





## Standards

- EN/IEC 60900:2004 (if applicable)
- DIN EN 61010-031 (if applicable)

## Insulated D8mm pin

Designed to connect up a variety of electrotechnical equipment (for example: SHUNT devices, current taps, connection cables, etc.)

### Technical Characteristics:

- for application on contacts with hole diameter 8 mm (e.g. insulated terminals D8 mm, perforated insulation terminals or terminal strips)
- the internal expansion mechanism guarantees safe connection to the contact terminal
- shock protection guaranteed by a spring loaded insulating cover and by an insulated covering of the front of the plug
- screw terminal for cable connection (max. 35 mm<sup>2</sup>)
- identification of the terminals with various colours for the phases L1, L2, L3, N
- elbow form
- protection against short circuits 8kA for 0.2 sec. or 1.3kA for 60 sec.
- for currents up to 200A for 60 min. or 250A for 15 min.
- nominal tension max. 600V AC / DC (50-60Hz)

| Description             | model         | dimensions   | weight |
|-------------------------|---------------|--------------|--------|
| • Black D8 pin, neutral | <b>2101 1</b> | 110x105x30mm | 160g   |
| • Black D8 pin, L3      | <b>2101 2</b> | 110x105x30mm | 160g   |
| • Brown D8 pin, L2      | <b>2101 3</b> | 110x105x30mm | 160g   |
| • Grey D8 pin, L1       | <b>2101 4</b> | 110x105x30mm | 160g   |
| • Blue D8 pin, N        | <b>2101 5</b> | 110x105x30mm | 160g   |



## Standards

- EN/IEC 60900:2004 (if applicable)
- DIN EN 61010-031 (if applicable)
- IEC 228 - class 5

## Connection cable with D8mm pin

For opening and closing circuit breaker bridges for lines under load in low voltage systems (e.g. for fuse replacement, connect/disconnect electric lines etc).

### Technical Characteristics:

- connection by insulated pin D8mm
- cable with double insulation / nominal voltage 1.8/3kV
- cable length 3000 mm
- for currents of 200A for 60 min. or 250A for 15 min. NOTE: with cables section 16 mm<sup>2</sup> the maximum current drops to 160A for 60 min. or 200A for 15 min.
- nominal voltage 600V AC / DC (50-60Hz)
- protection against short circuits 8kA for 0.2 sec. or 1.3kA for 60 sec.

**On request:** Cables are available with special lengths and sections up to 35 mm<sup>2</sup>

| Description                   | model         | cable cross sect. | weight |
|-------------------------------|---------------|-------------------|--------|
| • Connection cable black / L3 | <b>2119 5</b> | 25mm <sup>2</sup> | 1kg    |
| • Connection cable blue / N   | <b>2119 2</b> | 25mm <sup>2</sup> | 1kg    |
| • Connection cable brown / L2 | <b>2119 6</b> | 25mm <sup>2</sup> | 1kg    |
| • Connection cable grey / L1  | <b>2119 7</b> | 25mm <sup>2</sup> | 1kg    |



Phases identified

- Standards**
- EN/IEC 60900:2004 (if applicable)
  - DIN EN 61010-031 (if applicable)

Insulated perforation clamp

Designed to connect up a variety of electrotechnical equipment (for example: SHUNT devices, current taps, connection cables, etc.)

**Technical Characteristics:**

- connection by perforation of the insulating covering
- for low voltage cables of section from 10 to approximately 95 mm<sup>2</sup> (maximum outside diameter 16 mm)
- soon available in a large version for cables from 95 to 240 mm<sup>2</sup>
- Note:** maximum thickness of the insulation wall 3mm
- shock protection for the perforating point by spring loaded insulating sleeve
- identification of terminals with phase colour coding, definable by grip rotation
- nominal maximum voltage 600V AC / DC (50-60Hz)
- insulation to norm EN/IEC 60900: 2004
- shock protection to norm DIN EN 61010-034
- connector D4 mm to norm DIN EN 61010-034 for maximum current 16A (see photo D4)
- connector D8 mm for maximum current 200A for 60 min. or 250A for 15 min. and short circuit protection 5kA for 0.2 sec. or 1.3kA for 60 sec.

