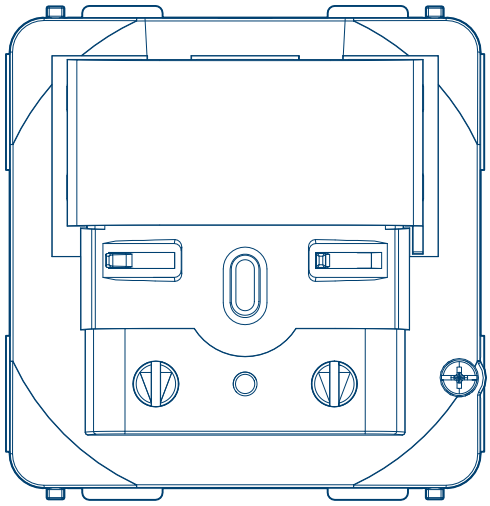
Operating and installation instructions

Switches and systems

Motion detectors



Motion detector 1.1 m
WAN1061
Motion detector 2.2 m
WAN1062

CE

hager

EN

1 Introduction

1.1 About these instructions

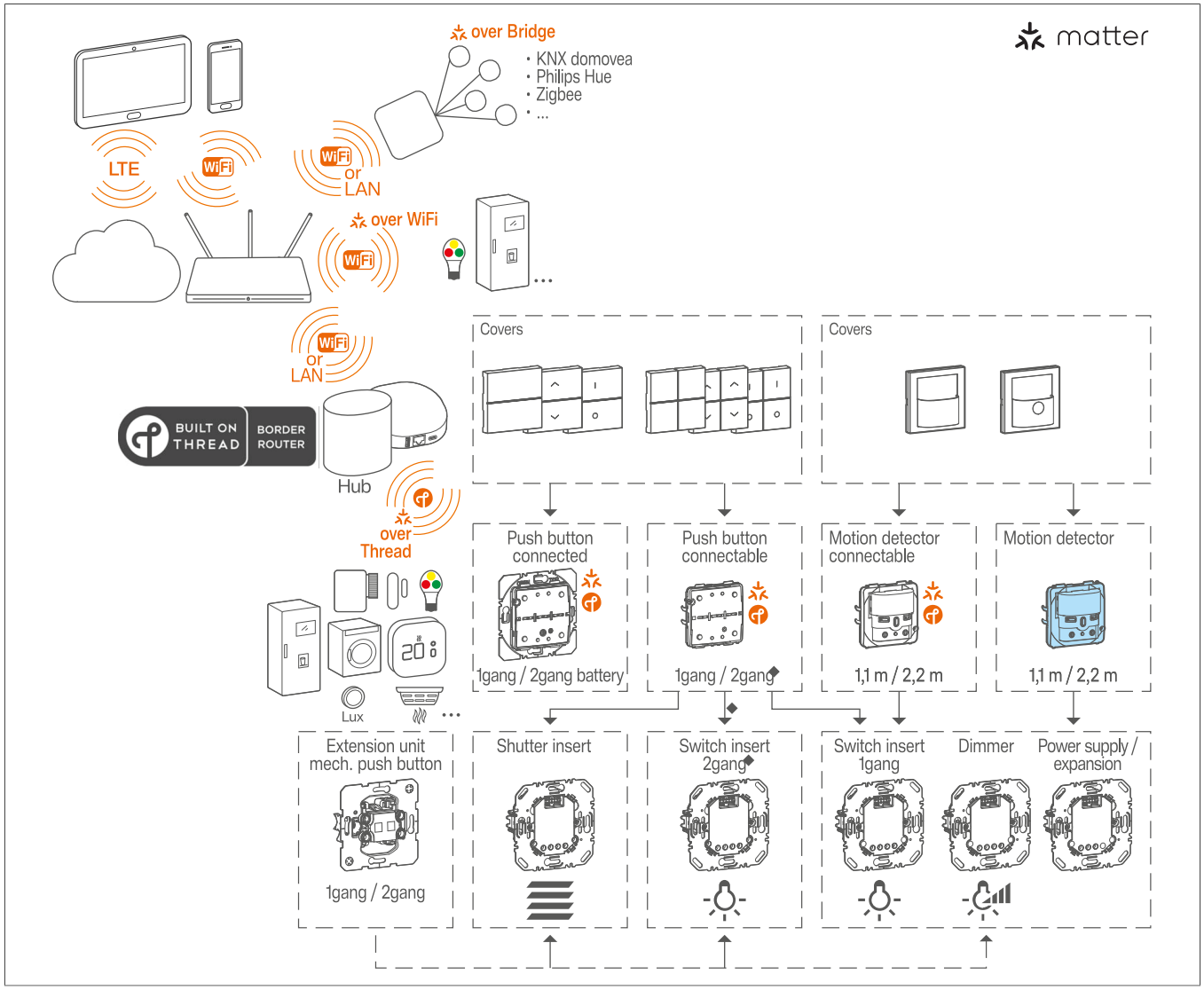
This manual describes the safe and proper installation and commissioning of the motion detector devices 1.1 m and 2.2 m. The electrical connection of the insert is described in the installation instructions.

