probes for measuring at terminal blocks



Test probe
- with axial socket
- **the tip protection head SSK 2002 is included**

order no. **SPS 2124 / ..**(colour)

- contact parts	**nickel-plated**
- tip	**steel**
- insulation	PA 6.6 (Polyamid)

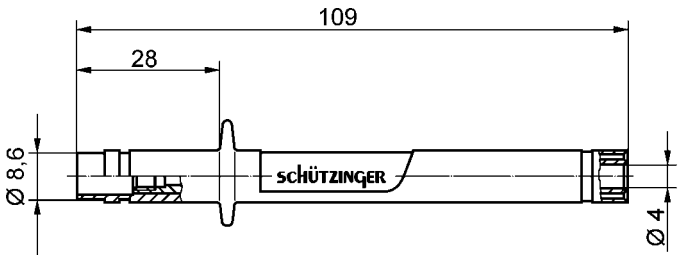
colours: see table

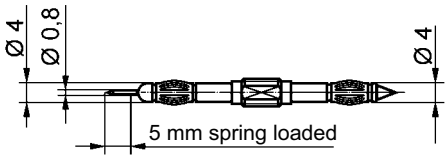
description of accessories

Tip protection head SSK 2002 / .. (colour)

General information			Technical data				
order no.		colours	terminal	transition resistance	rated voltage	rated current	operating temperature
SPS 2124 / ..(colour) contact parts nickel-plated	set	black red	safety socket	20 mΩ	1000 V CAT II	32 A	- 25 °C ... + 90 °C
SSK 2002 / ..(colour)	spare part	black red	— —	— —	— —	— —	- 25 °C ... + 90 °C

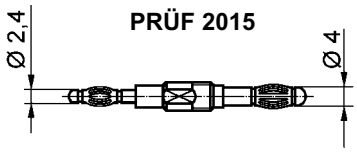
other colours and platings on request



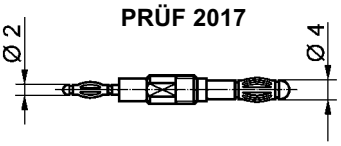


PRÜF 2013

PRÜF 2015



PRÜF 2017



SSK 2002

Test probe set

- with axial socket. It is possible to fit several probe insets into this test probe.
- **the Probe insets PRÜF 2013, PRÜF 2015, PRÜF2017 and the Tip-protection-head SSK 2002 is included in the set!**

order no. **SET 2040 / ..**(colour)

- contact parts	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
colours:	see table

description of accessories

Probe inset PRÜF 2013

- both ends of this inset can be used individualy. One end has a 5 mm spring loaded steel tip, the other end a rigid steel tip with 4 mm lamella-basket

Probe inset PRÜF 2015

- this inset provides a 2.4 mm lamella-basket plug

Probe inset PRÜF 2017

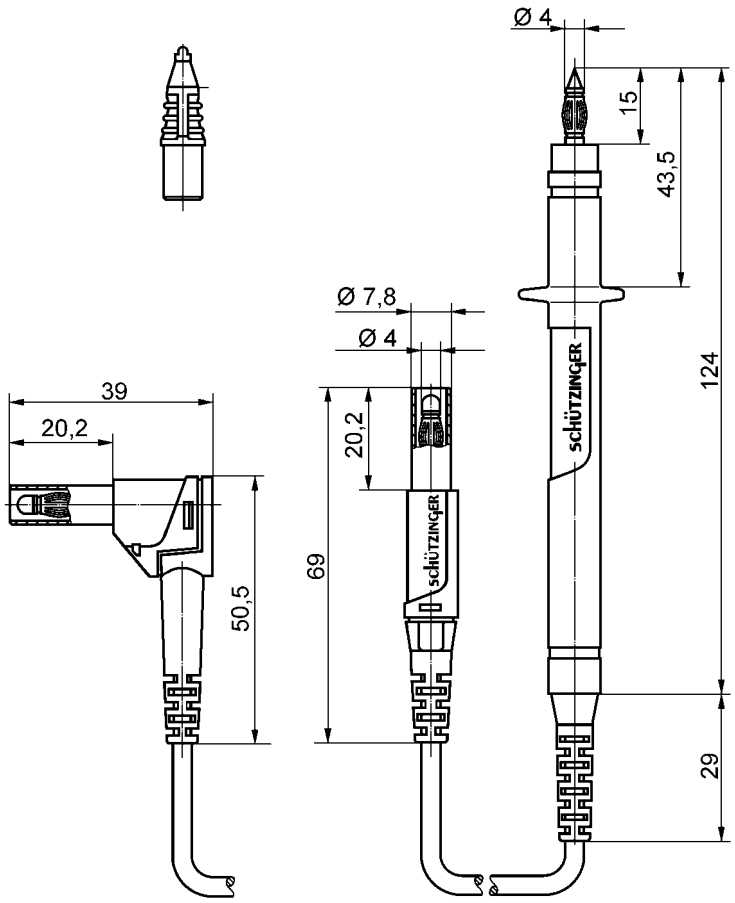
- this inset provides a 2.4 mm lamella-basket plug

Tip protection head SSK 2002 / .. (colour)

- for IC with 2.5 mm raster (DIL)
- it can be used as a tool to screw the insets into the probe

General information			Technical data				
order no.		colours	terminal	transition resistance	rated voltage	rated current	operating temperature (Insulation -25 °C ... + 90 °C)
SET 2040 / .. (colour) contact parts nickel-plated	set	black red	socket	10 mΩ	1000 V CAT II	32 A	- 25 °C ... + 90 °C
PRÜF 2013 contact parts nickel-plated	spare part	—	—	5 mΩ	1000 V CAT II	32 A	- 40 °C ... + 110 °C
PRÜF 2015 contact parts nickel-plated	spare part	—	—	5 mΩ	1000 V CAT II	12 A	- 40 °C ... + 110 °C
PRÜF 2017 contact parts nickel-plated	spare part	—	—	5 mΩ	1000 V CAT II	10 A	- 40 °C ... + 110 °C
SSK 2002 / ..(colour)	spare part	black red	— —	— —	— —	— —	- 25 °C ... + 90 °C

other colours and platings on request



Safety test lead
- 1 test probe and 1safety lamella-basket plug crimped on a highly flexible lead
- **the tip protection head SSK 2002 is included.**

order no. SPL 2126 / 1 / 100 / ..(colour)
- with straight safety-lamella-basket-plug
- lead 1 mm² with tension relief PVC-double-insulated
- contact parts **nickel-plated**
- tip **steel**
- insulation PA 6.6 (Polyamid)

colours: see table

order no. SPL 2127 / 2,5 / 100 / ..(colour)
- as above, but with 2.5 mm² PVC double-insulated lead