| Description         | model         | dimensions   | weight |
|---------------------|---------------|--------------|--------|
| • Set 10-95         | <b>2103 0</b> | 200x170x75mm | 878g   |
| • Perf. clamp 10-95 | <b>2103 3</b> | 175x35x42mm  | 184g   |



**Set Equipment:**

- 4 insulated perforation clamps
- sturdy case



Socket D4 mm for current take-off and electric measurements



Socket D8 mm with D8 Intercable plug for shunts and current take-off





**Standards**  
• DIN-EN 61010-031

## Set of D4mm adapter for measurement kit

Used to connect up test or measurement instruments and equipment on hex or cylindrical heads and threaded bars or pins.

### Technical Characteristics: Insulated D4mm clamp

- D4mm contact hole in compliance with EN CEI Standards 61010-2-31
- simultaneous current tapping up to 32A
- insulated terminals with 600V/Cat. III operating voltages

### Set-Equipment:

- 1 insulated grip
- 5 hex tightening inserts, SW13, SW17, SW19
- 5 color-coded insulated terminals for the single phases
- 1 rigid case to contain 5 adapter, 1 insulated grip, 25 inserts, 1 insulated hex cap nut SW13, 15 hex cap nuts and 1 ample cavity for measurement conductors

**Accessories (inserts, hex cap nut, etc. see page 100-102)**

| Description    | model         | dimensions   | weight        |
|----------------|---------------|--------------|---------------|
| • Set: Adapter | <b>2231 5</b> | 345x265x65mm | approx. 1.8kg |

## Accessories for current take-off/shunting and electrical measurements

### Insulated D4mm clamp for electrical measurements:

- connector D4 mm to norm DIN EN 61010-031 for maximum current 16A
- nominal voltage up to 600V AC / DC (50-60Hz)
- over-volt protection category III



2130 00...

**Standards**  
• DIN-EN 61010-031

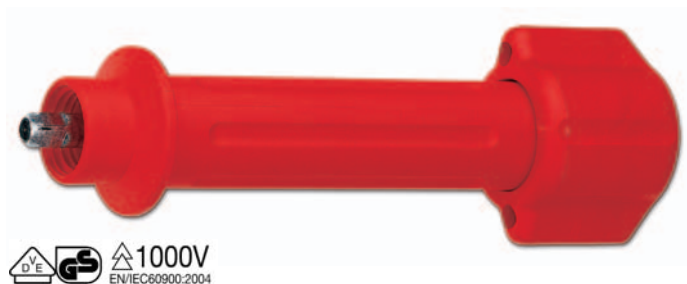
| Description         | model           | color        | weight |
|---------------------|-----------------|--------------|--------|
| • Insul. clamp D4mm | <b>2130 001</b> | black        | 62g    |
|                     | <b>2130 002</b> | green        | 64g    |
|                     | <b>2130 003</b> | red          | 63g    |
|                     | <b>2130 004</b> | blue         | 64g    |
|                     | <b>2130 005</b> | yellow/green | 62g    |



### Insulated D8mm clamp for shunts, current take-off devices, connection cables, etc.

- connector D8 mm
- max. current load 200A for 60 min. or 250A for 15min.
- short circuit prot. 8kA for 0.2 sec. or 1.3kA for 60 sec.
- max. nominal voltage 600V AC / DC (50-60Hz)

| Description         | model         | dimensions | weight |
|---------------------|---------------|------------|--------|
| • Insul. clamp D8mm | <b>2202 1</b> | 43x39mm    | 60g    |



1000V  
EN/IEC60900:2004

## **Insulated grip:**

- for assembly of insulated terminals D4 mm/D8 mm
- to norm EN/IEC 60900

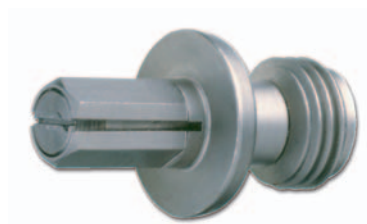
| Description      | model         | dimensions | weight |
|------------------|---------------|------------|--------|
| • Insulated grip | <b>2201 1</b> | 180x55mm   | 164g   |