The device is part of the modular electronics platform. The appliance can only be used when an end device is used.

In addition to the QuickGuide supplied with the product, the following information can be found:

- Detailed product characteristics
- Operation
- Commissioning

System overview



2 Safety instructions

Electrical devices must only be installed and assembled by a qualified electrician in accordance with the relevant installation standards, guidelines, regulations, directives, safety and accident prevention directives of the country.

Failure to comply with these installation instructions may result in damage to the device, fire or other hazards.

Due to its detection behaviour, the device is not suitable for use in burglary detection or alarm systems.

3 Scope of delivery

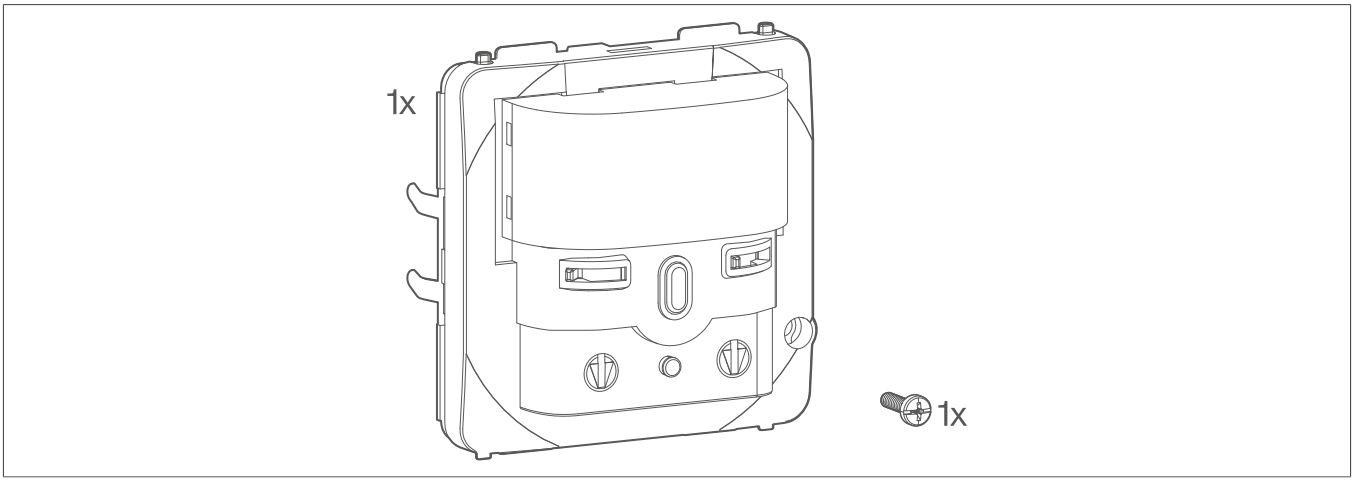


Fig. 1: Scope of delivery

4 Design and layout of the device

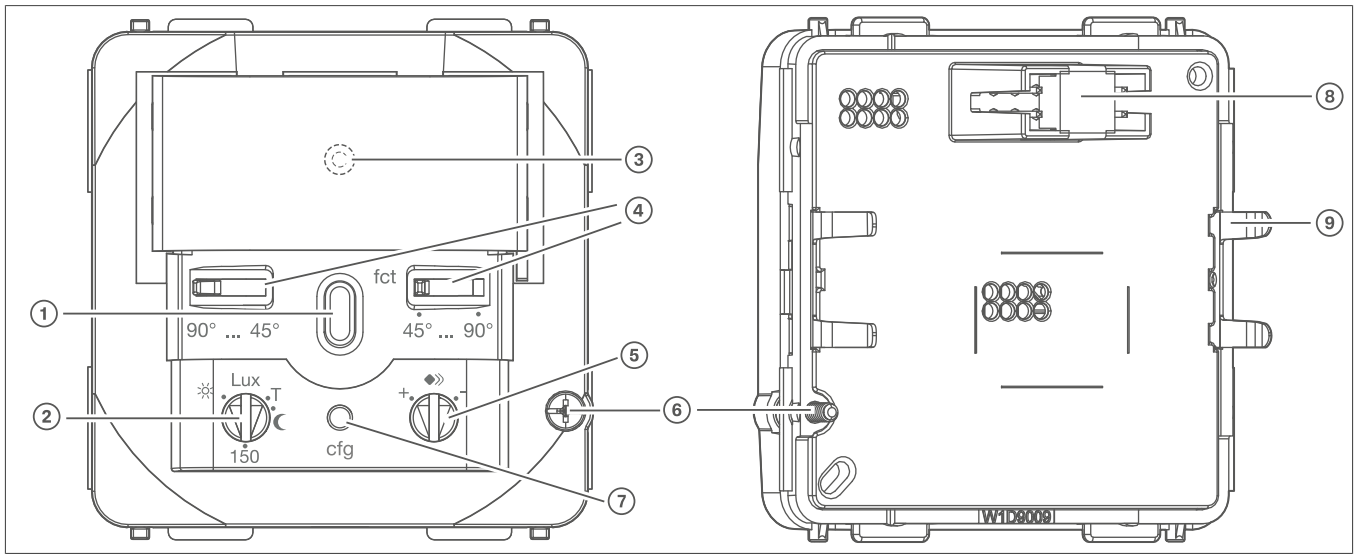


Fig. 2: Design and layout of the device

1. Function button (fct button)
2. Potentiometer for response brightness
3. Status LED
4. Adjuster for detection angle
5. Potentiometer for sensitivity
6. Fastening screw
7. Configuration button (cfg button)
8. Interface between insert/application module
9. Fixing clamps

5 Function

The motion detector is used for automatic switching of indoor lighting. It detects heat movements of people and animals using PIR sensors and can optionally combine this information with the measurement of ambient brightness. This will only turn on the lighting if movement is detected and the ambient brightness is below a defined threshold. The energy supply is provided by the power module.

5.1 Intended use

- Automatic switching of lighting depending on heat motion and ambient brightness
- Operation with a suitable insert
- Only suitable for use in indoor areas with no drip and no spray of water

5.2 Product characteristics

- Settings for expanding the detection area, control circuits
- Remotely controlled via the respective app
- Integrated button for selecting operating modes and special functions
- Lockable integrated button
- The operating modes Automatic, Permanent ON, Permanent OFF can be selected
- Display operating mode via LED
- Potentiometer for setting the response brightness and detection sensitivity
- Adjustable detection angle for adapting the detection area
- Additional adjustment of the response brightness via Teach-In function
- Optional extension unit operation via installation button

6 Operation

Note

The cover with button (WAN7040xx) is required for the following operation to be carried out by the end customer.

