SCHÜTZINGER

# Electrical Connectors for test and measurement

## Ø 4mm Safety Programme

2012-S-304B


## 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

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## 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.

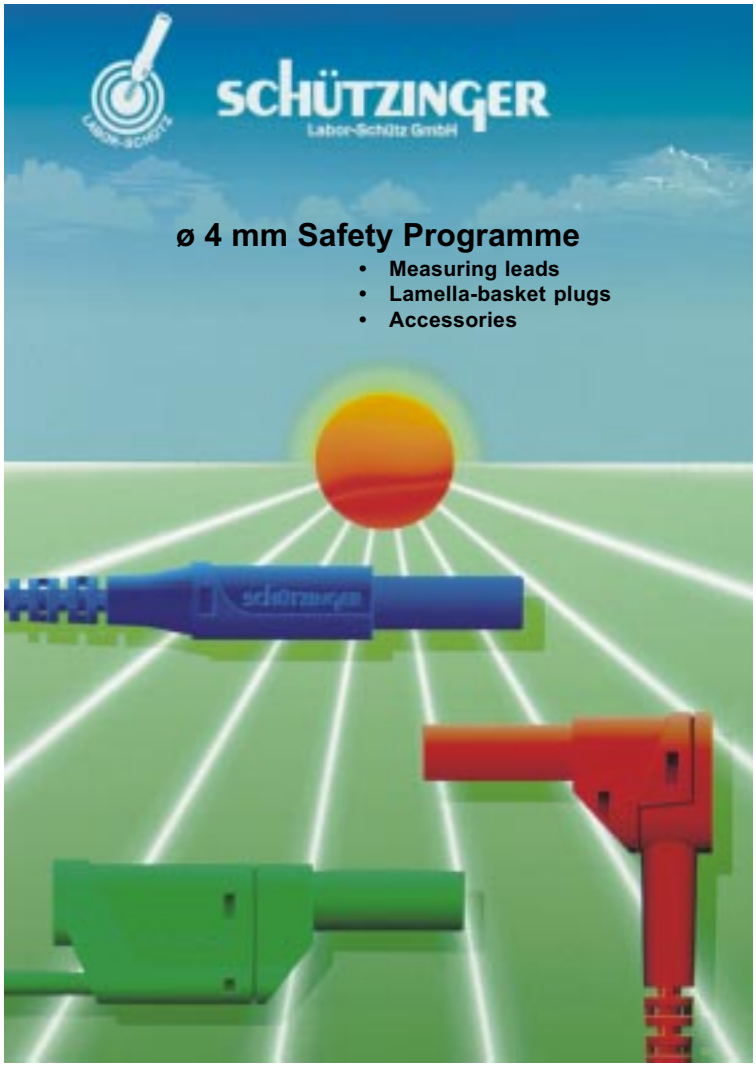
**Additional safety**
is attained by means of an insulating protective cap placed on the contact pin. This prevents unintentional contact from the front.

**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 (in $V_{AC}$ 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 30$V_{AC}$ / 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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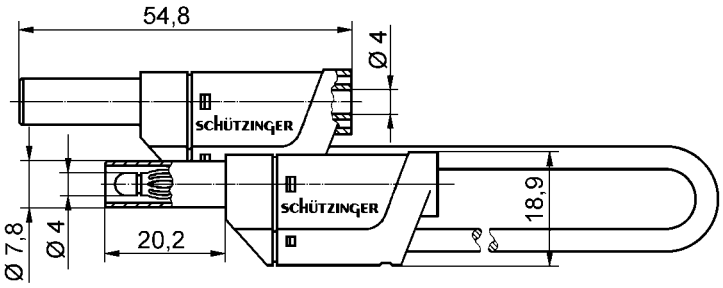



## Measuring lead

- 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<br>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)<br>contact parts nickel-plated | 25 cm<br>50 cm<br>100 cm<br>150 cm<br>200 cm | black<br>red<br>blue<br>yellow<br>green | PVC<br>2.5 mm² | 5 mΩ<br>9 mΩ<br>17 mΩ<br>25 mΩ<br>35 mΩ | 1000 V<br>CAT II | 32 A | - 10 °C ...<br>+ 80 °C |
| **VSFK 41 / 2,5 / ..**(length) / **..**(colour)<br>contact parts gold-plated | 25 cm<br>50 cm<br>100 cm<br>150 cm<br>200 cm | black<br>red<br>blue<br>yellow<br>green | PVC<br>2.5 mm² | 5 mΩ<br>8 mΩ<br>14 mΩ<br>22 mΩ<br>27 mΩ | 1000 V<br>CAT II | 32 A | - 10 °C ...<br>+ 80 °C |

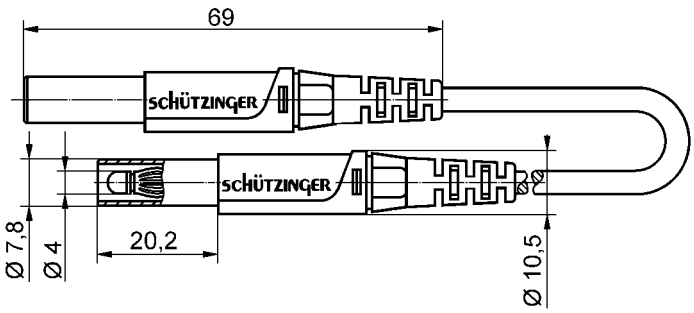
**other lengths, platings and wire square sections and silicon-leads on request**

**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)<br>contact parts nickel-plated | 25 cm<br>50 cm<br>100 cm<br>150 cm<br>200 cm | black<br>red | PVC<br>2.5 mm² | 5 mΩ<br>9 mΩ<br>17 mΩ<br>25 mΩ<br>35 mΩ | 1000 V<br>CAT II | 32 A | - 10 °C ...<br>+ 80 °C |
| **MSFK 31 / 2,5 / ..**(length) / **..**(colour)<br>contact parts gold-plated | 100 cm<br>200 cm | black<br>red | PVC<br>2.5 mm² | 14 mΩ<br>27 mΩ | 1000 V<br>CAT II | 32 A | - 10 °C ...<br>+ 80 °C |

