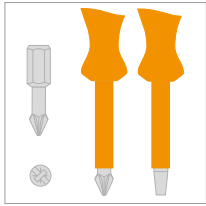


Technical information

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Installation instructions

Tool size for processing Berker products



The products have combination screws that can be processed with cross-head as well as flat-blade screwdrivers.

Tool sizes for contact screws:

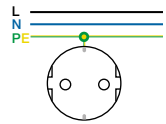
- Cross-head bits: Pozi-Drive, size 2
- Cross-head screwdrivers: Pozi-Drive, size 2
- Slot screwdrivers: blade thickness 1 mm

Tool sizes for fixing screws:

- Cross-head bits: Pozi-Drive, size 1
- Cross-head screwdrivers: Pozi-Drive size 1.
- Slot screwdrivers: Blade thickness 0.8 mm.

i When using cordless screwdrivers a maximum torque of 0.5 Nm should be used.

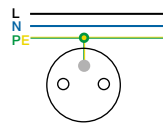
International socket outlets



Use in:

AF/AM/AT/AZ/BA/BE/BF/BG/BI/BJ/BY/CF/CS/DE/EE/EG/ER/ES/FI/GE/GL/GR/HR/HU/ID/IR/IS/IT/KR/KZ/LB/LT/LU/LV/LV/MD/MK/MR/MZ/NL/NO/PE/PT/PY/RO/RU/RW/SA/SE/SI/SM/SO/SR/SY/TJ/TR/UA/UY/UZ

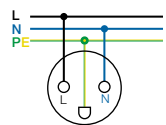
Figure 1: SCHUKO socket outlet* – 2-pin + earth, 250 V~, 16 A



Use in:

AD/BE/CG/CI/CM/CZ/DJ/DZ/FR/GF/GN/GP/KH/KM/MA/MG/ML/PL/SK/SN/SY/TD/TG/TN/VN

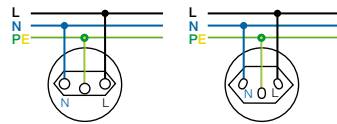
Fig. 2: Socket outlet with earthing pin FRANCE/BELGIUM* – 2-pin + earth, 250 V~, 16 A



Use in:

DK/GL

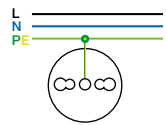
Fig. 3: Socket outlet with earthing contact DENMARK – 2-pin + earth, 250 V~, 13 A



Use in:

CH Type 13 (left Fig.)
CH Type 23 (right Fig.)

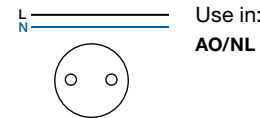
Fig. 4: Socket outlet with earthing contact SWITZERLAND – 2-pin + earth, type 13: 250 V~, 10 A; type 23: 250 V~, 16 A



Use in:

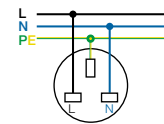
AL/CL/ET/IT/LY/SY

Fig. 5: Socket outlet with earthing contact ITALY* – 2-pin + earth, 250 V~, 16 A



Use in:
AO/NL

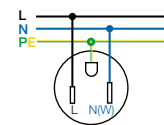
Fig. 6: Socket outlet without earthing contact NETHERLANDS* – 2-pin, 250 V~, 16 A



Use in:

AE/AG/BN/BW/CY/GB/GD/GH/GM/HK/IE/IQ/KE/KW/LR/MT/MW/MY/OM/SL/TZ/YE/ZA/ZW

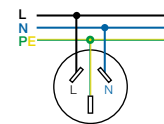
Fig 7: Socket outlet with earthing contact BRITISH STANDARD, standard: BS 1363 Part 2 – 2-pin + earth, 250 V~, 13 A



Use in:

CA/GT/GY/HH/HT/KP/LA/MX/PA/PH/PR/SV/TH/TW/US/VE

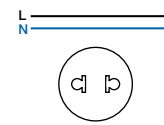
Figure 8: Socket outlet with earthing contact USA/CANADA NEMA 5–15 R – 2-pin + earth, 125 V~, 15 A



Use in:

AR/AU/FJ/NZAR/AU/FJ/NZ

Fig. 9: Socket outlet with earthing contact AUSTRALIA – 2-pin + earth, 250 V~, 10 A (left Fig.); 250 V~, 15 A (right Fig.)



Use in:

CA/GT/GY/HH/HT/KP/LA/MX/PA/PH/PR/SV/TH/TW/US/VE

Figure 10: Socket outlet without earthing contact EURO-AMERICAN STANDARD* – 2-pin, 250 V~, 10 A

* Non-polarised system - without specification for the connection of the external wire and neutral wire

Country abbreviations in accordance with ISO 3166

AD Andorra	BN Brunei	EE Estonia	GR Greece	KP North Korea	MT Malta	RU Russia	TM Turkmenistan
AE United Arab Emirates	BW Botswana	EG Egypt	GT Guatemala	KR South Korea	MW Malawi	RW Ruanda	TN Tunisia
AF Afghanistan	BY Belarus	ER Eritrea	GY Guyana	KW Kuwait	MX Mexico	SA Saudi Arabia	TR Turkey
AG Antigua	CA Canada	ES Spain	HK Hong Kong	KZ Kazakhstan	MY Malaysia	SE Sweden	TW Taiwan
AL Albania	CF Central Africa Republic	ET Ethiopia	HN Honduras	LA Laos	MZ Mozambique	SI Slovenia	TZ Tanzania
AM Armenia	CG Congo	FI Finland	HR Croatia	LB Lebanon	NL Netherlands	SK Slovakia	UA Ukraine
AO Angola	CH Switzerland	FJ Fiji	HT Haiti	LR Liberia	NO Norway	SL Sierra Leone	US USA
AR Argentina	CI Côte d'Ivoire	FR France	HU Hungary	LT Lithuania	NZ New Zealand	SM San Marino	UY Uruguay
AT Austria	CL Chile	GB Great Britain	ID Indonesia	LU Luxemburg	OM Oman	SN Senegal	UZ Uzbekistan
AU Australia	CM Cameroon	GD Grenada	IE Ireland	LV Latvia	PA Panama	SO Somalia	PU Venezuela
AZ Azerbaijan	CS Serbia and Montenegro	GE Georgia	IQ Iraq	LY Libya	PE Peru	SR Surinam	VN Vietnam
BA Bosnia and Herzegovina	CY Cypress	GF French Guiana	IR Iran	MA Morocco	PH Philippines	SV El Salvador	YE Yemen
BE Belgium	CZ Czech Republic	GH Ghana	IS Iceland	MD Moldavia	PL Poland	SY Syria	ZA Zambia
BF Burkina Faso	DE Germany	GL Greenland	IT Italy	MG Madagascar	PR Puerto Rico	TD Chad	ZW Zimbabwe
BG Bulgaria	DJ Djibouti	GM Gambia	KE Kenya	MK Macedonia	PT Portugal	TG Togo	
BI Burundi	DK Denmark	GN Guinea	KH Cambodia	ML Mali	PY Paraguay	TH Thailand	
BJ Benin	DZ Algeria	GP Guadeloupe	KM Comoros	MR Mauritania	RO Rumania	TJ Tajikistan	

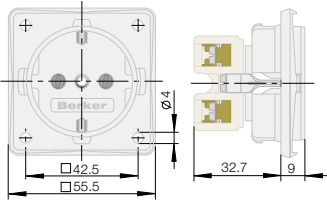
Berker integro Module inserts

i Flat-head screws, size M3 or M3.5 must be used to fasten the inserts.

Socket outlets

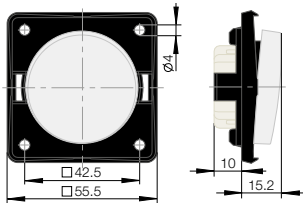
Dimensional drawing

Socket outlets of international plug-and-socket systems have insertion depths that are different from those of SCHUKO socket outlets (Table 1).