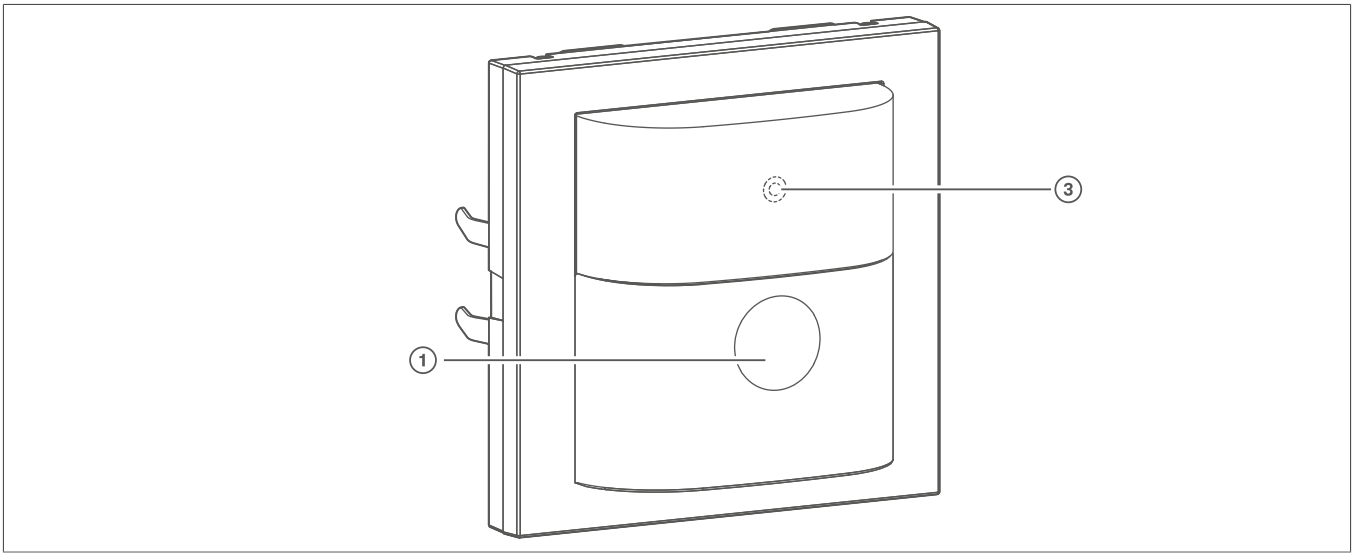


Fig. 3: Control element and status LED

① Function button (fct button)
③ Status LED

Operating concept

It is operated by pressing the function button on the motion detector:

- A short press of the button switches the operating modes. The operating mode is displayed via the status LED behind the cover of the motion detector.
- Keeping the button pressed activates special functions. The selection of special functions is supported by the status LED (see Fig. 4

Selecting the operating mode

- Briefly press the button repeatedly until the desired operating mode is selected.
  The status LED indicates the selected operating mode (see Tab. 1).

LED display		Description
Automatic mode		
/	OFF	Motion and brightness dependent switching of the load (on/off)
Blue	ON continuously	Load is permanently switched on.
Red	ON continuously	Load is permanently switched off.
Semi-automatic mode:[1]		
/	OFF	Manual switching of the load (on), then motion detection

Table 1: Display of operating modes via status LED

1 Semi-automatic mode is activated via the cfg button.

Special functions

Note

If no further actions are performed within the next 15 minutes, the device switches to normal operation.