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

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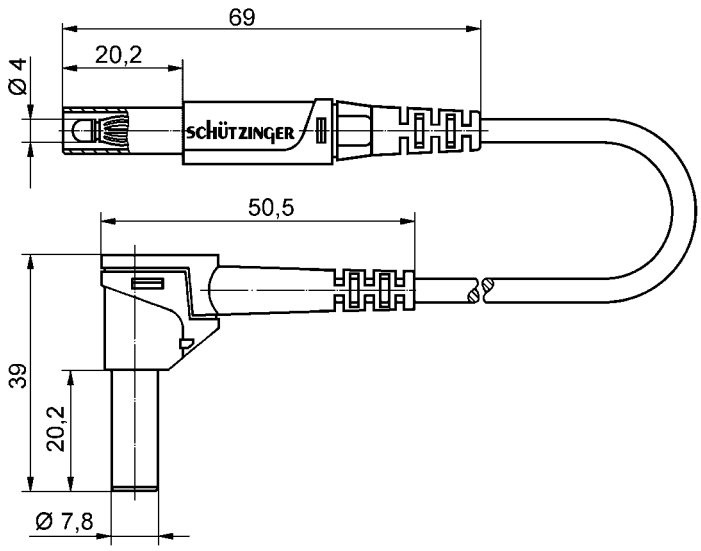



**Measuring lead**
- 2 safety lamella-basket plugs crimped on highly flexible lead. In accordance to IEC 1010, BG tested and awarded the Design Award IF 95.

**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

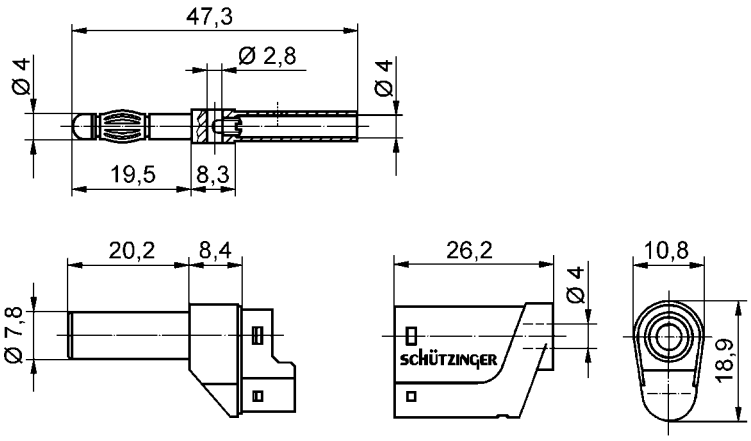
ø 4 safety

| General information | | | Technical data | | | | |
|---|---|---|---|---|---|---|---|
| | | | sleeves -25 °C ... + 90 °C<br>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)<br>contact parts nickel-plated | 25 cm<br>50 cm<br>100 cm<br>150 cm<br>200 cm | black<br>red<br>blue<br>yellow<br>green | PVC<br>2.5 mm² | 5 mΩ<br>9 mΩ<br>17 mΩ<br>25 mΩ<br>35 mΩ | 1000 V<br>CAT II | 32 A | - 10 °C ...<br>+ 80 °C |
| **MSWFK 51 / 2,5 / ..**(length) / **..**(colour)<br>contact parts gold-plated | 100 cm<br>200 cm | black<br>red | PVC<br>2.5 mm² | 14 mΩ<br>27 mΩ | 1000 V<br>CAT II | 32 A | - 10 °C ...<br>+ 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



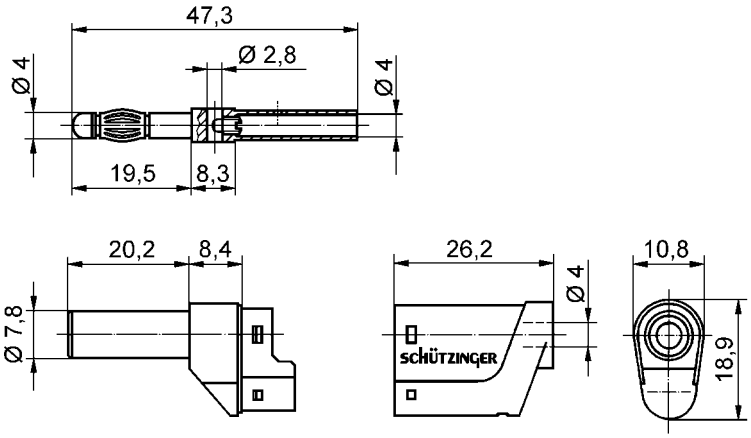

**order no.** **SFK 40 S / 1 / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)

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)<br>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)<br>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**

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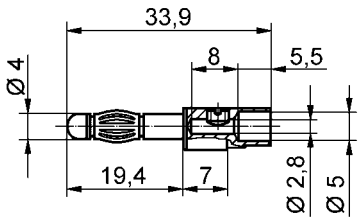
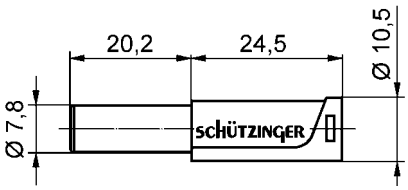
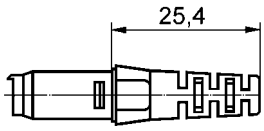
**Safety lamella-basket plug**
- screw terminal
- with sleeve, unassembled




**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

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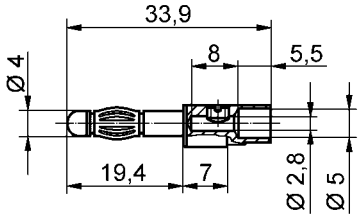
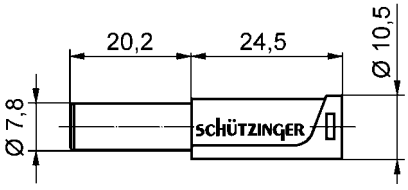
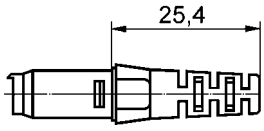
**Safety lamella-basket plug**
- screw terminal
- with sleeve, unassembled



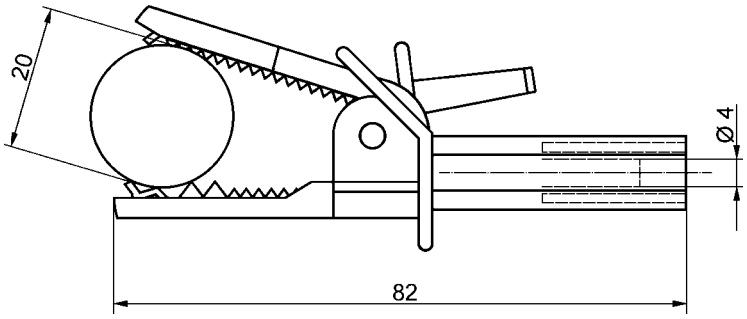




**order no.** **SFK 30 S / 2,5 / ..**(colour)
- contact part **nickel-plated**
- sleeve PA 6.6 (Polyamid)
  for conductors up to **2.5 mm²**
  for insulation diameter up to **4 mm**