Rocker switch/rocker push-button

Dimensional drawing



Socket outlet system	Installation depth
SCHUKO socket outlet with plug-in terminals	32.7 mm
SCHUKO socket outlet with screw terminals	32.5 mm
SCHUKO socket outlet with installation-piercing terminals	46.5 mm
Socket outlet with earthing contact, USA/CANADA, NEMA 5-15 R	19.5 mm
Socket outlet with earthing contact, USA/CANADA, NEMA 6-20 R	19.5 mm
Socket outlet with earth contact AUSTRALIA	16.5 mm
Socket outlet with earthing contact DENMARK	27.5 mm
Socket outlet with earthing contact ITALY	34.0 mm
Socket outlet with earthing contact, SWITZERLAND, type 13	28.0 mm
Einbauöffnung Socket outlet with earthing contact, SWITZERLAND, type 23	28.0 mm
Socket outlet with earth contact BRITISH STANDARD	20.5 mm
Socket outlet with earthing pin FRANCE/BELGIUM with screw terminals	29.5 mm
Socket outlet with earthing pin FRANCE/BELGIUM with installation-piercing terminals	43.5 mm
Socket outlet without earth contact NETHERLANDS	29.6 mm
Socket outlet without earthing contact EURO-AMERICAN STANDARD	21.3 mm

Table 1: Installation depth of different plug and socket systems

Multimedia modules

Cinch modules

Cinch (RCA) is the designation of standardised connectors for transmitting electrical signals, primarily via coaxial cables. Use of other cable types is not widespread, however it is possible.

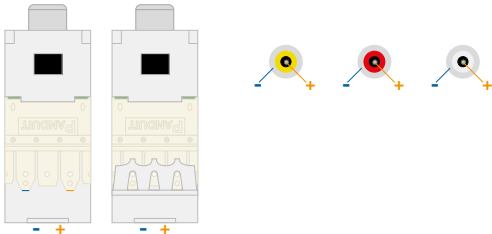


Figure 1: Polarity for cinch modules

S-Video module

The S-Video (also known as Separate Video, Y/C) module is used for separate transmission of brightness (luminance) and colour (chrominance or chroma) information.

i Cable length should not exceed 10 m.

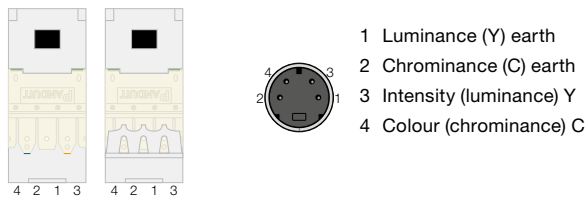


Figure 2: Contact assignment of the S-Video module

VGA module

The VGA module is used to connect display devices on a graphic card. Depending on the quality, VGA cables can be susceptible to interference at lengths of under 5m, or they can still transmit a good signal at lengths in excess of 30 m. Cables suited for high frequency with a coaxial structure for the colour channels are advantageous.

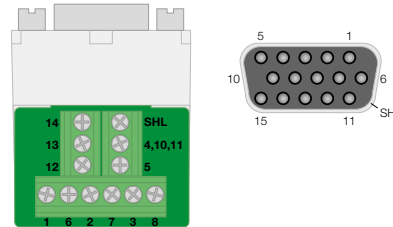


Fig. 3: Pinout of the VGA modules

PIN	Transmission signal	wire
1	red	Coaxial wire
2	green	Coaxial wire
3	blue	Coaxial wire
4*	Monitor ID Bit 2	Twisted pair wire (optional connection)
5	Ground	Twisted pair wire
6	Red ground	Coaxial shielding
7	Green ground	Coaxial shielding
8	Blue ground	Coaxial shielding
9	-	-
10*	Synchronous ground	Twisted pair wire
11*	Monitor ID bit 0 or digital ground	Twisted pair wire (optional connection)
12	Monitor ID bit 1	Twisted pair wire (optional connection)
13	Horizontal synchronisation	Wire 1
14	Vertical synchronisation	wire 2
15	Monitor ID bit 3	-
SHL	Housing shielding	External shielding

*are connected together on one terminal

Table 2: Contact pinouts of the VGA modules

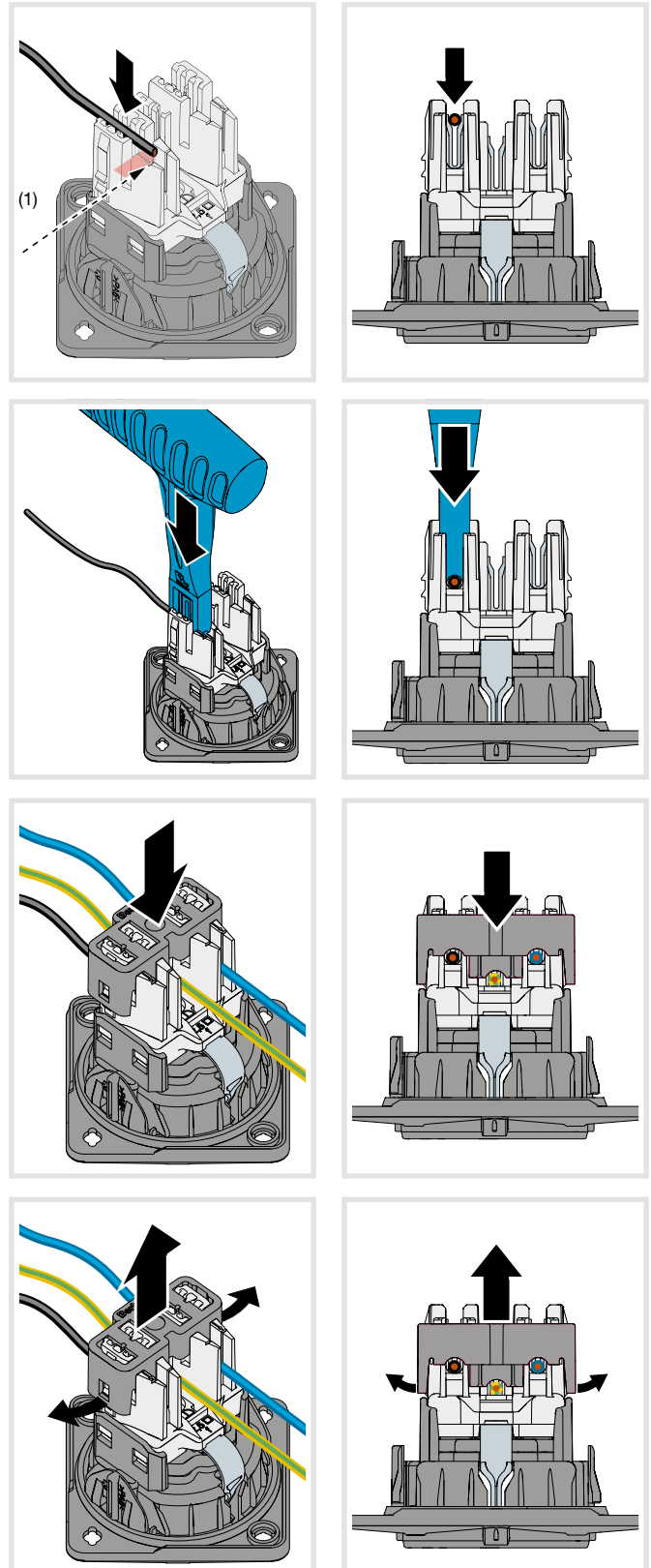
Connection of insulation-piercing terminals

Correct use

- Only suitable for connection with finely stranded (flexible) cables (2.5 mm²).
- Connection of a maximum of 2 cables per terminal connection.
- Connection of continuous cables.
- Connection of end of cables
- Only for use in self-contained systems (e.g. trunkings)

Connect insulation-piercing terminals

- Insert cable form above in the insulation-piercing terminal until resistance is felt.
- i** Insert the cable ends in such way that they lie in the red marked area, but extend at most to the marking notch (1).
- Position the joining tool and push the cable firmly into the terminal as far as it will go.
- After connecting all cables, attach the safety cap. Depending on the assignment of 1 or 2 cables per terminal connection, use the first or second notch.
- i** In addition to the connection of cable ends (sw), the diagram shows the principle of looping through of wires (gnge, bl) as an example.