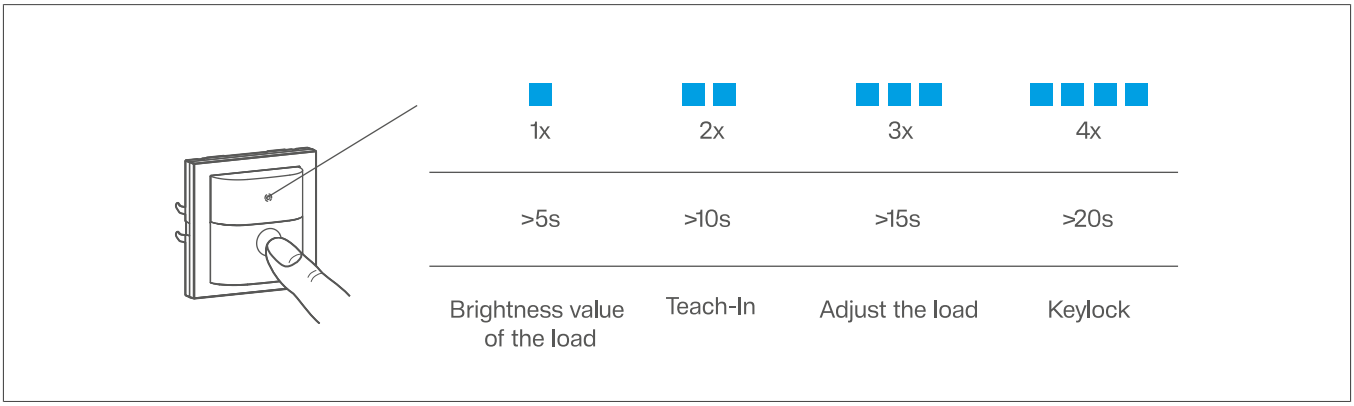


Fig. 4: Selection of special functions and status LED

Adjust the brightness value of the load

Note

Only possible with a 1-gang power module for dimmer (WDN2030).

The brightness value of the load can be changed via an extension unit .

☑ The load is switched on.

- Press and hold the button for more than 5 seconds, until the status LED flashes 1x blue.
- Using the extension unit, dim the connected load up or down with a long press of a button .

  The set brightness value is stored and the connected load reaches the desired brightness when motion is detected.

Setting response brightness via Teach-In function

The response brightness is the brightness value stored in the motion detector. When the brightness falls below this value, the motion detector switches the connected load on if movement is detected. With the Teach-In function, the current ambient brightness is stored as the response brightness.

☑ The load is switched off.

- Press and hold the button for more than 10 seconds, until the status LED flashes 2x blue.

  The setting is confirmed by the status LED flashing blue once.

  The motion detector detects the current ambient brightness and stores it as response brightness.

Note

Adjusting the response brightness via the Teach In function or the brightness potentiometer has equal priority. Teach-In overwrites the response brightness set on the brightness potentiometer. If the setting is made again via the potentiometer, the Teach-In value will be overwritten.

Adjust the load (only on the dimmer insert)

If the switching/dimming performance of a universal dimmer insert is not satisfactory after commissioning, load setting may need to be performed.

Note

A load adjustment must be performed again after each change impacting the load.

☑ The load is switched off.

- Press and hold the cfg button for more than 15 seconds, until the status LED flashes 3x blue.

  The connected load flashes once. The device is in selection mode.
- Briefly press the button several times to select the desired setting mode.

Status LED	Setting mode	Duration and confirmation of the load setting [1]	Information for use
1 x	Factory load setting	Settings duration: approx. 30 sec. **Note**: Load switching/dimming phases may occur during the automatic settings process. Finally, the device returns to normal operation.	Factory setting with automatic load recognition. If the switching behaviour is not satisfactory, the selection mode must be restarted and the appropriate option selected.

Table 2: Adjustment mode for adjusting the load on a dimmer insert

Status LED	Setting mode	Duration and confirmation of the load setting [1]	Information for use
2 x	LED mode 1 (phase cut-on)	Settings duration: approx. 5 sec. Finally, the device returns to normal operation.	Recommended for lower 230 V LED loads up to max. 60 W if the switching/dimming behaviour is unsatisfactory after automatic load setting.
3 x	LED mode 2 (phase cut-on)	Settings duration: ≤ 50 sec. **Note**: Load switching/dimming phases may occur during the automatic settings process. Finally, the device returns to normal operation.	Recommended for higher 230 V LED loads from 50 W, which can be operated in the phase cut-on. Observe manufacturer's data.
4 x	Fine setting of minimum brightness	5 predefined minimum brightness levels are repeatedly cycled through for 2.5 seconds each (3 cycles). • Once the connected load shows a satisfactory minimum brightness, confirm with a short press of a button. Finally, the device returns to normal operation.	To optimise the switch-on behaviour, or if the load flickers in the lower dimming range, the minimum brightness setting can be manually adjusted.

Table 2: Adjustment mode for adjusting the load on a dimmer insert

1 The load flashes for confirmation at 50% brightness.

- Within 10 seconds, press and hold the cfg button for > 2 seconds to confirm the setting.

Keylock

Note

Keylock is deactivated in the factory setting.

- Press and hold the button for more than 20 seconds, until the status LED flashes 4x blue.
- Briefly press the button to switch between the required settings (see Tab. 3).