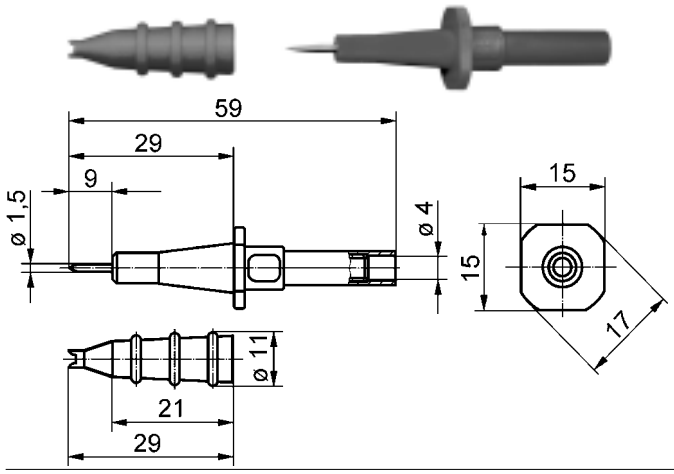
order no. SPL 2128 / 2,5 / 100 / ..(colour)
- as SPL 2127 / 2,5 / 100 / ..(colour), but with rightangle safety lamella-basket plug

description of accessories

Tip protection head SSK 2002 / .. (colour)

General information			Technical data				
order no.	lengths	colours	lead	transition resistance	rated voltage	rated current	operating temperature (Insulation PVC-leads -25 °C ... + 90 °C, -10 °C ... + 80 °C)
SPL 2126 / 1 / ..(length) / **..**(colour) contact parts nickel-plated **straight safety lamella-basket plug**	100 cm	black red	PVC-insul. 1 mm²	20 mΩ	1000 V CAT II	16 A	- 10 °C ... + 80 °C
SPL 2126 / 2,5 / ..(length) / **..**(colour) contact parts nickel-plated **straight safety lamella-basket plug**	100 cm	black red	PVC-insul. 2.5 mm²	20 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C
SPL 2127 / 2,5 / ..(length) / **..**(colour) contact parts nickel-plated **rightangle safety lamella-basket plug**	100 cm	black red	PVC-insul. 2.5 mm²	20 mΩ	1000 V CAT II	32 A	- 10 °C ... + 80 °C
SSK 2002 / ..(colour) spare part	— —	black red	— —	— —	— —	— —	- 25 °C ... + 90 °C

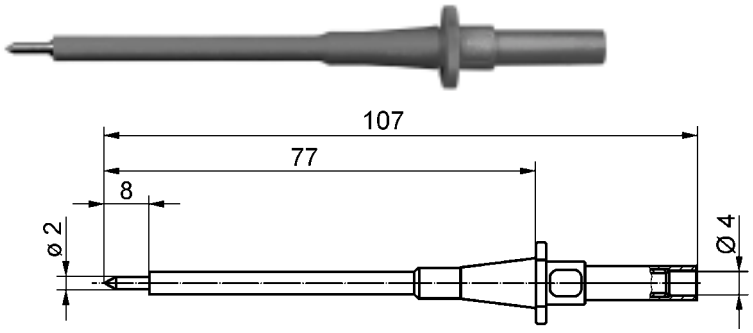
other lengths, colours and platings on request



Test probe
- with axial socket
- the tip protection head is included

order no. **SPS 2590 / ..**(colour)

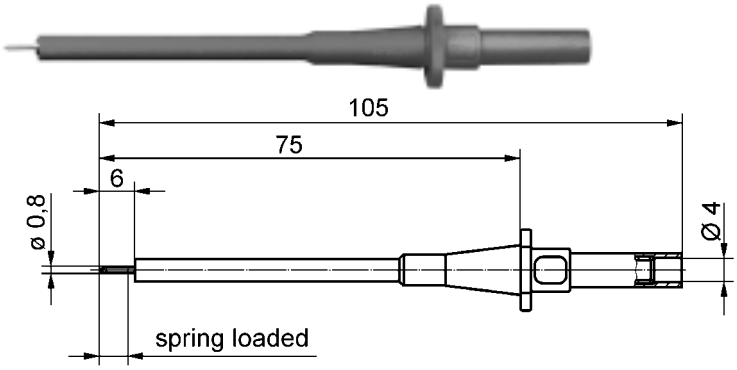
- contact parts	**nickel-plated**
- tip	**steel**
- insulation	PA 6.6 (Polyamid)
colours:	see table



Test probe
- with axial socket
- the tip protection head is included

order no. **SPS 2700 / ..**(colour)

- contact parts	**nickel-plated**
- tip	**brass**
- insulation	PA 6.6 (Polyamid) and shrinking tube
colours:	see table

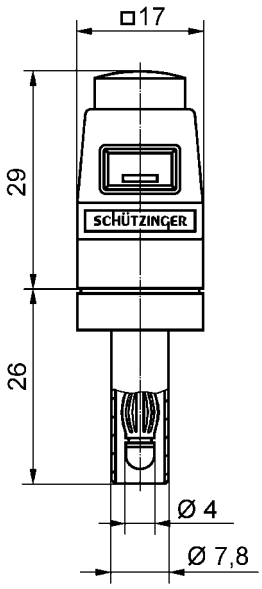


Test probe
- with axial socket, the tip protection head is included

order no. **SPS 2710 / ..**(colour)

- contact parts	**nickel-plated**
- tip	**steel spring loaded**
- insulation	PA 6.6 (Polyamid) and shrinking tube
colours:	see table