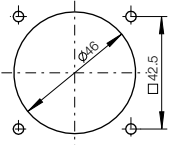
Remove the safety cap with a tool

- Slightly lift the notching tongues and remove the safety cap.
- i** The safety cap provides contact protection at the contact.

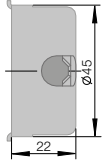
Contact protection boxes (cavity walls)

Dimensional drawings

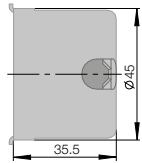
Installation cutout Ø 46 mm



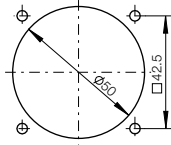
9 1820 01 9 1820 03



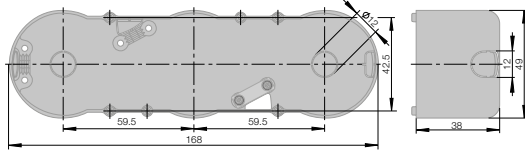
9 1820 9 1820 02



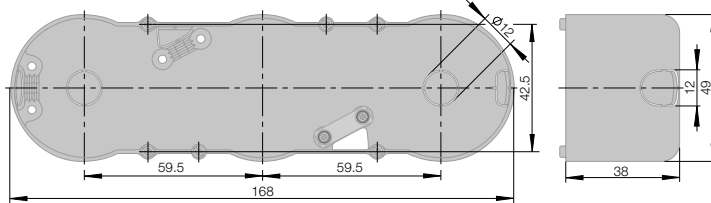
Installation cutout Ø 50 mm



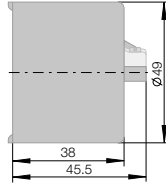
9 1915 01 9 1915 02



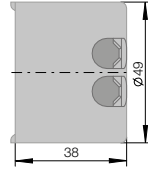
9 1933



9 1883

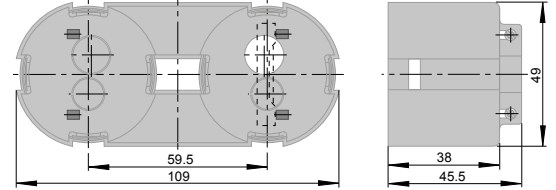


9 1887 01



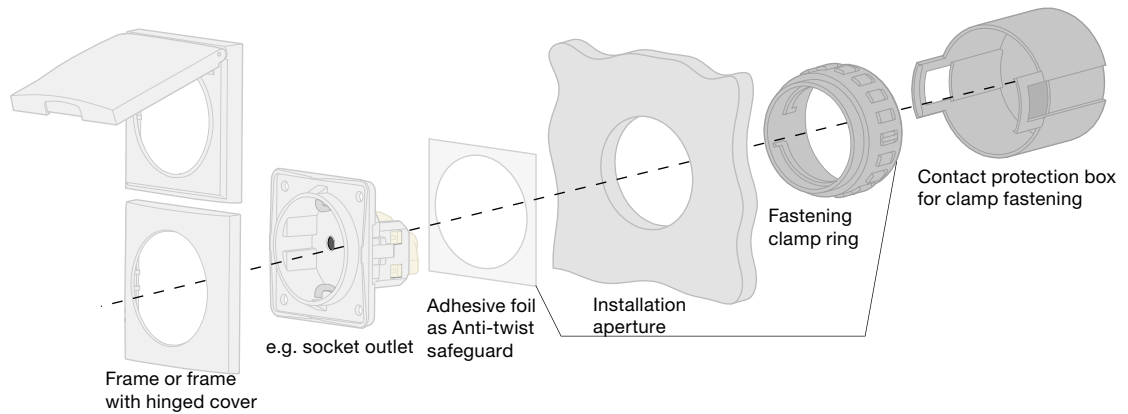
i The strain reliefs are not suitable for flat hose lines of 0.75 mm².

9 1911 .. 9 1912 ..