Status LED		Setting
Blue	1x flash	Keylock disabled
Blue	2x flashes	Keylock activated

Table 3: Keylock status LED

- Within 10 seconds, press and hold the cfg button for > 2 seconds to confirm the setting.

Switch on the lighting via the push-button extension unit

Optionally, the lighting can be switched on via a mechanical push-button extension unit (see Tab. 4).

Note

For extension unit operation, the lighting is switched on independently of the set brightness threshold.

When using the dimmer inserts, the last set brightness level will be saved as the switch-on brightness level.

Dimming status	Operation button	Performance of the insert
Motion detector on power module for switch (WDN2010)		
OFF	Short press	Load is switched on for the set delay time
ON	Short press	Extension of switch-on time by the set delay time
Motion detector on power module for dimmer (WDN2030)		
OFF	Short press	Load is switched on to the switch-on brightness level for the set delay time
ON	Short press	Extension of switch-on time by the set delay time at the same brightness

Table 4: Operation via push-button extension unit

7 Information for qualified electricians

7.1 Location for installation

Selecting the location for installation

The performance of the system can be optimised by selecting the best possible mounting location:

- Maintain a minimum distance of approx. 1 m between the transmitter and the corresponding receiver.
- A minimum distance of approx. 0.5 m must be respected from electronic devices that emit high-frequency signals, such as computers, electronic transformers or microwave devices.

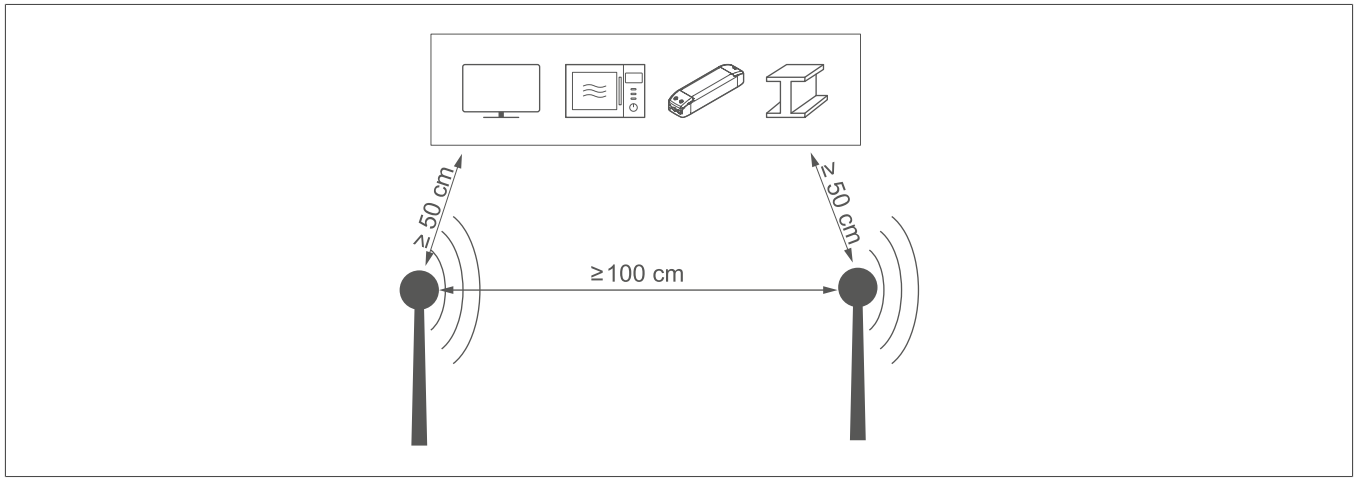


Fig. 5: Note on minimum distance

- Take material penetration into account (see Tab. 5).