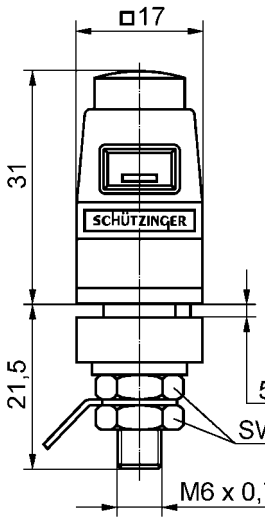
General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
SPS 2590 / ..(colour) contact parts nickel-plated	black red	safety socket	20 mΩ	1000 V CAT III		- 25 °C ... + 90 °C
SPS 2700 / ..(colour) contact parts nickel-plated	black red	safety socket	20 mΩ	1000 V CAT III		- 25 °C ... + 90 °C
SPS 2710 / ..(colour) contact parts nickel-plated	black red	safety socket	20 mΩ	1000 V CAT III		- 25 °C ... + 90 °C



Safety quick-release terminal
- to plug into a ø 4 mm Safety socket

order no. **SDK 799 / ..** (colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

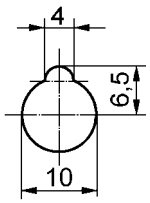


Safety quick-release terminal
- fully insulated for matal panels

order no. **SDK 800 / ..** (colours)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)
- panel thickness 0.8 mm - 5 mm

colours: see table

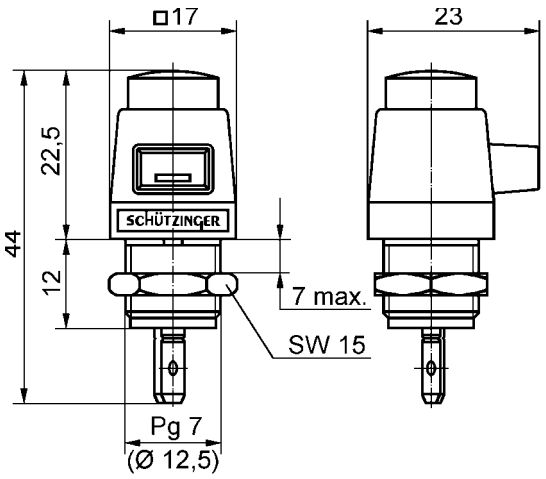
hole



General information			Technical data				
order no.	max. torque for the nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
SDK 799 / ..(colour) contact parts nickel-plated	—	black red	socket	< 3 mΩ	300 V CAT II	16 A	- 25 °C ... + 90 °C
SDK 801 / ..(colour) contact parts nickel-plated	120 Ncm	black red	soldering loop or cable lug	< 3 mΩ	300 V CAT II	16 A	- 25 °C ... + 90 °C

other colours and springs on request

SCHÜTZINGER
Labor - Schütz GmbH



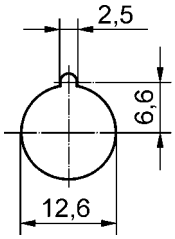
Safety quick-release terminal
- fully insulated

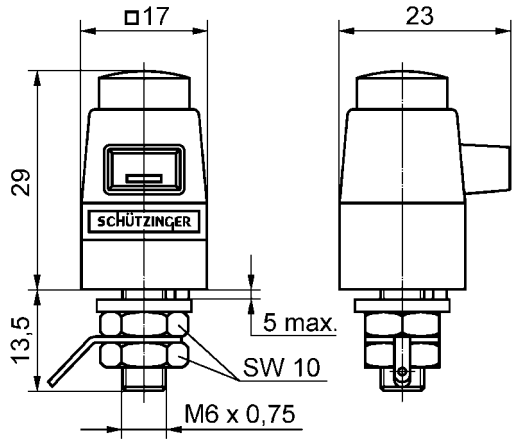
order no. **ESD 798 / ..** (colour)

- contact parts	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
- panel thickness	0.8 mm - 7 mm

colours: see table

hole





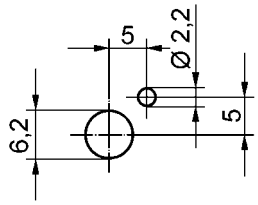
Safety quick-release terminal
fitting not insulated

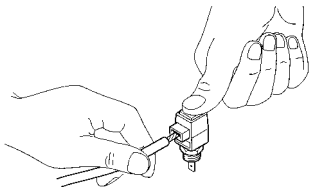
order no. **SDK 801 / ..** (colour)

- contact parts	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
- panel thickness	0.8 mm - 5 mm

colours: see table

hole

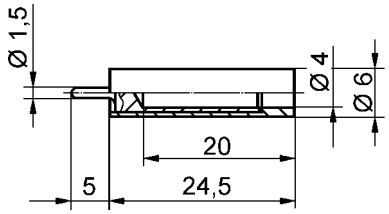




Functional description:
Wires and strands are connected between the spring jaws by pressing on the head of the terminal post.
Every quick-release terminal has an insertion window.
The window size is approx. 8 mm x 4 mm. A strong compression spring guarantees good contact. The pressure of the compression spring amounts to approx. 19 N. The quick-release terminals are particulary suitable for quick connection and testing of series appliances.

General information			Technical data				
order no.	max. torque for the nuts	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
ESD 798 / ..(colour) contact parts nickel-plated	85 Ncm	black red	FSH 2,8x0,5 or soldering	< 3 mΩ	300 V CAT II	16 A	- 25 °C ... + 90 °C
SDK 801 / ..(colour) contact parts nickel-plated	120 Ncm	black red	soldering loop or cable lug	< 3 mΩ	300 V CAT II	16 A	- 25 °C ... + 90 °C

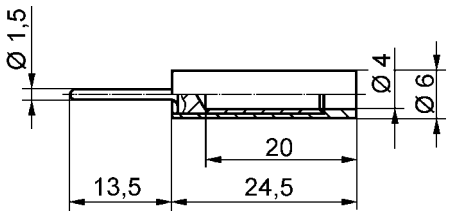
other colours and springs on request



Laboratory socket
- suitable to install a permanent measuring point with a socket. For that the pin is screwed under. Pin length 5 mm.

order no. **LB 4-1,5 S / 5 / ..**(colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

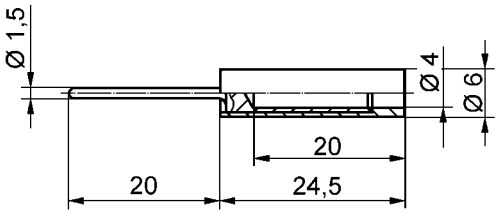
colours: see table



Laboratory socket
- as above, but pin length 13,5 mm

order no. **LB 4-1,5 S / 13,5 / ..**(colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