**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)<br>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)<br>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**



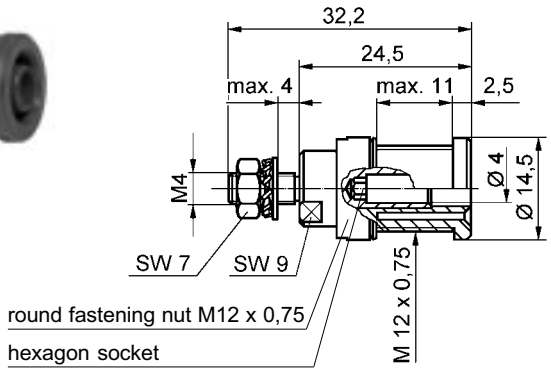

**Crocodile clip**
- insulated
- socket ø 4 mm

**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)<br>contact part nickel-plated | black<br>red | socket | < 10 mΩ | 600 V<br>CAT III | 12 A | - 25 °C ...<br>+ 80 °C |




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

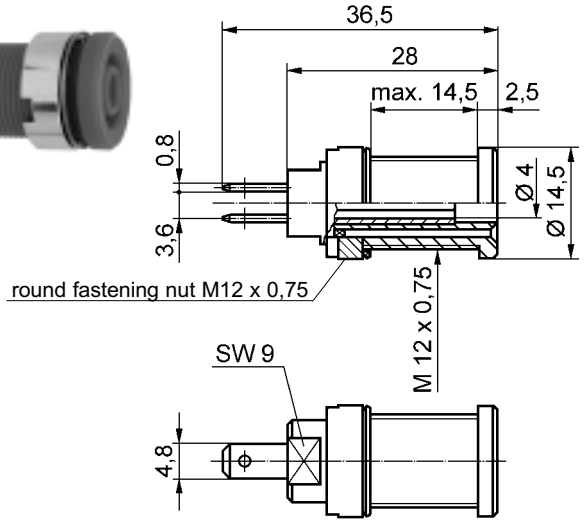
**order no. SEB 1987 / ..**(colour)
- contact part **nickel-plated**
- thread M4
- insulation PA 6.6 (Polyamid)

**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!



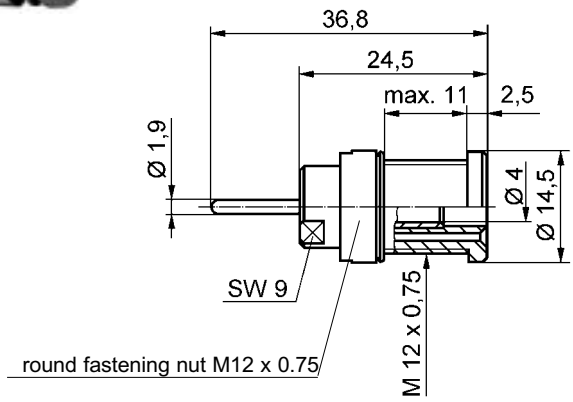

**Safety switch socket**
- for fitting into panels up to 14,5 mm thick
- round fastening nut M12 x 0,75

**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<br>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)<br>contact part nickel-plated<br>**SEB 1987 AU / ..**(colour)<br>contact part gold-plated | 100 Ncm<br>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)<br>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

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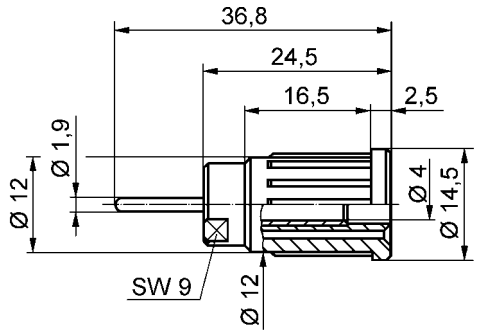



**Safety press in socket**
- for pressing into panel,
- with hole ø 12.2 ± 0.1 mm, sunk one side (0.5 x 45°)
- panel thickness
  metal-panels ≥ 1 mm
  plastic-panels ≥ 2 mm

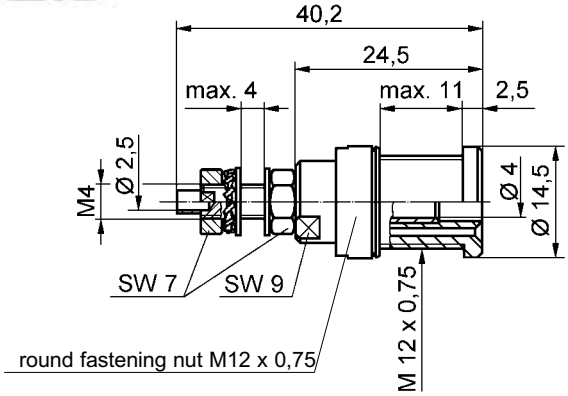
**order no. SEPB 1765 / ..**(colour)
- contact part **nickel-plated**
- pin 11.9 x ø 1.9
- insulation PA 6.6 (Polyamid)

**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<br>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)<br>contact part nickel-plated<br>**SEB 1764 AU / ..**(colour)<br>contact part gold-plated | 100 Ncm<br>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)<br>contact part nickel-plated<br>**SEPB 1765 AU / ..**(colour)<br>contact part gold-plated | —<br>— | 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**