## **Inserts for hexagonal socket screws with insulated shank:**

- for use only in combination with insul. terminals D4/D8
- the internal expansion mechanism guarantees perfect connection to the socket head screw
- current load 200A for 60 min. or 250A for 15 min.
- short circuit protection 7kA for 0.2 sec.
- shank insulation in plastic material

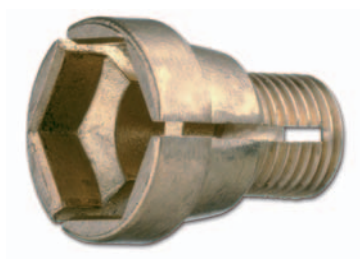
| Description    | model           | dimensions | weight |
|----------------|-----------------|------------|--------|
| • Insert I-S6L | <b>2208 060</b> | 56x20mm    | 34g    |
| • Insert I-S5L | <b>2208 050</b> | 56x20mm    | 30g    |



## **Tightening insert for Allen screws:**

- for use only in combination with insul. terminals D4/D8
- the internal expansion mechanism guarantees perfect connection to the socket head screw
- current load 200A for 60 min. or 250A for 15 min.
- short circuit prot. 8kA for 0.2 sec or 1.3kA for 60 sec.

| Description   | model           | dimensions | weight |
|---------------|-----------------|------------|--------|
| • Insert I-S8 | <b>2208 080</b> | 20x35mm    | 24g    |



## **Hex tightening insert for insulated terminals:**

- for use only in combination with insul. terminals D4/D8
- the internal expansion mechanism guarantees perfect connection to the socket head screw
- current load 200A for 60 min. or 250A for 15 min.
- short circuit prot. 8kA for 0.2 sec or 1.3kA for 60 sec.

| Description  | model           | hex wrench | weight |
|--------------|-----------------|------------|--------|
| • Insert SW8 | <b>2203 008</b> | SW 8       | 16g    |
| SW10         | <b>2203 010</b> | SW 10      | 16g    |
| SW11         | <b>2203 011</b> | SW 11      | 16g    |
| SW13         | <b>2203 013</b> | SW 13      | 16g    |
| SW14         | <b>2203 014</b> | SW 14      | 12g    |
| SW16         | <b>2203 016</b> | SW 16      | 14g    |
| SW17         | <b>2203 017</b> | SW 17      | 14g    |
| SW18         | <b>2203 018</b> | SW 18      | 16g    |
| SW19         | <b>2203 019</b> | SW 19      | 28g    |
| SW22         | <b>2203 022</b> | SW 22      | 28g    |



## **Standard D6 tightening insert:**

- for use only in combination with insul. terminals D4/D8
- the internal expansion mechanism guarantees perfect connection to the socket head screw
- current load 200A for 60 min. or 250A for 15 min.
- short circuit prot. 8kA for 0.2 sec or 1.3kA for 60 sec.

| Description | model           | dimensions | weight |
|-------------|-----------------|------------|--------|
| • Insert D6 | <b>2203 106</b> | 21x19mm    | 18g    |



## **Hex cap nut SW13:**

- serves to allow a contact on threaded bolts M8, M10, M12 via the SW13 die
- to allow correct assembly and disassembly, use an adapter for cap nuts and an insulated handle
- current load 200A for 60 min. or 250A for 15 min.
- short circuit prot. 8kA for 0.2 sec or 1.3kA for 60 sec.

| Description        | model           | inside thread | weight |
|--------------------|-----------------|---------------|--------|
| • Hex cup nut SW13 | <b>2206 008</b> | M8            | 10g    |
| SW13               | <b>2206 010</b> | M10           | 8g     |
| SW13               | <b>2206 012</b> | M12           | 4g     |



## **Insulated hex cap nut SW13:**

- assembly performed by the 13mm tightening insert and the insulated grip
- to fasten the SW13 cap nut on threaded rods and bolts
- electrocution protection through plastic bushing

| Description   | model         | dimensions | weight |
|---------------|---------------|------------|--------|
| • Hex cap nut | <b>2205 1</b> | –          | 38g    |

## Sets adapters for electrotechnical equipment

Adapter for current shunts and electrical measurements (e.g. shunts, current take-off devices, connection cables, measuring instruments, etc) from hexagonal head bolts and socket head screws, studs, bolts and cylindrical plugs.