Laboratory socket
- as above, but pin length 20 mm

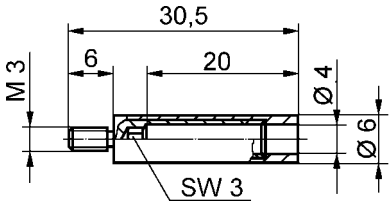
order no. **LB 4-1,5 S / 20 / ..**(colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
LB 4-1,5 S / 5 / .. (colour) contact parts nickel-plated	black red blue	pin	<10 mΩ	... V*	18 A	- 25 °C ... + 90 °C
LB 4-1,5 S / 13,5 / .. (colour) contact parts nickel-plated			<10 mΩ	... V*	18 A	- 25 °C ... + 90 °C
LB 4-1,5 S / 20 / .. (colour) contact parts nickel-plated			<10 mΩ	... V*	18 A	- 25 °C ... + 90 °C

* depending on assembly up to 900 V, CAT II, degree of contamination II

other colours and platings on request

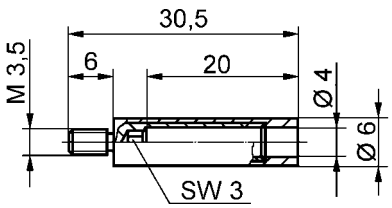


Socket

- **to facilitate assembly there is a hexagon at the bottom of the socket for a 3 mm Allen key. The Allen key can be used to counterhold when tightening the socket.**
- safety plugs with rigid sleeve can be used .

order no. BU 2240 S / .. (colour)

- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
colours:	see table

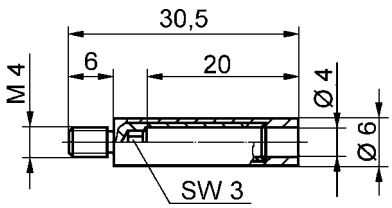


Socket

- **to facilitate assembly there is a hexagon at the bottom of the socket for a 3 mm Allen key. The Allen key can be used to counterhold when tightening the socket.**
- safety plugs with rigid sleeve can be used .

order no. BU 2242 S / .. (colour)

- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
colours:	see table



Socket

- **to facilitate assembly there is a hexagon at the bottom of the socket for a 3 mm Allen key. The Allen key can be used to counterhold when tightening the socket.**
- safety plugs with rigid sleeve can be used .

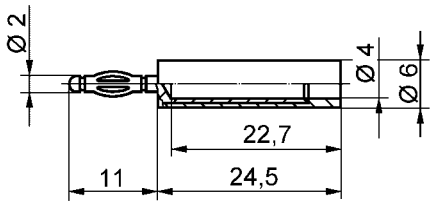
order no. BU 2244 S / .. (colour)

- contact part material	brass
- contact part	**nickel-plated**
- insulation	PA 6.6 (Polyamid)
colours:	see table

General information			Technical data				
order no.	max. torque	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
BU 2240 S / .. (colour) contact part nickel-plated	80 Ncm	M3 x 6	black red blue	<10 mΩ	30 V_{AC} * 60 V_{DC}*	32 A	- 25 °C ... + 90 °C
BU 2242 S / .. (colour) contact part nickel-plated	85 Ncm	M3,5 x 6		<10 mΩ	30 V_{AC}* 60 V_{DC}*	32 A	- 25 °C ... + 90 °C
BU 2244 S / .. (colour) contact part nickel-plated	100 Ncm	M4 x 6		<10 mΩ	30 V_{AC}* 60 V_{DC}*	32 A	- 25 °C ... + 90 °C

* depending on assembly up to 900 V, CAT II, degree of contamination II

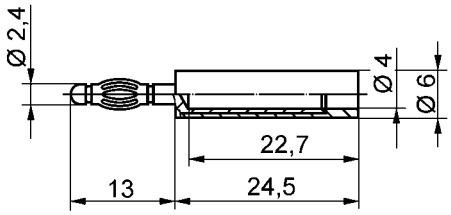
other colours and platings on request



Adapter
- for conecting ø 2 mm - system to ø 4 mm safety - system

order no. **A 20 - 40 S / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

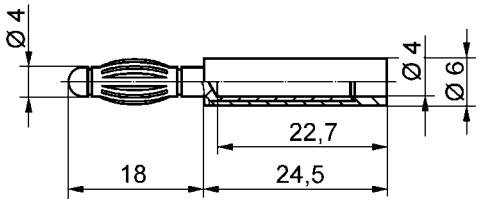
colours: see table



Adapter
- for connecting ø 2.4 mm - system to ø 4 mm safety - system

order no. **A 24 - 40 S / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table



Adapter
- for connecting ø 4 mm system to ø 4 mm safety - system

order no. **A 40 - 40 S / ..**(colour)
- contact part **nickel-plated**
- insulation PA 6.6 (Polyamid)

colours: see table

General information		Technical data				
order no.	colours	terminal	transition resistance	rated voltage	rated current	operating temperature
A 40 - 20 / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 40 - 24 / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C
A 40 - 40 S / .. (colour) contact parts nickel-plated	black red	socket	6 mΩ	30 V_{AC} 60 V_{DC}	10 A	- 25 °C ... + 90 °C