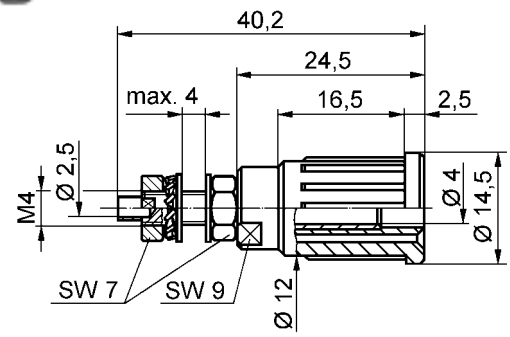



**Safety threaded socket**
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

**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

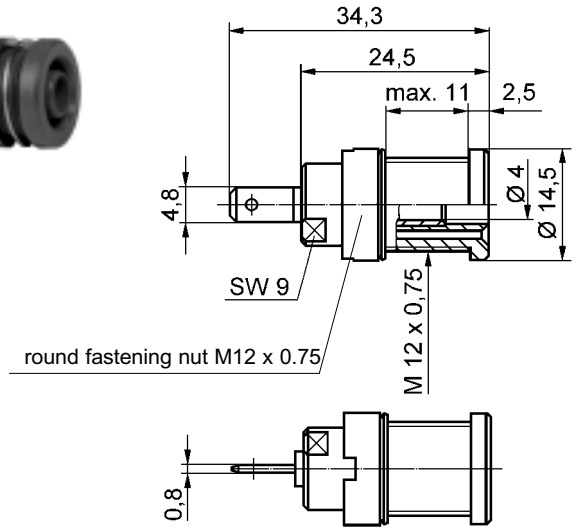
**order no. SEPB 1781 / ..**(colour)
- contact part **nickel-plated**
- thread M4
- insulation PA 6.6 (Polyamid)

**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<br>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)<br>contact part nickel-plated<br>**SEB 1768 AU / ..**(colour)<br>contact part gold-plated | 100 Ncm<br>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)<br>contact part nickel-plated<br>**SEPB 1781 AU / ..**(colour)<br>contact part gold-plated | —<br>— | 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**



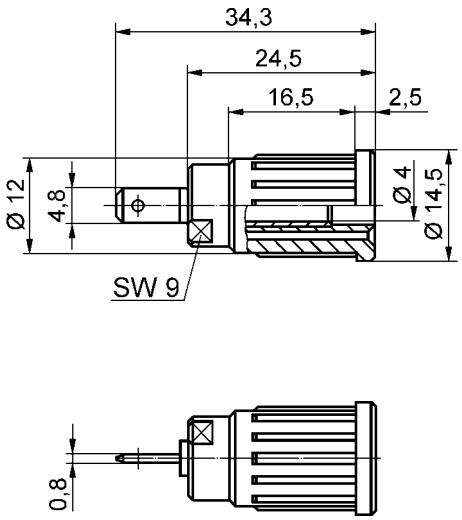

**Safety threaded socket**
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

**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

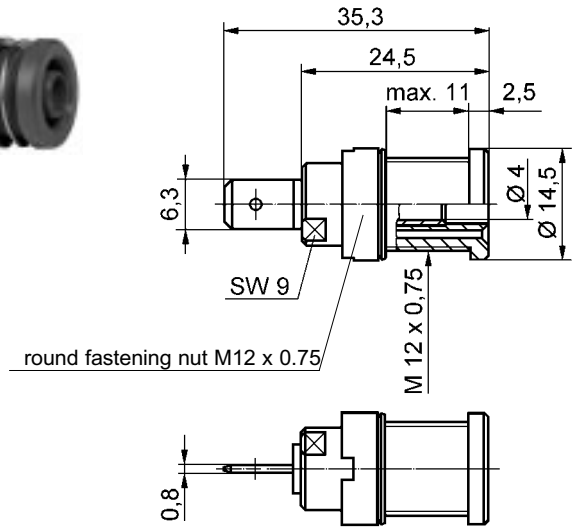
**order no.** **SEPB 1773 / ..**(colour)
- contact part **nickel-plated**
- tab 4.8 x 0.8
- insulation PA 6.6 (Polyamid)

**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<br>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)<br>contact part nickel-plated<br>**SEB 1772 AU / ..**(colour)<br>contact part gold-plated | 100 Ncm<br>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)<br>contact part nickel-plated<br>**SEPB 1773 AU / ..**(colour)<br>contact part gold-plated | —<br>— | 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

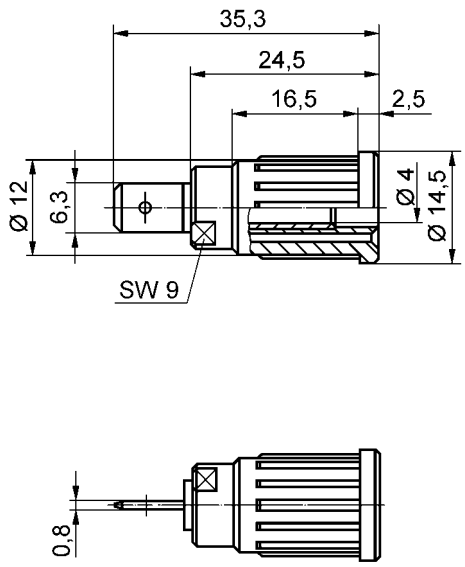
- for fitting into panels up to 11 mm thick
- round fastening nut M12 x 0.75

**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)

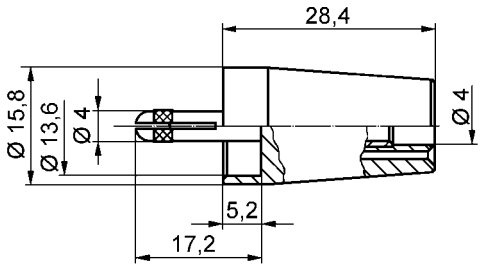
| | |
|---|---|
| - contact part | **nickel-plated** |
| - tab | 6.3 x 0.8 |
| - insulation | PA 6.6 (Polyamid) |

**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<br>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)<br>contact part nickel-plated<br>**SEB 1776 AU / ..**(colour)<br>contact part gold-plated | 100 Ncm<br>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 |
| **SEPB 1777 / ..**(colour)<br>contact part nicke--plated<br>**SEPB 1777 AU / ..**(colour)<br>contact part gold-plated | —<br>— | 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 |

**other terminals, colours and platings on request**

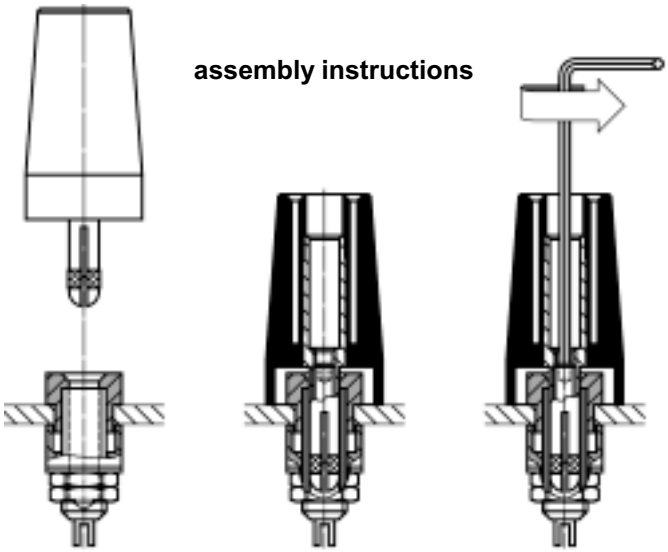



## Safety adapter

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:

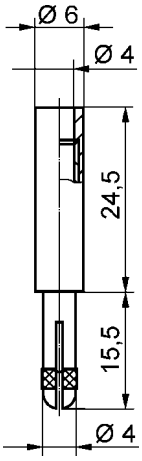
1. Disconnect
2. Secure against restoration of power
3. Establish that voltage is cut off
4. Earthing and short-circuiting
5. Cover or enclose adjacent live parts

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)<br>contact parts nickel-plated | black<br>red<br>blue<br>yellow<br>green<br>white | see assembly instructions | 5 mΩ | ... V* | 32 A | - 25 °C ...<br>+ 90 °C |

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

**other colours on request**

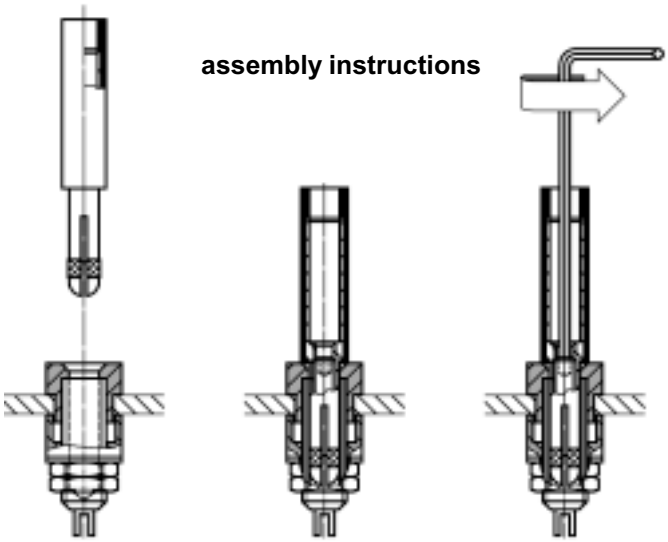



## Safety adapter

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)<br>contact parts nickel-plated | black<br>red<br>blue | see assembly-instructions | 5 mΩ | ... V* | 32 A | - 25 °C ...<br>+ 90 °C |

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

**other colours on request**

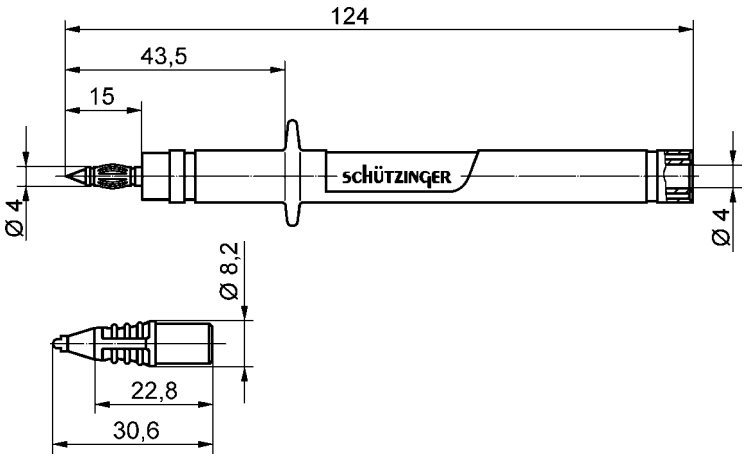
# New Test-Probes

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)

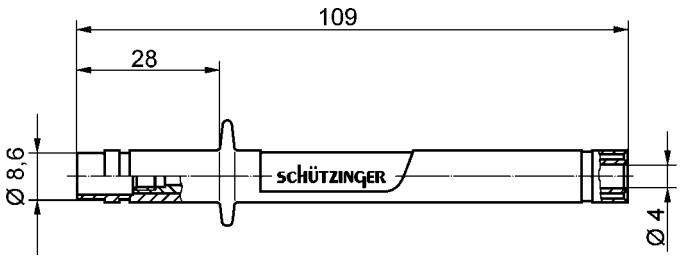
**colours:** see table

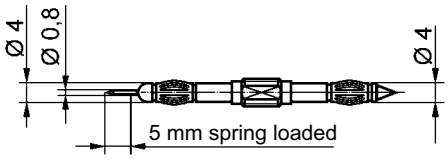
description of accessories

**Tip protection head SSK 2002 / ..** (colour)

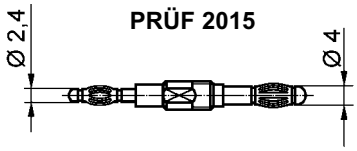
| General information | | | Technical data | | | | |
|---|---|---|---|---|---|---|---|
| order no. | | colours | terminal | transition resistance | rated voltage | rated current | operating temperature |
| **SPS 2124 / ..**(colour)<br>contact parts nickel-plated | set | black<br>red | safety socket |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