### Set adapters D8mm for single-pole shunt

#### Set Equipment:

- 1 insulated grip
- 2 insulated D8mm clamps
- 2 hex tightening inserts hex SW13, SW17, SW19
- Rigid case to contain max. 4 adapter, 1 insulated grip and max. 20 inserts

**Accessories (inserts) see page 100-102**

| Description                                                                                      | model                           | dimensions                   | weight       |
|--------------------------------------------------------------------------------------------------|---------------------------------|------------------------------|--------------|
| <ul style="list-style-type: none"> <li>• <b>Set:</b> Adapter 1P</li> <li>• Rigid case</li> </ul> | <b>2223 2</b><br><b>AB22204</b> | 317x111x45mm<br>317x111x45mm | 770g<br>210g |

### Set adapters D8mm for 2-pole shung

#### Set Equipment:

- 1 insulated grip
- 4 insulated D8mm clamps
- 4 hex tightening inserts hex SW13, SW17, SW19
- Rigid case to contain max. 4 adapter, 1 insulated grip and max. 20 inserts

**Accessories (inserts) see page 100-102**

| Description                                                                                      | model                           | dimensions                   | weight       |
|--------------------------------------------------------------------------------------------------|---------------------------------|------------------------------|--------------|
| <ul style="list-style-type: none"> <li>• <b>Set:</b> Adapter 2P</li> <li>• Rigid case</li> </ul> | <b>2223 4</b><br><b>AB22204</b> | 317x111x45mm<br>317x111x45mm | 770g<br>210g |

### Set adapters D8mm for 3-pole shunt

#### Set Equipment:

- 1 insulated grip
- 6 insulated D8mm clamps
- 6 hex tightening inserts hex SW13, SW17, SW19
- Rigid case to contain max. 8 adapter, 1 insulated grip and max. 40 inserts

**Accessories (inserts) see page 100-102**

| Description                                                                                      | model                           | dimensions                   | weight         |
|--------------------------------------------------------------------------------------------------|---------------------------------|------------------------------|----------------|
| <ul style="list-style-type: none"> <li>• <b>Set:</b> Adapter 3P</li> <li>• Rigid case</li> </ul> | <b>2223 6</b><br><b>AB22208</b> | 275x221x69mm<br>275x221x69mm | 1.38kg<br>390g |

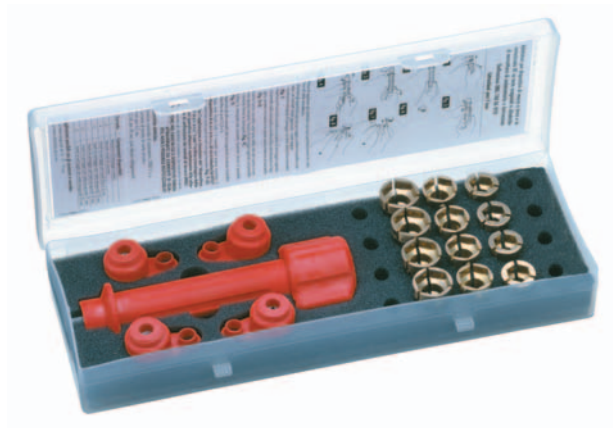
### Set adapters D8mm for 4-pole shunt

#### Set Equipment:

- 1 insulated grip
- 8 insulated D8mm clamps
- 8 hex tightening inserts hex SW13, SW17, SW19
- Rigid case to contain max. 8 adapter, 1 insulated grip and max. 40 inserts

**Accessories (inserts) see page 100-102**

| Description                                                                                      | model                           | dimensions                   | weight         |
|--------------------------------------------------------------------------------------------------|---------------------------------|------------------------------|----------------|
| <ul style="list-style-type: none"> <li>• <b>Set:</b> Adapter 4P</li> <li>• Rigid case</li> </ul> | <b>2223 8</b><br><b>AB22208</b> | 275x221x69mm<br>275x221x69mm | 1.54kg<br>390g |



Model: 2223 4



Model: 2223 8





Current tapping device 220V

Designed for two-pole tapping of currents up to 16A to power electrical equipment.