Mounting with clamp fastening

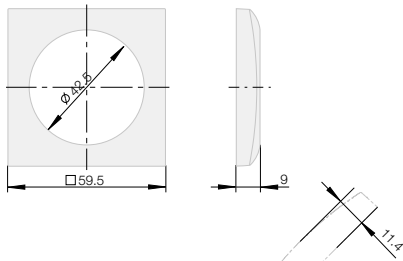
e.g. in a mirror



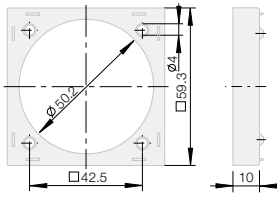
Berker integro - design flow

Dimensional drawings

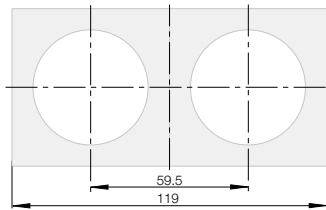
Frame 1gang



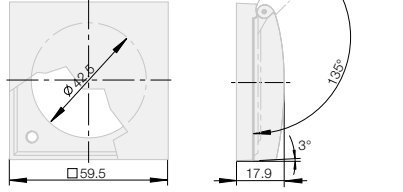
Surface-mounted spacer ring



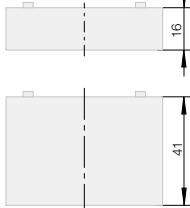
Frame 2gang



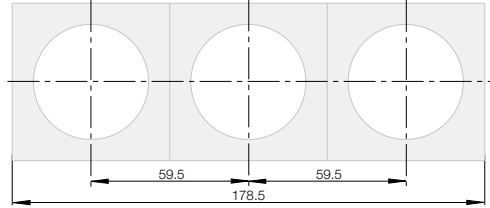
Frame with hinged cover



Surface-mounted housing



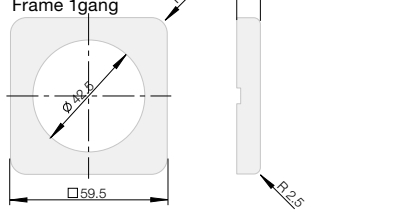
Frame 3gang



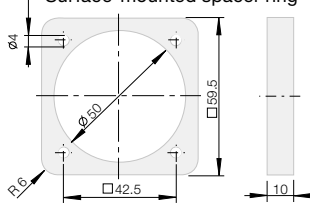
Berker integro - design classic

Dimensional drawings

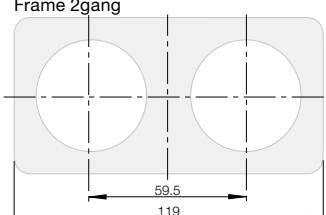
Frame 1gang



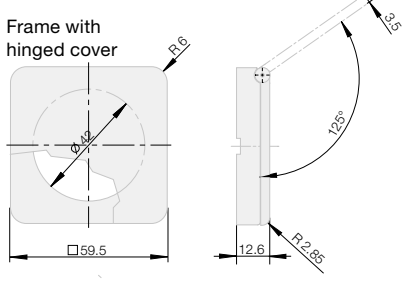
Surface-mounted spacer ring



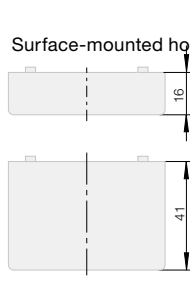
Frame 2gang



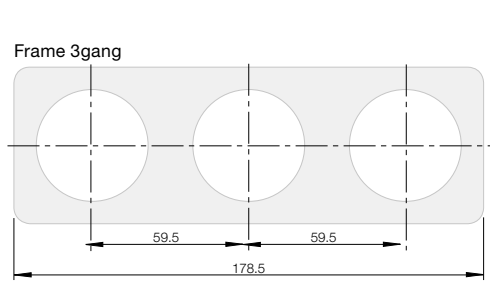
Frame with hinged cover



Surface-mounted housing



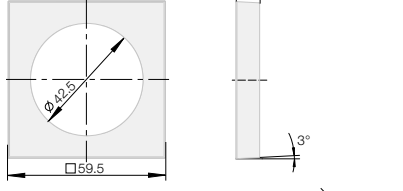
Frame 3gang



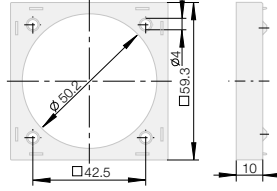
Berker integro - design pure

Dimensional drawings

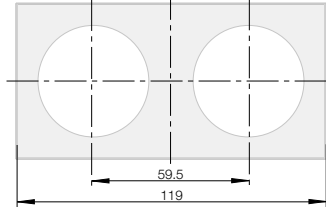
Frame 1gang



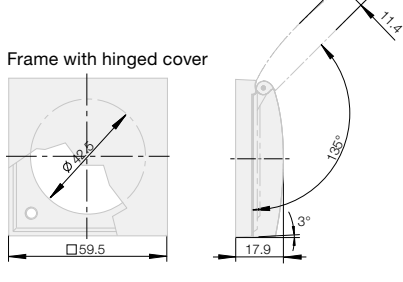
Surface-mounted spacer ring



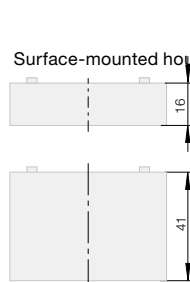
Frame 2gang



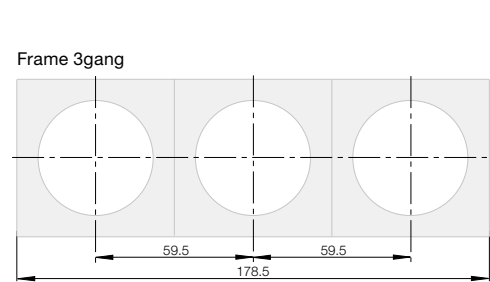
Frame with hinged cover



Surface-mounted housing

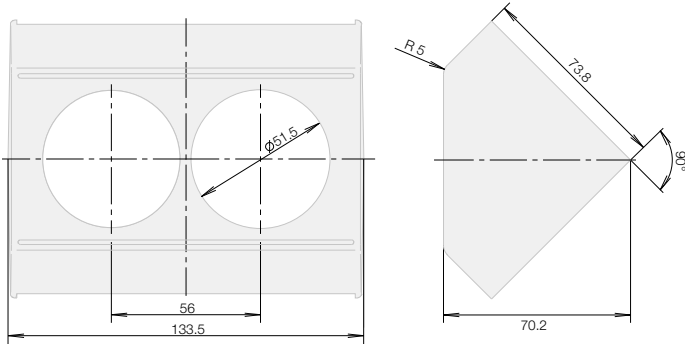


Frame 3gang



Berker twin-box

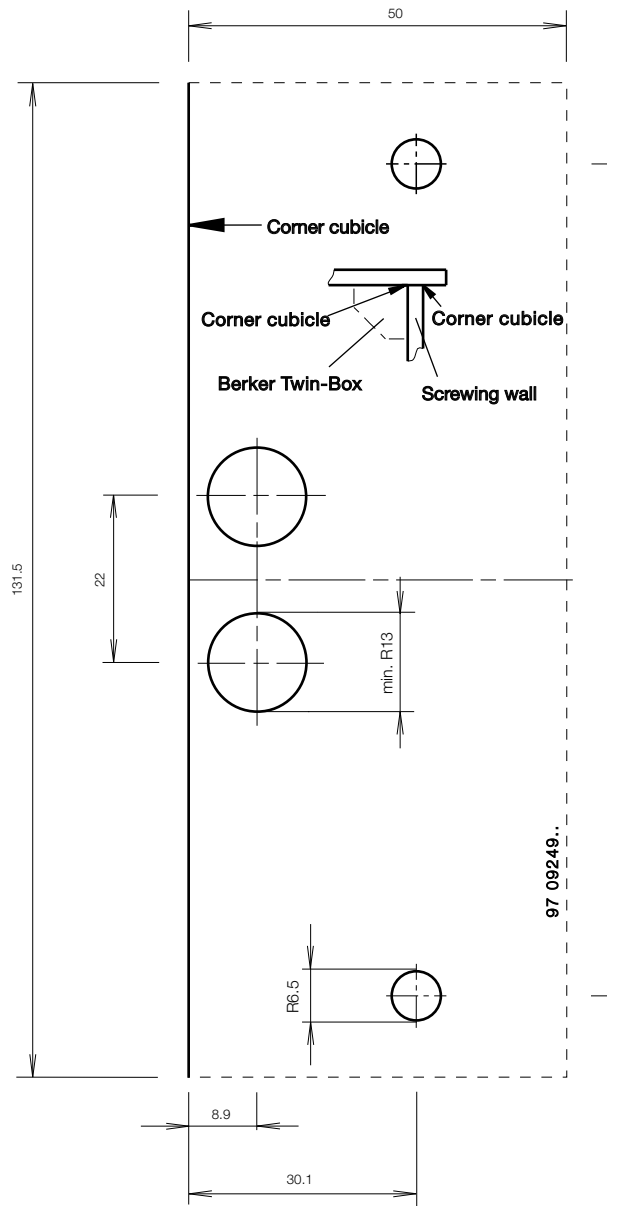
Dimensional drawing



twin-box combination	Lead (Type H05VV-F)			Light fitting cable (Type H05VV-F)		
	Number of wires	Cross section	Length	Number of wires	Cross section	Length
1948 02	3	1.5 mm ²	1.5 m	-	-	-
1948 08	3	1.5 mm ²	1.5 m	2	0.75 mm ²	1.5 m
1948 13	3	1.5 mm ²	1.5 m	2	0.75 mm ²	1.5 m
1948 16	3	2.5 mm ²	1.5 m	3	2.5 mm ²	1.5 m
1948 17	3	1.5 mm ²	1.5 m	3	0.75 mm ²	1.5 m
1948 18	3	1.5 mm ²	1.5 m	-	-	-
1948 19	3	2.5 mm ²	1.5 m	-	-	-
1948 20	3	1.5 mm ²	1.5 m	2	0.75 mm ²	1.5 m
1948 25	3	2.5 mm ²	1.5 m	-	-	-
1948 26	3	2.5 mm ²	1.5 m	3	1.5 mm ²	1.5 m
1948 27	3	1.5 mm ²	1.5 m	3	1.5 mm ²	1.5 m
1948 29	3	1.5 mm ²	1.5 m	-	-	-
1948 30	3	1.5 mm ²	1.5 m	-	-	-