**other colours and platings on request**

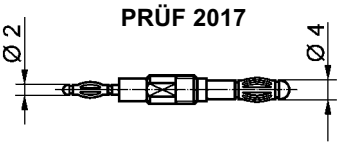



**PRÜF 2013**




**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

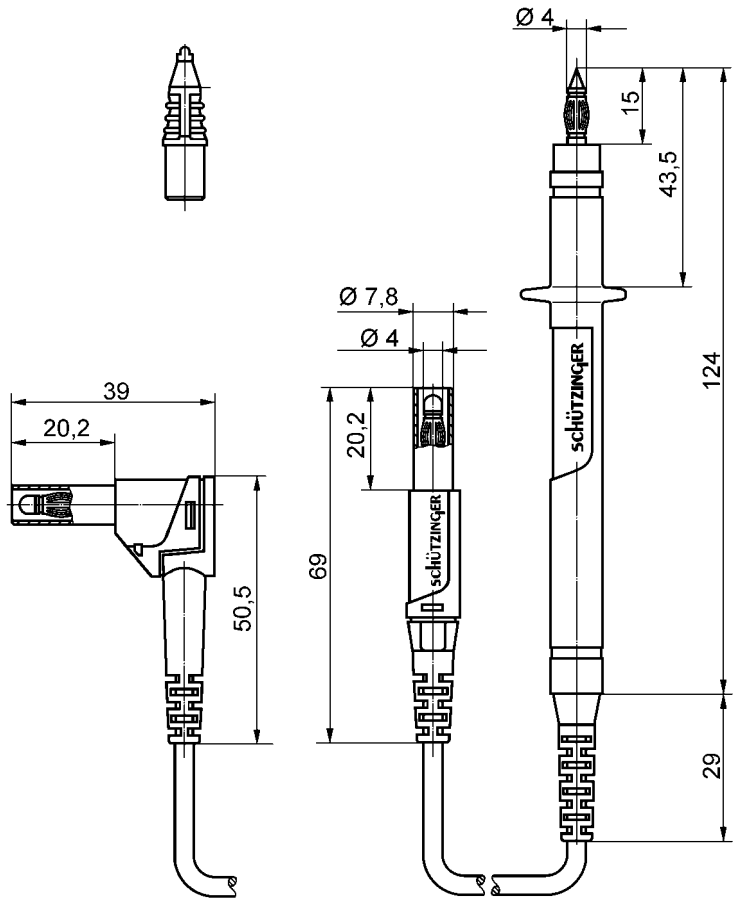
- this inset provides a 2.4 mm lamella-basket plug

### 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)<br>contact parts nickel-plated | set | black<br>red | socket | 10 mΩ | 1000 V<br>CAT II | 32 A | - 25 °C ...<br>+ 90 °C |
| **PRÜF 2013**<br>contact parts nickel-plated | spare part | — | — | 5 mΩ | 1000 V<br>CAT II | 32 A | - 40 °C ...<br>+ 110 °C |
| **PRÜF 2015**<br>contact parts nickel-plated | spare part | — | — | 5 mΩ | 1000 V<br>CAT II | 12 A | - 40 °C ...<br>+ 110 °C |
| **PRÜF 2017**<br>contact parts nickel-plated | spare part | — | — | 5 mΩ | 1000 V<br>CAT II | 10 A | - 40 °C ...<br>+ 110 °C |
| **SSK 2002 / ..**(colour) | spare part | black<br>red | —<br>— | —<br>— | —<br>— | —<br>— | - 25 °C ...<br>+ 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

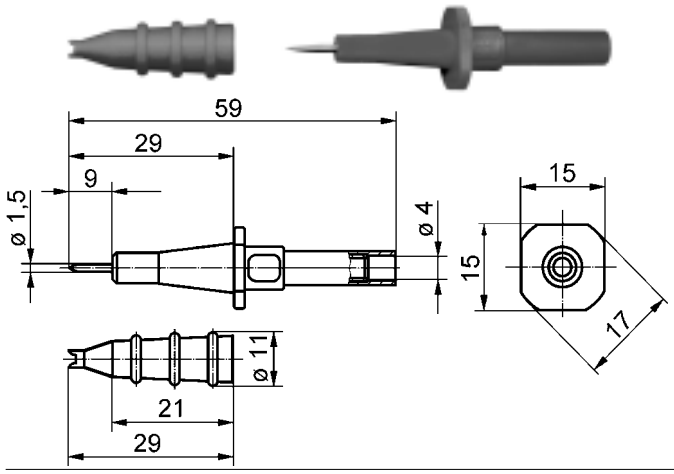
**order no. SPL 2128 / 2,5 / 100 / ..**(colour)
- as SPL 2127 / 2,5 / 100 / ..(colour), but with rightangle safety lamella-basket plug

description of accessories

**Tip protection head SSK 2002 / ..** (colour)

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

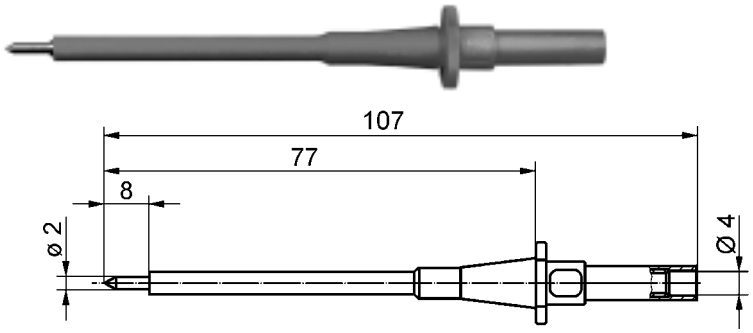
**other lengths, colours and platings on request**




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

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

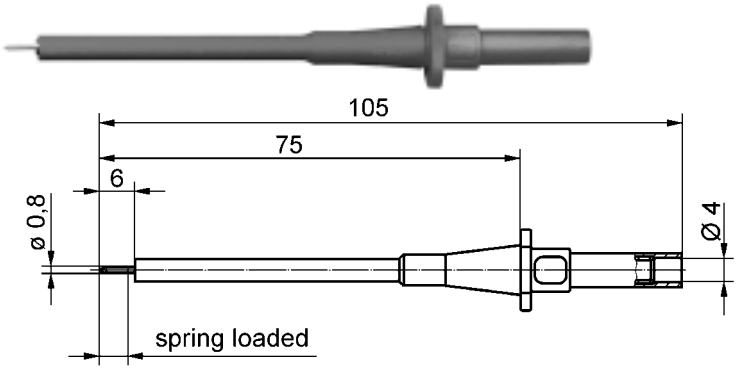
| | |
|---|---|
| - contact parts | **nickel-plated** |
| - tip | **steel** |
| - insulation | PA 6.6 (Polyamid) |
| **colours:** | see table |




**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 |

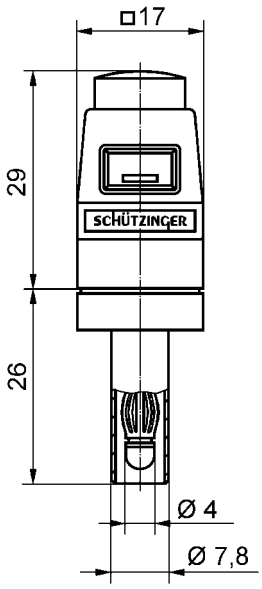



**Test probe**
- with axial socket, the tip protection head is included

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

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

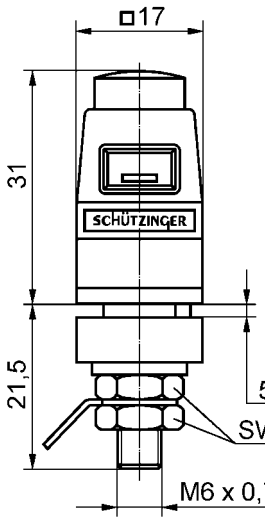
| General information | | Technical data | | | | |
|---|---|---|---|---|---|---|
| order no. | colours | terminal | transition resistance | rated voltage | rated current | operating temperature |
| **SPS 2590 / ..**(colour)<br>contact parts nickel-plated | black<br>red | safety<br>socket | 20 mΩ | 1000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