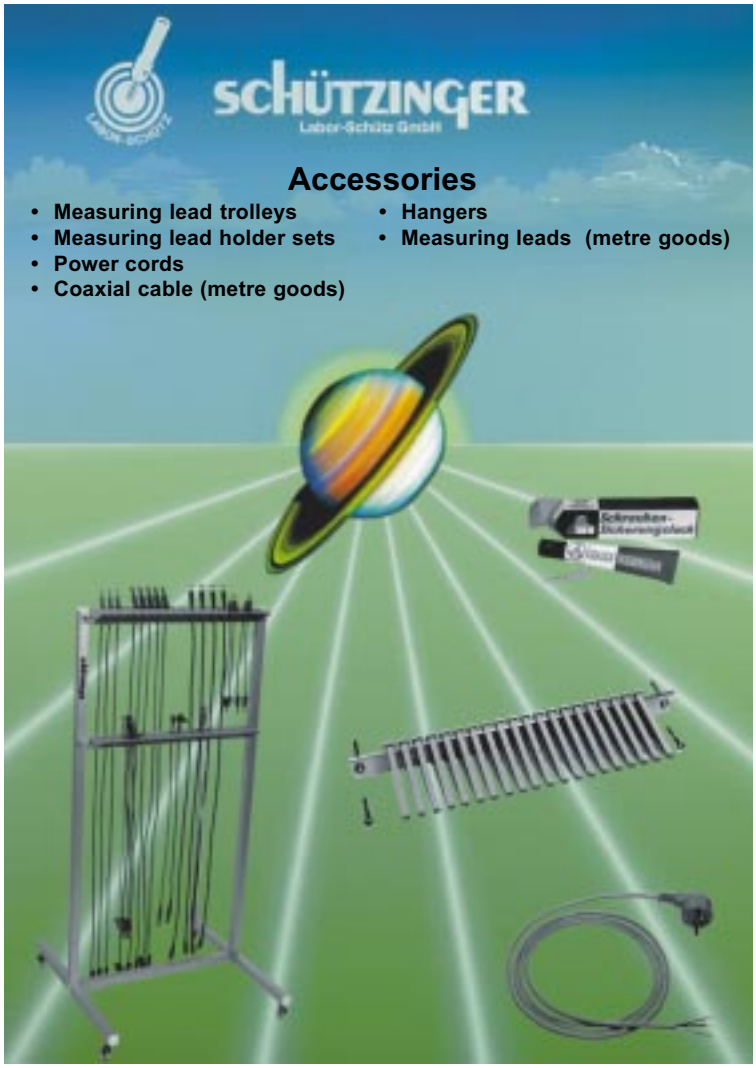
other colours and platings on request

Main characteristics and advantages

Wide range, universal application

Measuring lead holder: Different types for simple installation on our aluminium rails.
Measuring lead holder sets:
Types with aluminium rails 15 cm and 25 cm with measuring lead holder for 4 mm or 2 mm diameter measuring leads.
Measuring lead trolleys:
4 types of measurement lead trolley are available. 50 cm wide and 105 cm or 140 cm overall height, for assembly out of aluminium rectangular section tube with push-on corner connections and castors.
Cable holders: One type with two holding levels which can be mounted together or separately. A further type with 3 holding levels in one.
Double hangers: Sturdy design with high load capacity to be fixed on the wall.
Power cords: Various leads with injection-moulded shockproof plug, connection end of the lead stripped and strands fitted with end sleeves.

Important note
All shockproof leads and leads for cold appliances comply with the relevant standards and are marked with the test mark of the appropriate approval authorities.



Coaxial cable (metre goods):
You will find coaxial cable from RG 58 to RG 179 in our range. We offer these in 100 m rings or on cable drums.

Measuring lead (metre goods):
Our range includes highly flexible single-insulated or double-insulated measuring leads in 100 m rings or on cable drums with lead cross-sections from 0.5 mm^2 to 6 mm^2.

Reference to ready assembled leads from our range

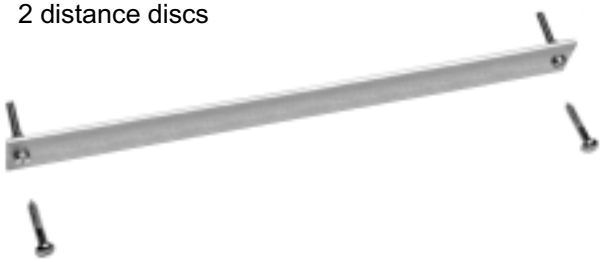
leads with **ø 2 mm** plug ..... **page 14**
leads with **ø 4 mm** plug ..... **page 18**
leads with **ø 4 mm** safety plug ..... **page 49**

We assemble coaxial leads and unshielded leads with connectors according to your requirements. Send us your enquiry.

If you have any queries regarding application possibilities, technical data or special designs we will gladly advise you.

complete with

2 screws M4 x 25 with nuts,
2 screws for wood 4 x 25 and
2 distance discs



Aluminium section
- as support for plastic hooks MH 2000 or MH 4000

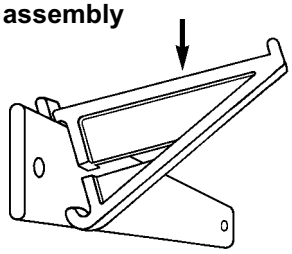
order no. HS 15
- to take 9 plastic hooks MH 4000
  or 12 plastic hooks MH 2000
- section length 15 cm

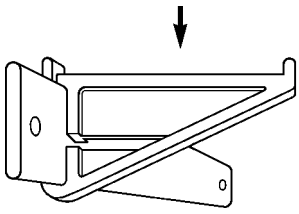
order no. HS 25
- to take 20 plastic hooks MH 4000
  or 28 plastic hooks MH 2000
- section length 25 cm

order no. HS 50
- to take 45 plastic hooks MH 4000
  or 63 plastic hooks MH 2000
- section length 50 cm

order no. HS 100
- to take 95 plastic hooks MH 4000
  or 133 plastic hooks MH 2000
- section length 100 cm

assembly



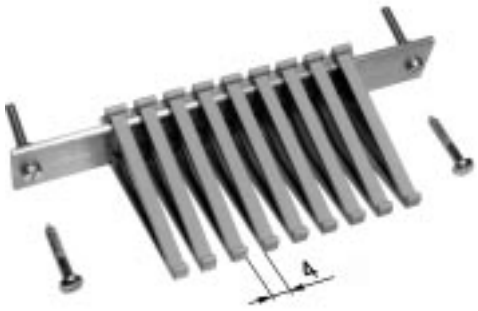


Plastic hook
- for storage of measuring leads
- fits aluminium sections HS 15 to HS 100
- 2 typs to choose:
  MH 4000 - MH 4000 cable space 5 mm
  MH 2000 - MH 2000 cable space 2.2 mm

order no. MH 4000
- for ø 4 mm measuring leads

order no. MH 2000
- for ø 2 mm measuring leads

General information	Technical data				
order no.	section length	section material	hook material	lead space MH 4000	lead space MH 2000
HS 15	15 cm	aluminium	—	—	—
HS 25	25 cm	aluminium	—	—	—
HS 50	50 cm	aluminium	—	—	—
HS 100	100 cm	aluminium	—	—	—
MH 4000	—	—	ABS	5 mm	—
MH 2000	—	—	ABS	—	2,2 mm



Lead-holder set
- as set including aluminium section HS 15 and 9 plastic hooks MH 4000 for storage of ø 4 mm measuring leads.