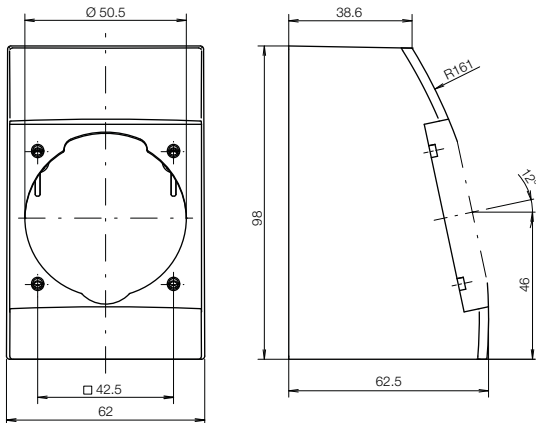
Table 3: twin-box pre-assemblies

Berker twin-box assembly aid

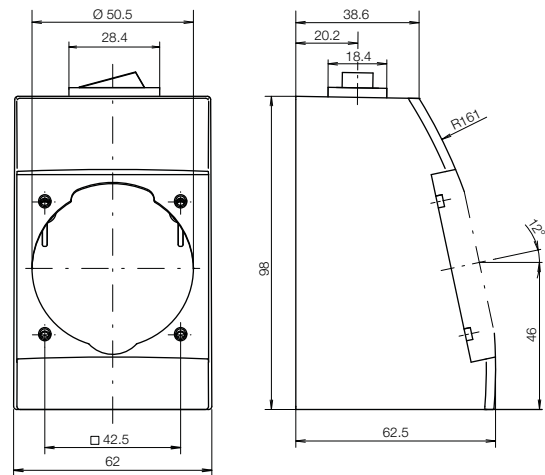


Berker integro box

Assembly set



Assembly set with on/off switch



Installation instructions

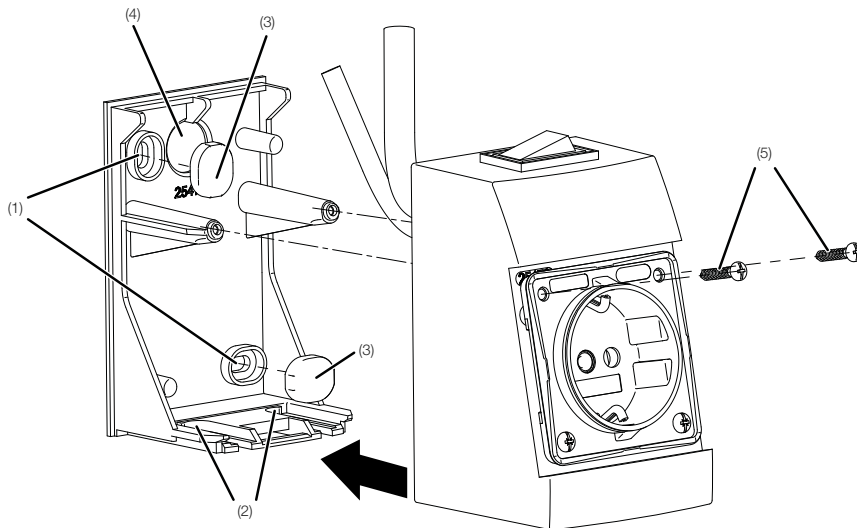


Figure 1: Lower part and cover

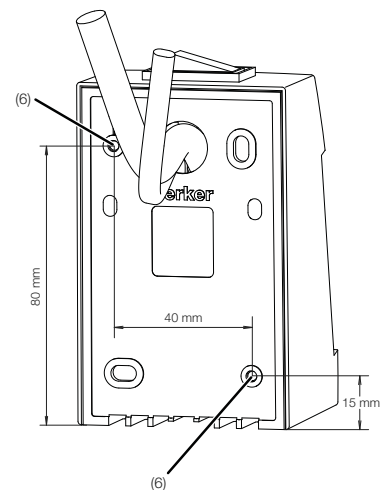


Figure 2: Dimensions for rear mounting of the complete device

- (1) Screw holes for mounting on mirror cabinet rear panel (front view)
- (2) Screw holes for mounting on mirror cabinet floor
- (3) Protection covers
- (4) Cable entry
- (5) Screws (supplied)

- (6) Fastening points for mounting the complete device (rear view)

Mounting the integro Box

- Fasten lower part of the integro Box to the mirror cabinet rear panel using suitable screws (1).
- Cover screw holes using the protective covers supplied (3).
- or
- Fasten lower part of the integro Box to the mirror cabinet floor using suitable screws (2).
- Insert cables through the opening provided (4).
- Push cover onto the lower part until it engages.
- Fasten cover to the lower part using the screws supplied (5).

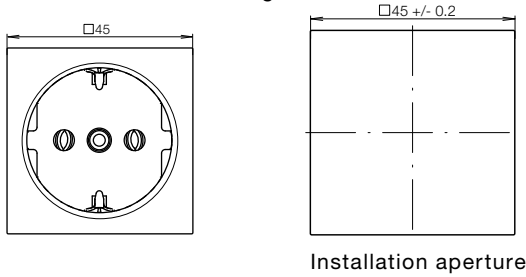
The integro Box can also be screwed to the rear panel of the mirror cabinet in assembled state using the fastening points (6) provided (Figure 2). Suitable screws are available upon request.

Built-in modules 45 x 45

i The built-in modules 45 x 45 are snapped into place in the installation opening using the "SNAP-IN method" and can thus be installed without the need for tools.
Width 1 module unit = 22.5 mm.

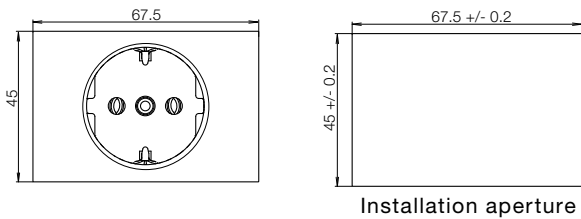
Built-in SCHUKO socket-outlet SNAP IN 4.6 mm, 2 module units

- for installation in cable trunkings



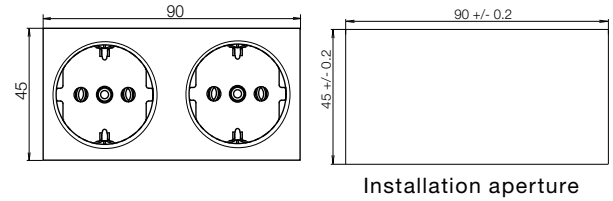
Built-in SCHUKO socket outlet SNAP IN 4.6 mm, 3 module units

- for installation in cable trunkings



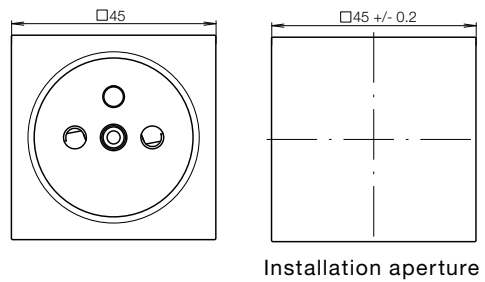
Built-in SCHUKO double socket outlet SNAP IN 4.6 mm, 4 module units

- for installation in cable trunkings



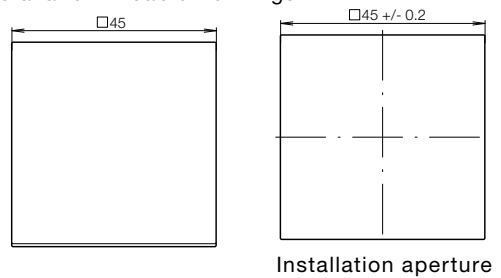
Built-in socket outlet with earthing contact SNAP IN 4.6 mm, 2 module units

- for installation in cable trunkings



Built-in change-over switch SNAP IN 4.6 mm

- for installation in cable trunkings

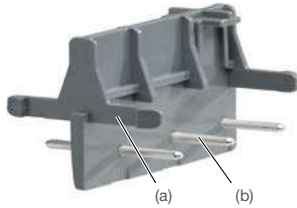


Installation of several socket outlets via connection adapter

Several socket outlets have to be connected via a connection adapter (order no. WS120).

The connection adapter is used for quick installation for the following types:

- WS172, WS172E, WS172N, WS172V, WS185
- WS173, WS173E, WS173N, WS173V, WS186
- WS121, WS121E, WS121N, WS121V
- WS122, WS122E, WS122N, WS122V
- WS123, WS123E, WS123N, WS123R, WS123V



The connection adapter is inserted into the plug-in terminals of the socket outlet with its contact pins.