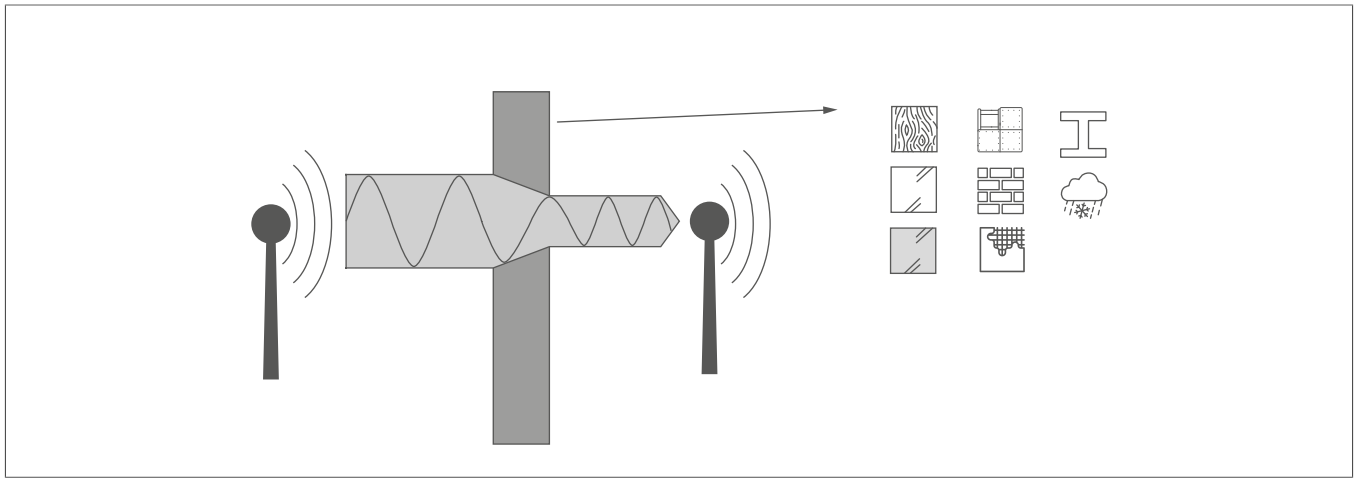


Fig. 6: Note on material penetration

Symbol		Material	Degree of material penetration
		Wood, plaster, plasterboard, uncoated glass	approx. 90 %

Table 5: Material penetration

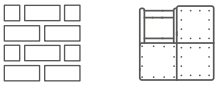
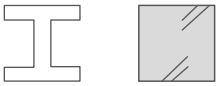
Symbol	Material	Degree of material penetration
	Brick, chip board	approx. 70 %
	Reinforced concrete, underfloor heating	approx. 30 %
	Metal, metal grids, aluminium laminates, coated glass	approx. 10 %
	Rain, snow	approx. 1 ... 40 %

Table 5: Material penetration

Note

Installing the device on or close to metal surfaces may cause interferences with the radio transmission.

- Observe the motion orientation.

Note

A distinction is made between ‘direct approach’ and ‘transverse motion’. Motions transverse to the motion detector can be detected better than motions toward the motion detector.