order no. MHS 4015

- section length	15 cm
- plastic hooks	9

Lead-holder set
- as set including aluminium section HS 25 and 20 plastic hooks MH 4000 for storage of ø 4 mm measuring leads.

order no. MHS 4025

- section length	25 cm
- plastic hooks	20

General information		Technical data						
order no.		section length	section material	number of sections with MH ...	hook material	lead space MH 4015 - MH 4025	lead space MH 2015 - MH 2025
MHS 4015		15 cm	aluminium	9	ABS	5 mm	—
MHS 4025		25 cm	aluminium	20	ABS	5 mm	—
MHS 2015	**on request**	15 cm	aluminium	12	ABS	—	2,2 mm
MHS 2025	**on request**	25 cm	aluminium	28	ABS	—	2,2 mm

Measuring lead trolley
- for assembly out of aluminium rectangular section tube with push-on corner connections and castors

order no. MHW 4050-105
- 3 HS 50 with 45 plastic hooks MH 4000 for ø 4 mm measuring leads

- trolley width 50 cm
- trolley height 105 cm

order no. MHW 4050-140
- 3 HS 50 with 45 plastic hooks MH 4000 for ø 4 mm measuring leads

- trolley width 50 cm
- trolley height 140 cm

On request:

order no. MHW 4250-105
- 2 HS 50 with 45 plastic hooks MH 4000 for ø 4 mm measuring leads
  1 HS 50 with 63 plastic hooks MH 2000 for ø 2 mm measuring leads

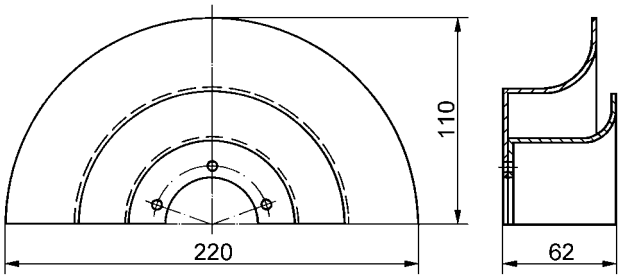
- trolley width 50 cm
- trolley height 105 cm

order no. MHW 4250-140
- 2 HS 50 with 45 plastic hooks MH 4000 for ø 4 mm measuring leads
  1 HS 50 with 63 plastic hooks MH 2000 for ø 2 mm measuring leads

- trolley width 50 cm
- trolley height 140 cm

description of the platic hooks MH .... on page 72

General information	Technical data				
order no.	trolley width	trolley hight	number of sections with MH	number of MH 4000	number of MH 2000
MHW 4050-105	50 cm	105 cm	3	135	—
MHW 4050-140	50 cm	140 cm	3	135	—
MHW 4250-105 on request	50 cm	105 cm	3	90	45
MHW 4250-140 on request	50 cm	140 cm	3	90	45



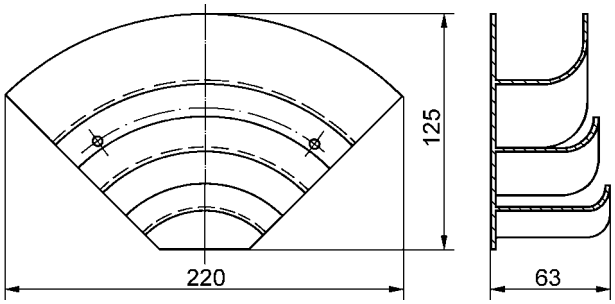
Hanger
- sturdy design with high load capacity to be fixed on the wall

order no. KT 9021
- with 2 sections. Each section can be fixed on the wall seperately

- diameter	220 mm
- hight	110 mm
- depth	65 mm

complete with

3 screws 4 x 25 and wall plugs



order no. KT 9022
- as above, but with 3 levels in one part

- diameter	220 mm
- hight	125 mm
- depth	50 mm

complete with

2 screws 4 x 25 and wall plugs

General information	Technical data					
order no.	diameter	hight	depth	number of levels	material	colour
KT 9021	220 mm	110 mm	62 mm	2	PS	white
KT 9022	220 mm	125 mm	63 mm	3	PS	white

Double hanger
- sturdy design with high load capacity
- fits clamp rail MS 1100

order no. DH 1112
- assembly panel with and squar-nut and 2 poles, iron plastic coated

- length of the hooks 165 mm
- 28 x 28 mm

Clamp rail
- the double hangers DH 1112 can be positioned.
- the sturdy design

order no. MS 1100

- material aluminium
- rail length 100 cm

General information	Technical data					
order no.	length of the rail	hight of the rail	material of the rail	length of the hook	material of the hook	assembly panel
DH 1112	—	—	—	165 mm	iron plastic-coated	28 x 28 mm
MS 1100	100 cm	22 mm	aluminium	—	—	—

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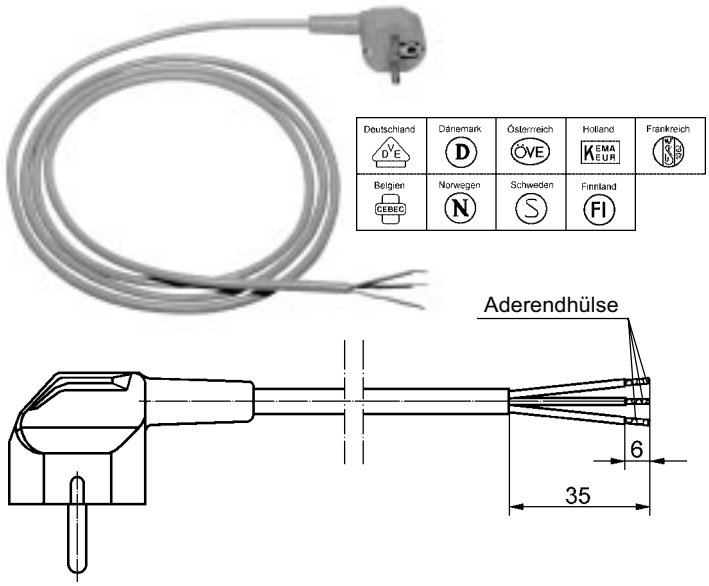


Power cord
- 1. end with moulded PVC protection-contact angle-plug according to DIN 49441, CEE 7/VII, 10-16 A 250V.
- 2. end 35 mm striped, 6 mm bare and end-sleeve assembled.