The connection bridges must snap into place.

- (a) Connection bridge
- (b) Contact pin

Installation

Only in the first socket outlet module is the connection cable inserted into the plug-in terminals.



- Insert the connection adapter into the plug-in terminals of the socket outlet module in the correct position.
- Pay attention to correct polarity (labelling of the terminals).
- Insert connection adapter with socket outlet module into the plug-in terminals of the next socket outlet module in the correct position.



Dismantling

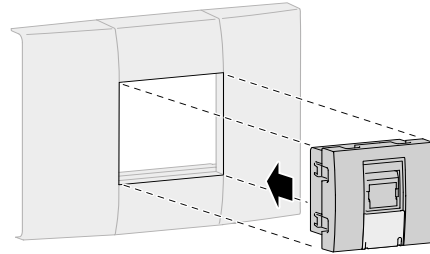
⚠ Before dismantling, make sure that no voltage is present. Cover all live parts.

- To dismantle or separate the socket outlet modules, push in the connection bridges on both sides using a slot screwdriver.
- Pull socket outlet modules apart.



Installation in installation aperture

- Prepare the installation opening for the corresponding module.
- Connect module.
- Snap module into place in the installation opening (Example: FCC socket outlet).



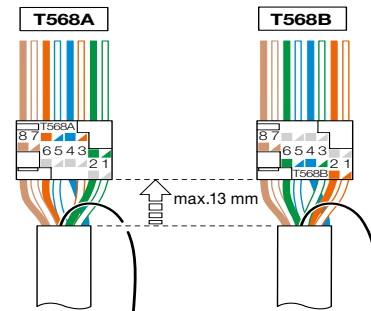
Data communication

Connection technology

There are two types of connection variants in the data communication:

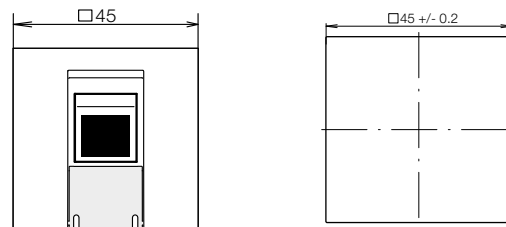
- T568 A
- T568 B

The difference between both variants lies in the assignment of the green/green-white and orange/orange white wire pair.



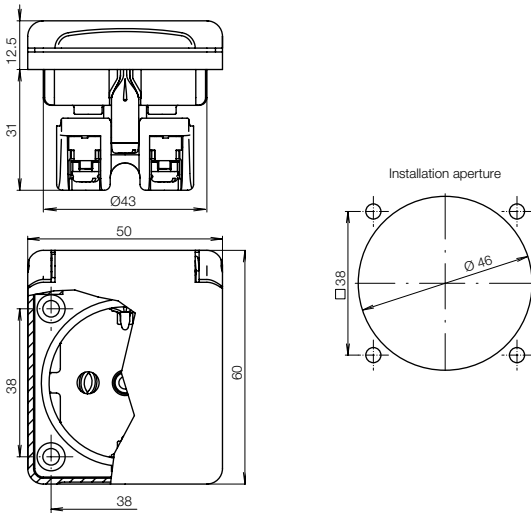
- The twisted pair wires (twisted pair) must not be drilled more than 13 mm, as otherwise the transmission properties will change.
- In the case of shielded cables, apply the shield.

FCC socket outlet 8pole shielded, Cat.6 SNAP IN 4.6 mm



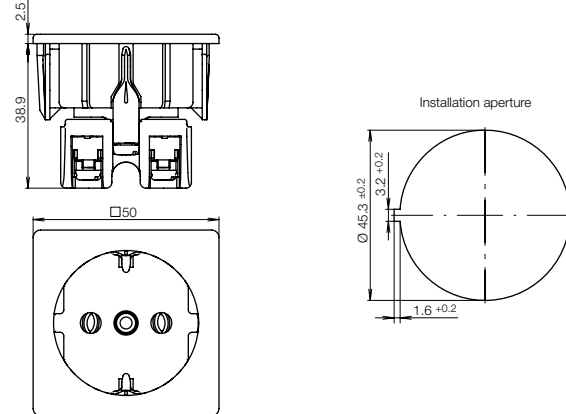
Built-in SCHUKO socket outlets

Built-in SCHUKO socket outlet with hinged cover 50 x 60 mm

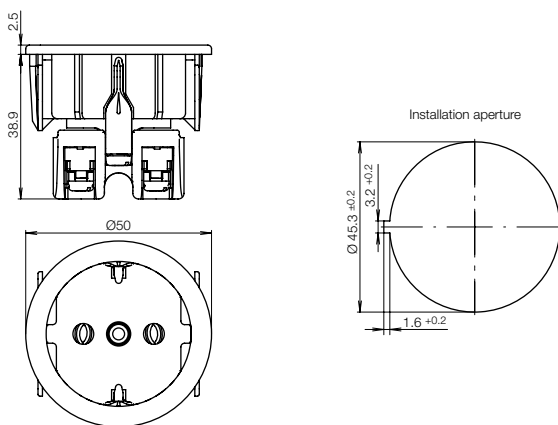


Built-in SCHUKO socket outlet with centre plate 50 x 50 mm, SNAP IN

- for different installation wall thicknesses

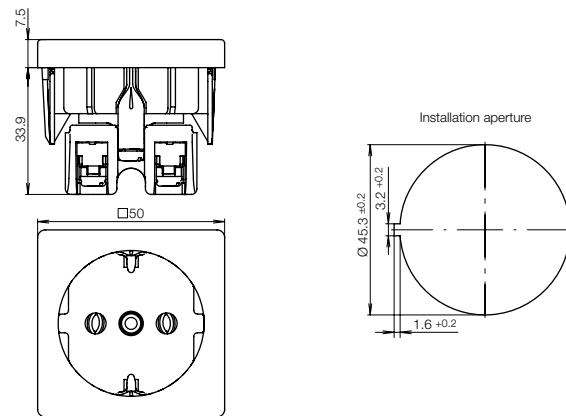


Built-in SCHUKO socket outlet with centre plate Ø 50 mm, SNAP IN - for different installation wall thicknesses

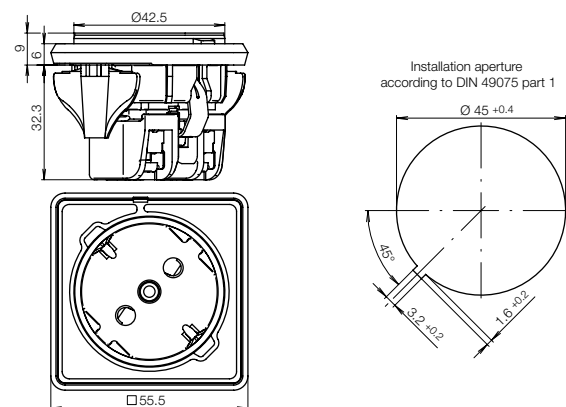


Built-in SCHUKO socket outlet with centre plate 50 x 50 mm, SNAP IN 0.6 - 1.5 mm

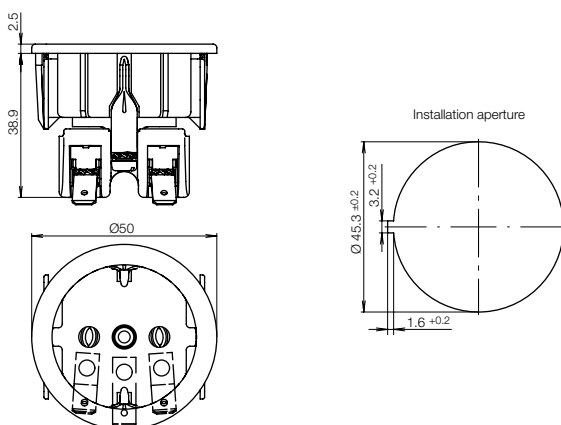
- installation depth 33.9 mm



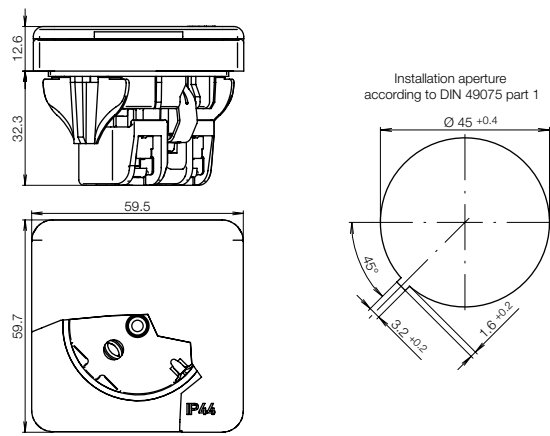
Built-in 45° SCHUKO socket outlet SNAP IN 1.3 - 2.2 mm