Technical Characteristics:

- switches IP44, 2x16A - 230V
- rubber cover insulation grade IP44
- 2 connection cables 16 mm<sup>2</sup>, length 1500 mm
- connection cable with double insulation; nominal voltage U/U0 1.8/3kV
- overload switch 16A, characteristic C, short circuit current 25kA
- differential switch 0.03A
- nominal voltage 230V AC / DC (50-60Hz)
- short circuit prot. 8kA for 0.2 sec or 1.3kA for 60 sec.

Set Equipment:

- current tapping device
- plastic case to contain the device housing

Standards (Housing):

- EN 61009
- EN 60493/4
- IEC 309

| Description            | model    | connection | weight        |
|------------------------|----------|------------|---------------|
| • Current tapp. device | 2320 212 | 2 x A      | approx. 4.8kg |
|                        | 2320 213 | B + C      | approx. 4.8kg |
|                        | 2320 214 | A + C      | approx. 4.8kg |

- **ON REQUEST: possible customised versions**

Possible connections:



A) Connection with pin



B) Connection with bush cable terminal



C) Connection with PEN connection terminal





## Current tapping device 380V/16A, three phase

4P device for current take-off up to 16A for supply of electro-technical devices.

### Technical Characteristics:

- switches CEE IP44, 380V/16A – 3P + PEN
- rubber cover protection grade IP44
- 2 connection cables 16 mm<sup>2</sup>, length 1500 mm
- connection cable with double insulation; nominal voltage U/U0 1.8/3kV
- overload switch 16A, characteristic C, short circuit current 25kA
- differential switch 0.03A
- nominal voltage 380/400V AC / DC (50-60Hz)
- short circuit protection 8kA for 0.2 sec. or 1.3kA for 60 sec.

### Set Equipment:

- current tapping device
- plastic case to contain the device housing

| Description            | model           | connection    | weight      |
|------------------------|-----------------|---------------|-------------|
| • Current tapp. device | <b>2320 221</b> | 3 x B + 1 x C | approx. 8kg |

### Standards (Housing):

- EN 61009
- EN 60493/4
- IEC 309

• **ON REQUEST: possible customised versions**

### Possible connections:



A) Connection with pin



B) Connection with bush cable terminal



C) Connection with PEN connection terminal



### Single-pole SHUNT device

For opening and closing circuit breaker bridges in lines under load in Low Voltage systems (e.g. to replace fuses, connect/disconnect electric connections etc).

#### **Technical Characteristics:**

- red Led to signal polarity inversion
- connection by insulated plug D8 mm
- cover protection grade IP44
- connection cable 16 mm<sup>2</sup>, length 1500mm
- connection cable with double insulation; nominal tension U/U0 1,8/3kV
- with fixed overload cut-out level
- nominal automatic switch current 160A; short circuit current 25kA
- current load 160A for 60 min.
- nominal tension max. 600V AC / DC (50-60Hz)
- short circuit prot. 8kA for 0.2 sec. or 1.3kA for 60 sec.