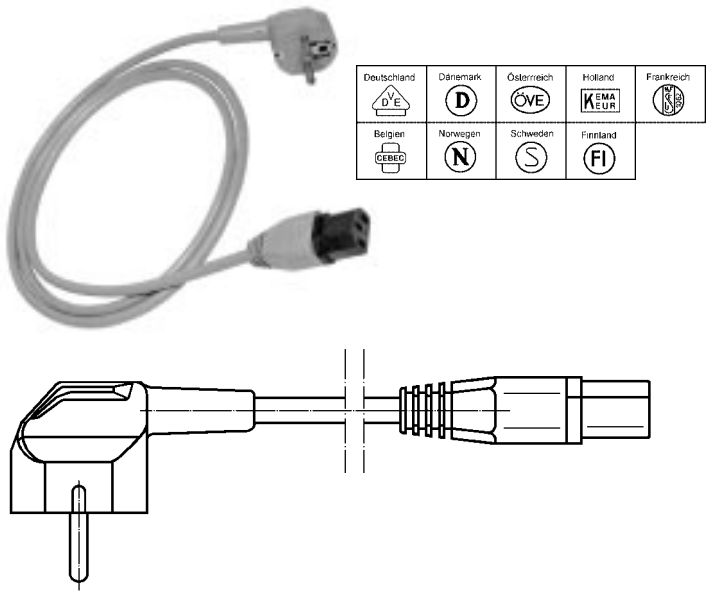
order no. SZL 428

- cable typ	H03VV-F 3G0,75
- lead length	2 m
colour:	grey

order no. SZL 428.7

- as above, but

colour:	black



Power cord
- 1. end with moulded PVC protection-contact angle-plug according to DIN 49441, CEE 7/VII, 10-16 A 250V.
- 2. end with straight connector for cold applications according to IEC 320 / C13

order no. KZL 428.5

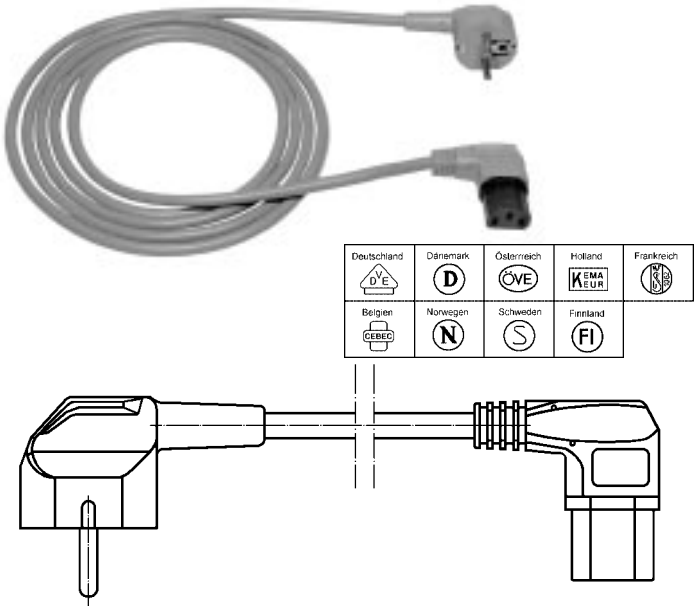
- cable typ	H05VV-F 3G0,75
- lead length	1,5 m
colour:	grey

order no. KZL 1155

- cable typ	H05VV-F 3G1
- lead length	2,5 m

General information			Technical data						
order no.	colour	protection-contact angle-plug	length	current / voltage	cable-typ	bare 2. end	strip 2. end	end sleeve for strands	connector for cold applications
SZL 428	grey	yes	2 m	6 A / 250 V	H03VV-F 3G0,75	35 mm	6 mm	ja	—
SZL 428.7	black	yes	2 m	6 A / 250 V	H03VV-F 3G0,75	35 mm	6 mm	ja	—
KZL 428.5	grey	yes	1.5 m	6 A / 250 V	H03VV-F 3G0,75	—	—	—	ja
KZL 1155	grey	yes	2.5 m	10 A / 250 V	H05VV-F 3G1	—	—	—	ja

other lengths and types on request



power cord

- 1. end with moulded PVC protection-contact angle-plug according to DIN 49441, CEE 7/VII, 10-16 A 250V.
- 2. end with angle connector for cold applications according to IEC 320 / C13

order no. KZL 1154

- cable type	H05VV-F 3G1
- cable length	2.5 m
colour:	grey

General information			Technical data						
order no.	colour	protection-contact angle-plug	length	current / voltage	cable-typ	bare 2. end	strip 2. end	end sleeve for strands	connector for cold applications
KZL 1154	grey	yes	2.5 m	10 A / 250 V	H05VV-F 3G1	—	—	—	ja

other types, colours and lengths on request

PVC-insulated wires

special features highly flexibel, single or double insulated wires (see table).
fine copper stranded wire according to DIN 1787

insolation PVC-spezial compound, **cadmium-free**, 65 Shore A

elongation at break 320 ± 30 according DIN 53 455 / 23 °C

tensile strenght 16 N / mm² according DIN 53 504 / 23 °C

temperature - 10 °C up to + 80 °C

enviromental-conditions good UV- and Ozon resistance, depending on colour

typical applications measuring leads in elektrotechnical laboratories, school laboratoies.

packaging units **100 m rings or**
from 1000 m on request on cable drums.

order no.	colours	square-section	strands	Cu-no.	insulation	insulation thickness	insulation diameter	working voltage	test voltage	current
		mm²	no. x ø	kg / km		ca. mm	ca. mm	V	V AC	A
LTG 0,5 / ..(colour)	black, red, blue, yellow, green,	**0.5**	256 x 0.05	5.5	PVC-single	0.65	2.0 ± 0.1	600	2500	12
LTG 1,0 / ..(colour)	black, red, blue, yellow, green, green-yellow	**1.0**	258 x 0.07	9.6	PVC-double	1.20	3.95 ± 0.15	1500	10000	18
LTG 1,5 / ..(colour)	black, red	**1,5**	392 x 0.07	15	PVC-double	1.00	3.8 ± 0.15	1500	10000	21
LTG 2,5 / ..(colour)	black, red, blue, yellow, green, gnye	**2,5**	651 x 0.07	25	PVC-double	1.00	3.95 ± 0.15	1500	10000	32
LTG 4 / ..(colour)	black, gnye	**4**	1050 x 0.07	39.6	PVC-double	0.9	5.1 ± 0.2	500	5000	40
LTG 6 / ..(colour)	black, gnye	**6**	1575 x 0.07	62.5	PVC-double	0,7	5.4 ± 0.2	500	5000	55
on request										
SIL 1,0 / .. (colour)	black, red	1.0	256 x 0.07	9.6	silicon-reinforced	1.20	3.95 ± 0.15	1500	10000	18

RG-coaxial cabel according to US-specification

MIL-C-17E
RG / U

The RF cables specified in this catalogue are manufactured according German standards, for example DIN 47 269, international standards, for example RG cables to MIL-C-17F, and in compliance with customer´s individual specifications.