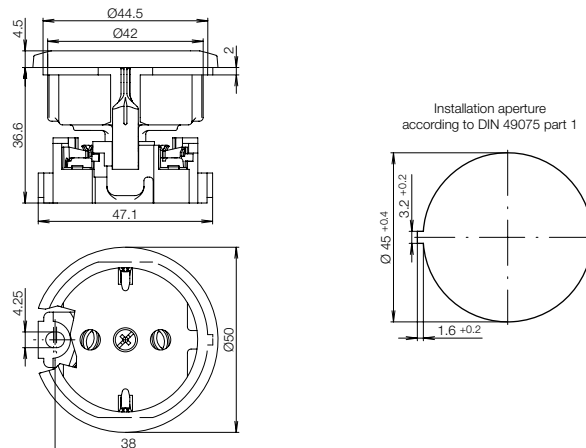
Built-in SCHUKO socket outlet with centre plate Ø 50 mm, SNAP IN 0.6 - 1.5 mm - with flat connection



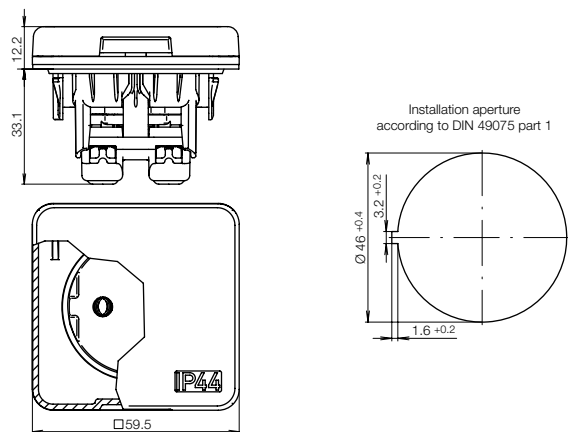
**Built-in SCHUKO socket outlet 45°
with hinged cover, SNAP IN 1.3 - 2.2 mm**



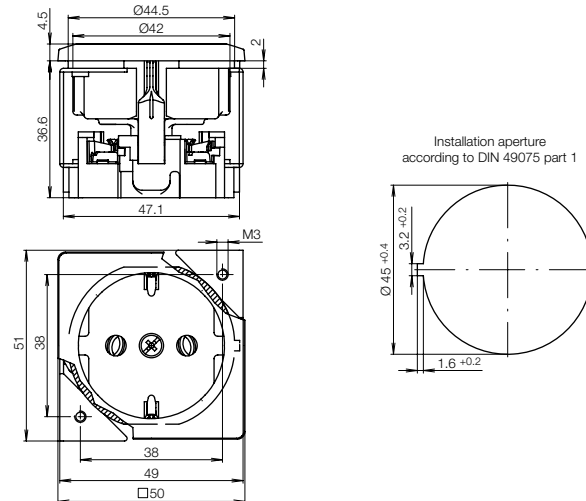
**Built-in SCHUKO socket outlet
with centre plate Ø 50 mm**



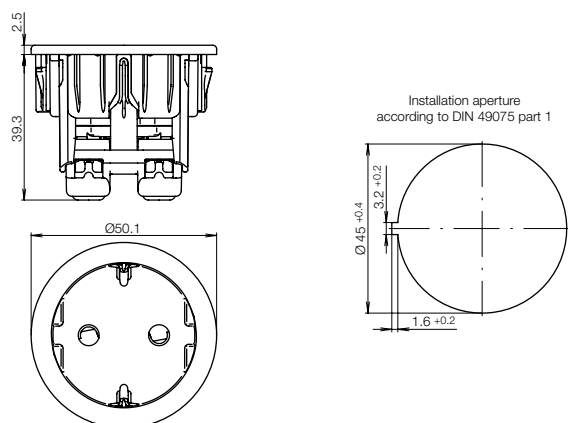
**Built-in SCHUKO socket outlet
with hinged cover 59.5 x 59.5 mm, SNAP IN, IP44
- for different built-in wall thicknesses**



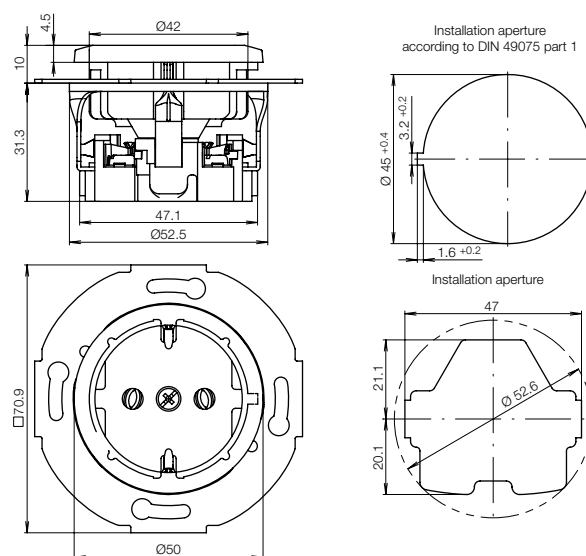
**Built-in SCHUKO socket outlet
with centre plate 50 x 50 mm and supporting angle**