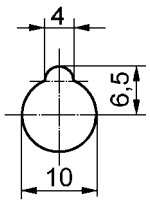



**Safety quick-release terminal**
- fully insulated for matal panels

**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)<br>contact parts nickel-plated | — | black<br>red | socket | < 3 mΩ | 300 V<br>CAT II | 16 A | - 25 °C ...<br>+ 90 °C |
| **SDK 801 / ..**(colour)<br>contact parts nickel-plated | 120 Ncm | black<br>red | soldering loop<br>or cable lug | < 3 mΩ | 300 V<br>CAT II | 16 A | - 25 °C ...<br>+ 90 °C |

**other colours and springs on request**

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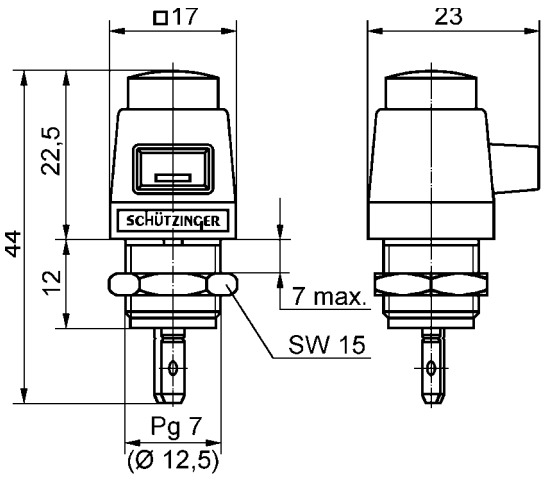


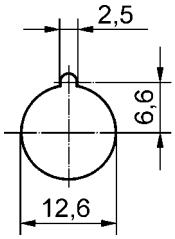

**Safety quick-release terminal**
- fully insulated

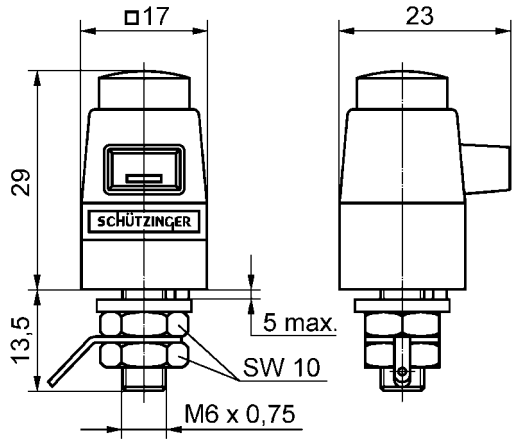
**order no.** **ESD 798 / ..** (colour)

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

**colours:** see table

**hole**



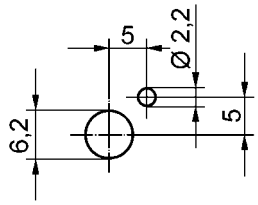

**Safety quick-release terminal**
fitting not insulated

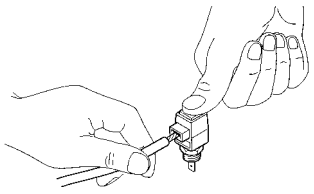
**order no.** **SDK 801 / ..** (colour)

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

**colours:** see table

**hole**

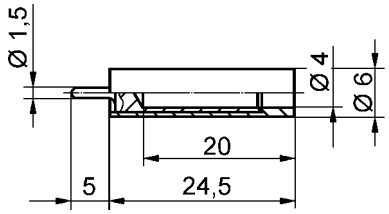


**Functional description:**
Wires and strands are connected between the spring jaws by pressing on the head of the terminal post.
Every quick-release terminal has an insertion window.
The window size is approx. 8 mm x 4 mm. A strong compression spring guarantees good contact. The pressure of the compression 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)<br>contact parts nickel-plated | 85 Ncm | black<br>red | FSH 2,8x0,5<br>or soldering | < 3 mΩ | 300 V<br>CAT II | 16 A | - 25 °C ...<br>+ 90 °C |
| **SDK 801 / ..**(colour)<br>contact parts nickel-plated | 120 Ncm | black<br>red | soldering loop<br>or cable lug | < 3 mΩ | 300 V<br>CAT II | 16 A | - 25 °C ...<br>+ 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

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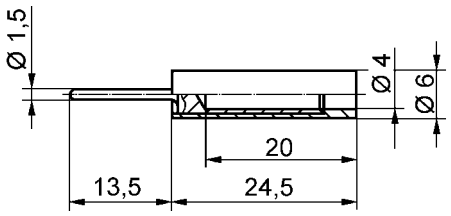
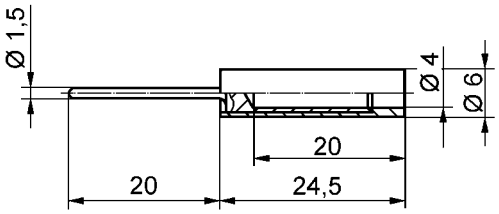



**Laboratory socket**
- as above, but pin length 13,5 mm

**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

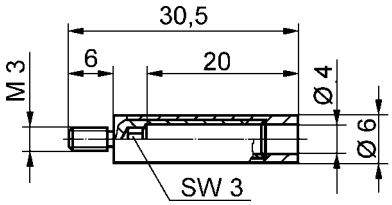
**order no.** **LB 4-1,5 S / 20 / ..**(colour)
- contact parts **nickel-plated**
- insulation PA 6.6 (Polyamid)

**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)<br>contact parts nickel-plated | black<br>red<br>blue | pin | <10 mΩ | ... V* | 18 A | - 25 °C ...<br>+ 90 °C |
| **LB 4-1,5 S / 13,5 / ..** (colour)<br>contact parts nickel-plated | | | <10 mΩ | ... V* | 18 A | - 25 °C ...<br>+ 90 °C |
| **LB 4-1,5 S / 20 / ..** (colour)<br>contact parts nickel-plated | | | <10 mΩ | ... V* | 18 A | - 25 °C ...<br>+ 90 °C |

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

**other colours and platings on request**

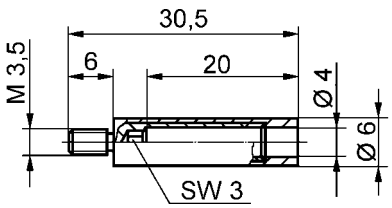



**Socket**

- **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 |

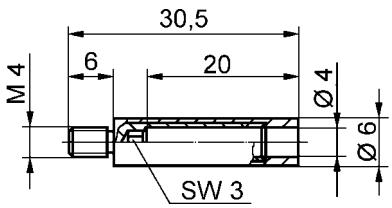



**Socket**

- **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 .