Construction

Insulation / dielectric
The insulation of the RF-cables consists of PE (polyethylene) or Teflon due to the good dielectric characteristics of these materials.

Outer conductor
Braided, plain, tinned or silver plated copper wires, proportioned to ensure an optimum screening effect are used.

Inner conductor
Electrolytic copper, plain, tinned or silver-plated as a solid or stranded conductor is used. A copper clad steel conductor is used for applications requering greater stability.

Sheath
For sheathing the cables PVC and PUR are most frequently used.

Mechanical characteristics
The RF cables show a good good flexibility

Working temperature for cables with

PVC-sheath	**- 10 upto + 80 ° C**
PE-sheath	**- 40 upto + 80 ° C**
PTFE-sheath	**- 55 upto + 250 ° C**

The following table shows or range of coaxial-cable according to US-American military-specifications MIL-C-17E

order no.	RG-Typ according MIL-C-17	impe-dance	capa-citance	attenuation at 200 Mhz	inner-conductor	insulation	screen	outer-insulation	Cu-no.	weight
		Ω	Pf / m	dB / 100m	material ca. ø mm	material ca. ø mm	material	material ca. ø mm	kg / km	kg / km
RG 58 C/U	RG 58 C/U	50 ± 2	100	23	tinned copper 19 x0.18	PE-hohl 2.95	braiding tinned copper	PVC 4.95	18	52
RG 59 B/U	RG 59 B/U	75 ± 3	67	16,5	bare copper-clad steel 1 x 0.6	PE 3.7	braiding tinned copper	PVC 6.2	26	57
RG 62 A/U	RG 62 A/U	93 ± 5	42,5	15,0	bare copper-clad steel 1 x 0.65	PE-hohl 3.7	braiding bare coppe	PVC 6.15	24	52
RG 174 B/U	RG 174 B/U	50 ± 2	101	45,0	bare copper-clad steel 7 X 0.16	PE 1.52	braiding tinned copper	PVC 2.8	7	11
RG 179 B/U	RG 179 B/U	75 ± 3	63	41,0	silver plated copper 7 X 0.10	PTFE 1.60	braiding silver copper	PVC 2.54	7,3	16.5

Index

Order

SCHÜTZINGER
Labor - Schütz GmbH

Please fax this orderform to:

SCHÜTZINGER
Labor - Schütz GmbH

Eichwiesenring 6

70567 Stuttgart
Germany

Fax-No.: +711/7 15 46 40

Company: |

Street: |

City: |

Country: |

Telefon: ( )

Telefax: ( )

Deliver to: ☐ see above
☐ as follows:

Company: |

Street: |

City: |

Purchase-No.:

Date: **Signature**

Qty.	Desciption	Order-No.	Price

Deliver in: Week:

Part shipment: allowed ☐
not allowed ☐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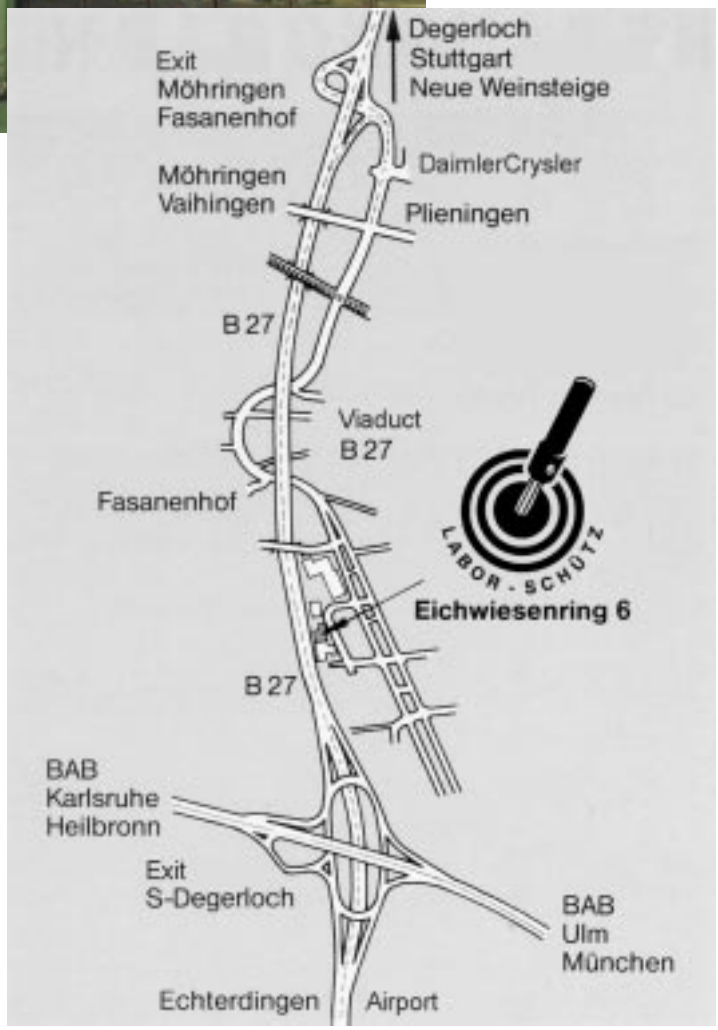
Degerloch
Stuttgart
Neue Weinsteige
Exit
Möhringen
Fasanenhof
DaimlerCrysler
Möhringen
Vaihingen
Plieningen
B 27
Viaduct
B 27
Fasanenhof
LABOR - SCHÜTZ
Eichwiesenring 6
B 27
BAB
Karlsruhe
Heilbronn
Exit
S-Degerloch
BAB
Ulm
München
Echterdingen
Airport

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