**Built-in SCHUKO socket outlet
with centre plate Ø 50 mm, SNAP IN
- for different built-in wall thicknesses**

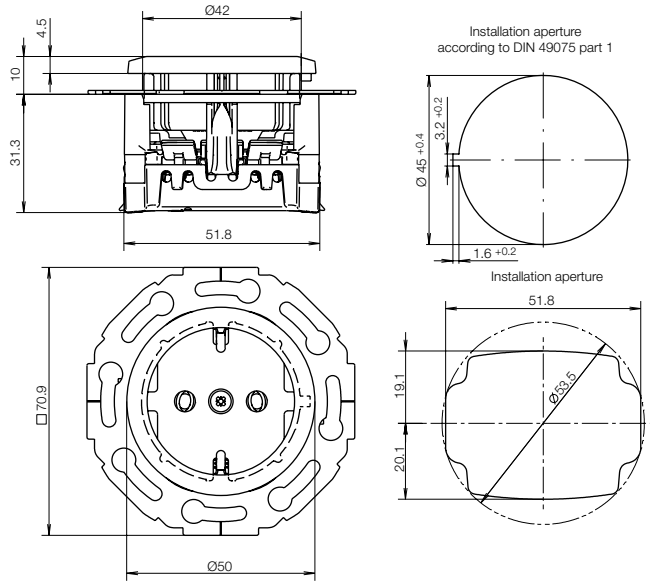


**Built-in SCHUKO socket outlet
with supporting ring, centre plate Ø 50 mm
- with screw terminals**

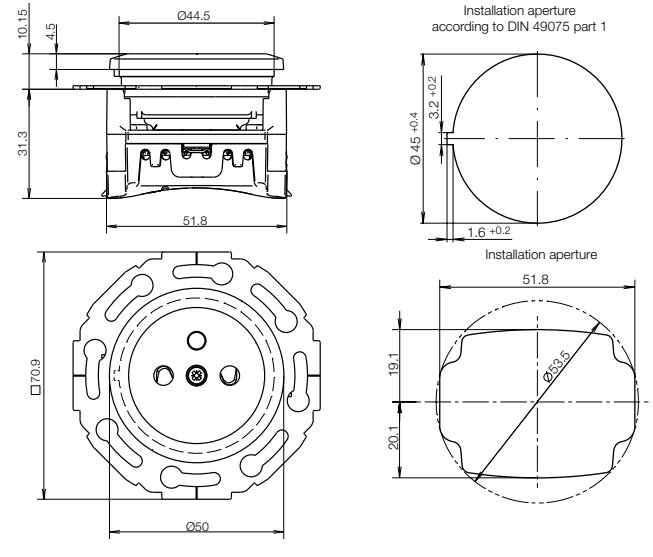


Built-in SCHUKO socket outlet with supporting ring, centre plate Ø 50 mm

- with plug-on terminals



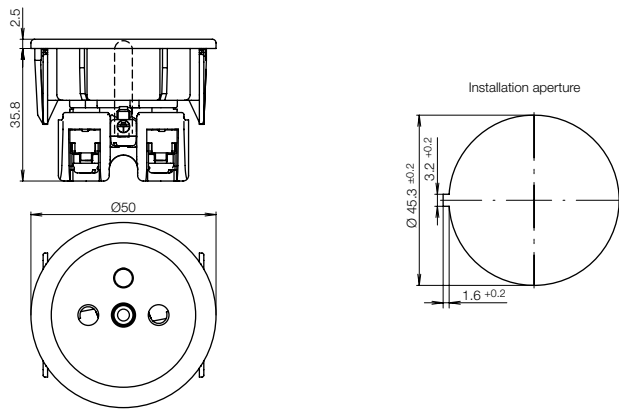
Built-in socket outlet with earthing pint and supporting ring, centre plate Ø 50 mm



Built-in socket outlets with earthing pin

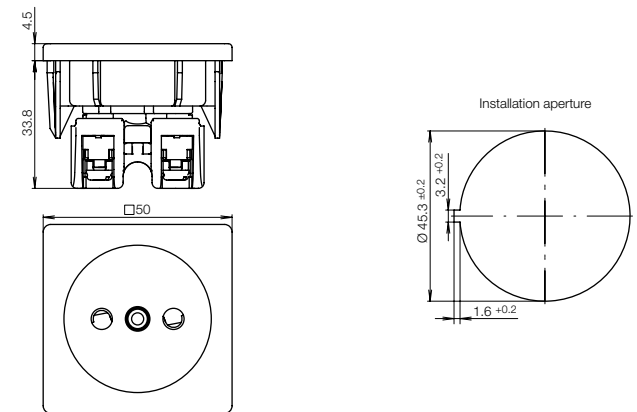
Built-in socket outlet with earthing pin and centre plate Ø 50 mm, SNAP IN

- for different built-in wall thicknesses



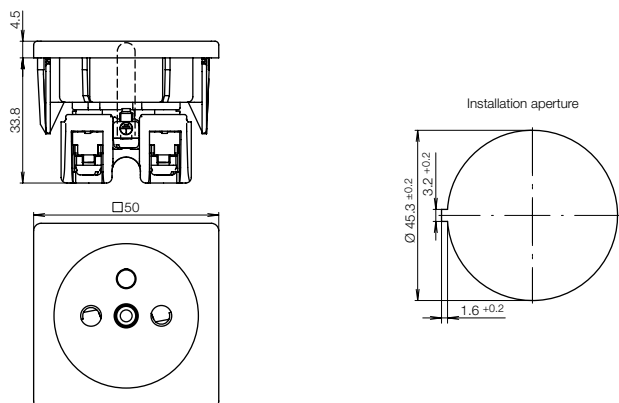
Built-in socket outlet without earthing contact

Built-in socket outlet without earthing contact, with centre plate 50 x 50 mm, SNAP IN 3 mm



Built-in socket outlet with earthing pin and centre plate 50 x 50 mm, SNAP IN

- for different built-in wall thicknesses



Test marks and administrative marks

- VDE test mark, all articles of the Berker range for which it is possible to issue the test mark, bear this mark.
- Netherlands
- Austria
- Norway
- France
- Denmark
- Italy
- Sweden
- Canada
- Belgium
- USA
- Poland
- Finland
- Switzerland
- ENEC stands for European Norms Electrical Certification. The number following the mark indicates the certifying body. Example: 10 stands for VDE
- Flame retardant according to VDE 0606 T1:1984-11, meets the requirements of the Association of Property Insurers for mounting on wood.
- All items in this catalogue which are subject to CE regulations bear the CE mark on their packaging.
- Determination of colour gradations of Deutsches Institut für Gütesicherung und Kennzeichnung e.V.

Trademark

Registered trademark of the SCHUKO-Warenzeichenverband e.V. (SCHUKO trademark association e. V.); identifies socket outlets according to DIN VDE 0620-1 and DIN 49440. The terminals are also suitable as connection terminals.

Degree of protection

- IP** (international protection) According to DIN 40050, IEC 60529, designates the degree of protection of a device against ingress of foreign bodies and moisture.
- IP44** Protection against contact of live parts with wires or similar, larger than 1 mm diameter and splash water from all directions. (contact-protected from 1 mm, splash-protected)
- Suitable for IP44, degree of protection IP44 is only available with the appropriate sealing accessories.

Application symbols

- Hollow-wall box
- AX** X = Fluorescent lamp rated current

Switching symbols

To simplify the planning by means of circuit symbols, we have additionally developed our own circuit symbols based on the standard or we have used symbols already existing on the market.

Some of the new underlying details:

- Scanning arm NO contact
- Scanning arm NC contact
- Scanning arms directed to each other corresponds to common input terminal
- Scanning arms directed away from each other corresponds to isolated input terminal
- Hinged covers

Socket outlets

- Socket outlet with earthing contact
- 2gang socket outlet with earthing contact
- Socket outlet with earthing contact and enhanced contact protection
- 2gang socket outlet with earthing contact and enhanced contact protection
- 3gang socket outlet with earthing contact and enhanced contact protection
- Socket outlet with earthing contact with hinged cover
- Socket outlet with earthing contact and hinged cover and enhanced contact protection
- Socket outlet without earthing contact
- Socket outlet without earthing contact with enhanced contact protection
- USB charging socket

Switches / Push-buttons / Dimmers

- On/off switch
- On/off switch, 2pole
- On/off switch 2pole illuminated/control switching
- Double on/off switch
- Series switch
- Change-over switch

- Change-over switch illuminated/control switching
- Intermediate switch
- Push-button, NO contact
- Push-button, NO contact illuminated/control switching
- Push-button 2 NO contacts with 1 input and 2 rockers
- Push-button 2 NO contacts with 2 separate inputs and 2 rockers
- Blind push-button
- 1 - 10 V rotary potentiometer with on/off switch

Data communications/telecommunications

- TV aerial socket
- FCC socket outlet
- HDMI socket outlet
- VGA socket outlet
- DVI socket outlet
- S-Video socket outlet
- Cinch socket outlet
- XLR socket outlet
- Jack socket
- USB and jack socket outlet
- USB socket outlet

Material characteristics

The majority of the products we supply comply with the REACH and RoHS requirements.

General notes

The technical specifications given here are not binding. The operating manual supplied with the products must be observed in all cases. Illustrations are not binding, especially with regard to colour, size, equipment, performance of products and switch and connection diagrams. We reserve the right to make technical and formal changes to our products in the interest of technical progress.