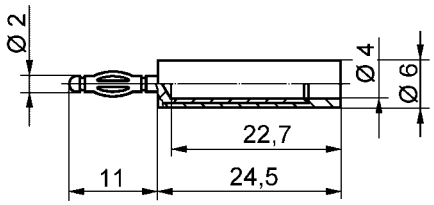
**order no. BU 2244 S / ..** (colour)

| | |
|---|---|
| - 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)<br>contact part nickel-plated | 80 Ncm | M3 x 6 | black<br>red<br>blue | <10 mΩ | 30 $V_{AC}$ *<br>60 $V_{DC}$* | 32 A | - 25 °C ...<br>+ 90 °C |
| **BU 2242 S / ..** (colour)<br>contact part nickel-plated | 85 Ncm | M3,5 x 6 | | <10 mΩ | 30 $V_{AC}$*<br>60 $V_{DC}$* | 32 A | - 25 °C ...<br>+ 90 °C |
| **BU 2244 S / ..** (colour)<br>contact part nickel-plated | 100 Ncm | M4 x 6 | | <10 mΩ | 30 $V_{AC}$*<br>60 $V_{DC}$* | 32 A | - 25 °C ...<br>+ 90 °C |

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

**other colours and platings on request**

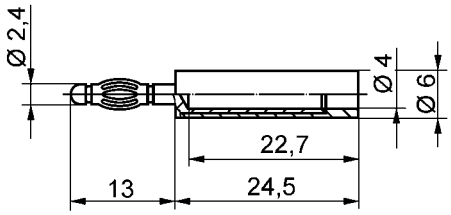



**Adapter**
- for conecting ø 2 mm - system to ø 4 mm safety - system

**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

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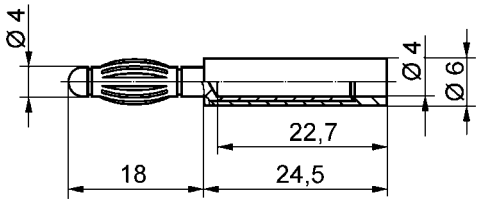


**Adapter**
- for connecting ø 4 mm system to ø 4 mm safety - system

**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)<br>contact parts nickel-plated | black<br>red | socket | 6 mΩ | 30 $V_{AC}$<br>60 $V_{DC}$ | 10 A | - 25 °C ...<br>+ 90 °C |
| **A 40 - 24 / ..** (colour)<br>contact parts nickel-plated | black<br>red | socket | 6 mΩ | 30 $V_{AC}$<br>60 $V_{DC}$ | 10 A | - 25 °C ...<br>+ 90 °C |
| **A 40 - 40 S / ..** (colour)<br>contact parts nickel-plated | black<br>red | socket | 6 mΩ | 30 $V_{AC}$<br>60 $V_{DC}$ | 10 A | - 25 °C ...<br>+ 90 °C |

**other colours and platings on request**

# 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 |
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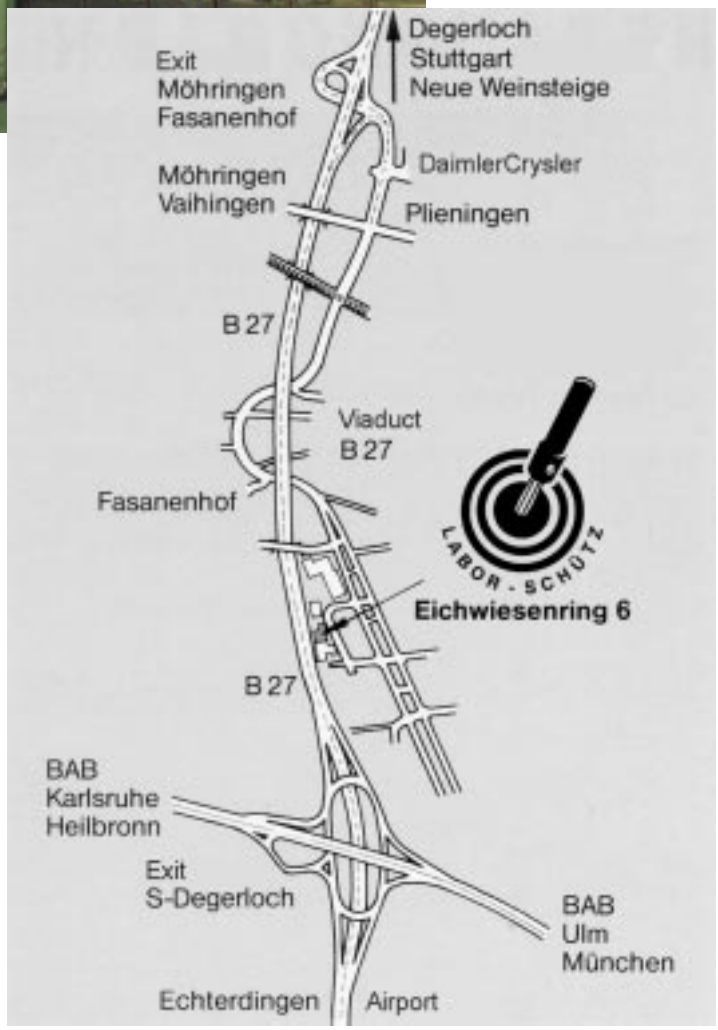
Deliver in: Week:

Part shipment: allowed ☐
not allowed ☐


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

SCHÜTZINGER

**Gerhard Schützinger**
**Labor-Schütz GmbH**
Eichwiesenring 6
D-70567 Stuttgart
Germany

Phone +49 (0) 711/715 46-0
Fax +49 (0) 711/715 46-40

info@schuetzinger.de
www.schuetzinger.de