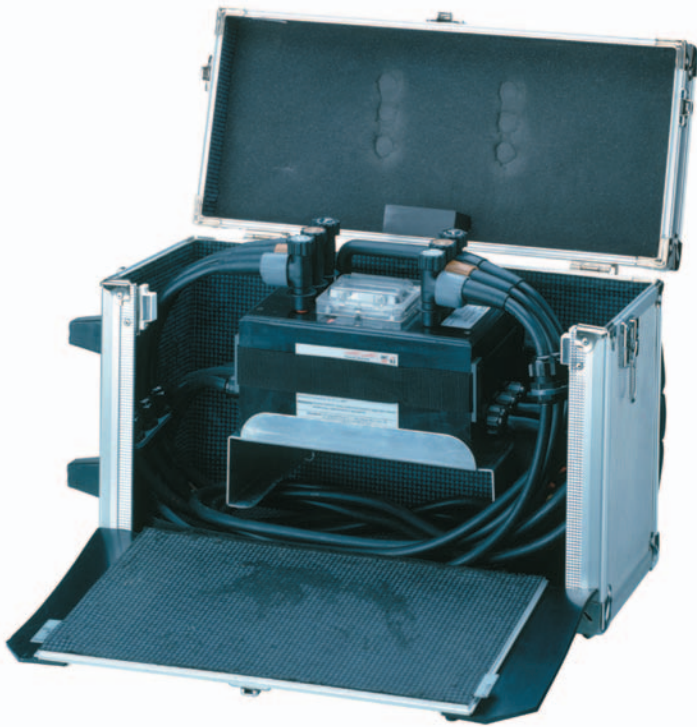
#### **Set Equipment:**

- single-pole Shunt device
- plastic case to contain the Shunt device

**Assembly option accessories for insulated terminal D8 + dies or insulation perforation terminal: see page 98 + 99**

| Description    | model            | dimensions    | weight        |
|----------------|------------------|---------------|---------------|
| • Shunt device | <b>2120 1160</b> | 430x310x120mm | approx. 5.1kg |

- ***ON REQUEST: possible customised versions***



model A

Multi-pole SHUNT device

For opening and closing circuit breaker bridges in lines under load in Low Voltage systems (e.g. to replace fuses, connect/disconnect electric connections etc).

Technical Characteristics:

- protection against polarity inversion for correct phase connection
- digital counter for number of operation cycles
- connection by insulated plug D8 mm
- cover protection grade IP44
- connection cable 25 mm<sup>2</sup>, length 1500mm
- connection cable with double insulation; nominal tension U/U0 1.8/3kV
- nominal automatic switch current 250A; short circuit current 35kA
- with fixed overload cut-out level
- current load 200A for 60 min or 250A for 15 min.
- nominal tension max. 600V AC / DC (50-60Hz)
- short circuit prot. 8kA for 0.2 sec. or 1.3kA for 60 sec.

Set Equipment - model A:

- multi-pole Shunt device
- aluminium case with integral trolley to hold the shunt and 1 set adapters D8/3P.

During work the shunt can stay in its case, while the connection cables are laid out using specific rubber guides to guarantee maximum protection and safety.

(for the adapters see page 103)

Set Equipment - model B:

- multi-pole Shunt device
- plastic case to contain the Shunt device

Assembly option accessories for insulated terminal D8 + dies or insulation perforation terminal: see page 89 + 99



model B

| Description      | model     | dimensions    | weight       |
|------------------|-----------|---------------|--------------|
| • Shunt 3-pole A | 2126 3250 | 430x310x200mm | approx. 13kg |
| • Shunt 3-pole B | 2127 3250 | 430x310x200mm | approx. 13kg |







## Standards:

- EN 61230
- EN 10020
- IEC 228 - class 6
- IEC 1138

## Grounding and short-circuit devices

Designed for grounding and short-circuiting LV cables

### Technical Characteristics:

- short-circuit device, section 16mm<sup>2</sup>, 4 insulated D8mm pins, 4 lengths 300/375/300/375mm and insulated junction with connection possibility for grounding cable by means of insulated pin
- grounding cable, section 16mm<sup>2</sup>, cable length 2000mm, 1 insulated D8mm pin and 1 screw clamp adjusting up to 20mm
- short circuit port, 8kA for 0.2 sec.

### Set Equipment:

- short-circuit device
- grounding cable
- rigid case to contain the device

| Description            | model         | dimensions        | weight         |
|------------------------|---------------|-------------------|----------------|
| • <b>Set:</b> Device   | <b>2420 0</b> | 340x170x160mm     | approx. 1.75kg |
| • Short-circuit device | <b>2420 1</b> | 70cm cable length | approx. 500g   |
| • Grounding cable      | <b>2420 2</b> | 200m cable length | approx. 800g   |



Short-circuit-device – 2420 1



Grounding cable – 2420 2