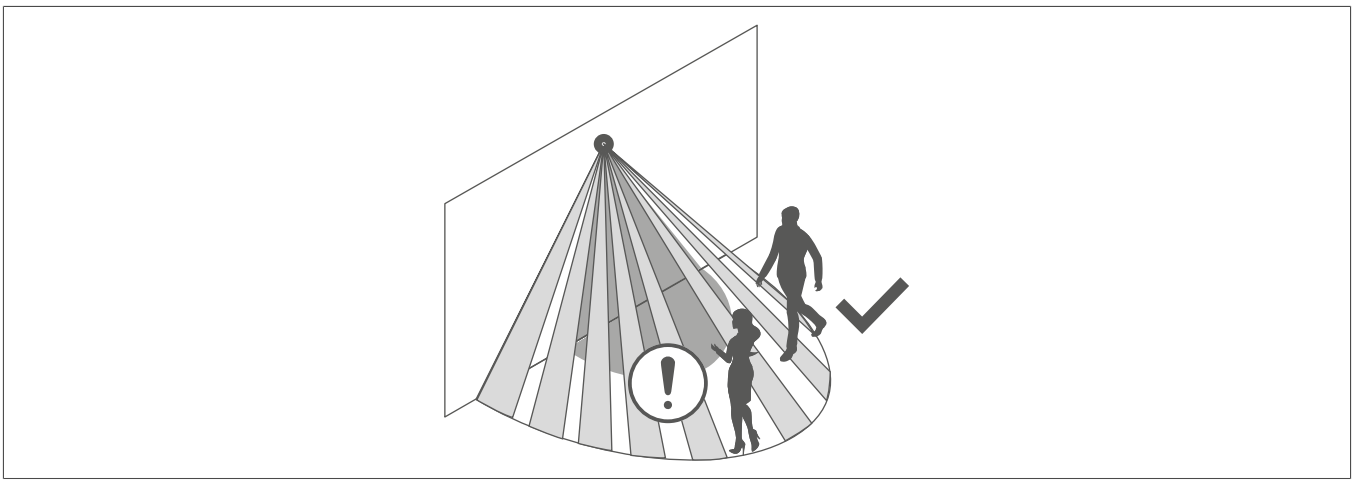


Fig. 7: Note on motion orientation

- Select an installation location that is free of vibration.
- Avoid sources of interference in the detection area.

Note

Vibrations can cause undesired switching.

Sources of interference, e.g. heating elements, ventilation systems, air conditioners and lamps that are cooling down can cause undesired switching. To avoid interferences, the detection angle can be restricted (see Restriction of the detection area).

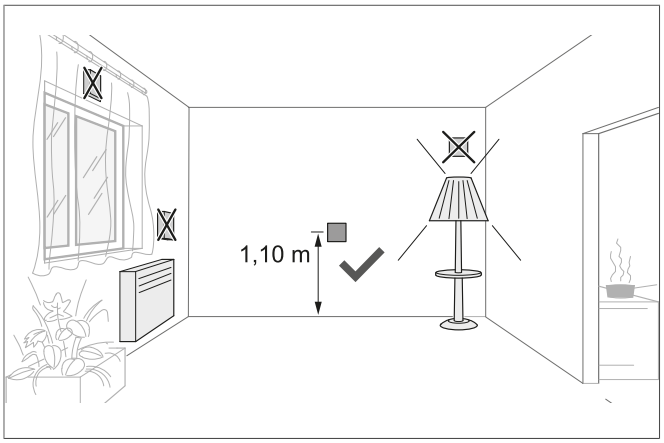


Fig. 8: Avoid possible sources of interference 1.1 m.

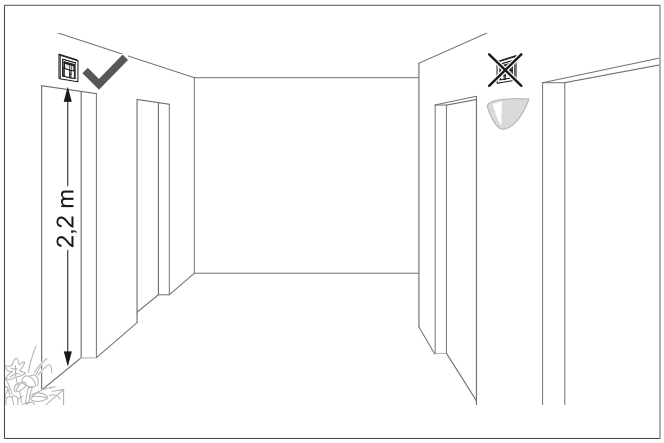


Fig. 9: Avoid possible sources of interference 2.2 m.

7.2 Installation and electrical connection

Installing the device

Danger

Electric shock when live parts are touched!

An electric shock can lead to death!

- Disconnect all connection cables before working on the device and cover any live parts in the area!

☑ The appropriate insert is mounted.

Note

Information on electrical connection of the insert can be taken from the operating instructions for the insert.

1. Attach the application module together with the frame to a suitable insert and establish the connection between the insert and the application module via the plug-in interface.

   As soon as voltage is supplied to the application module, the status LED indicates the compatibility with the insert used.

Status LED	Comment
Blue flashing for 5 seconds	Button is compatible for use
Alternate blue and red flashes for 5 s.	Button is compatible for use but configured for another use
Flashing red for 5 s.	Button is not compatible with insert

Table 6: Compatibility table

2. Establish dismantling protection using the screw supplied.
3. After Commissioning, click the cover onto the application module.

7.3 Commissioning

Overview of operation and adjustment elements

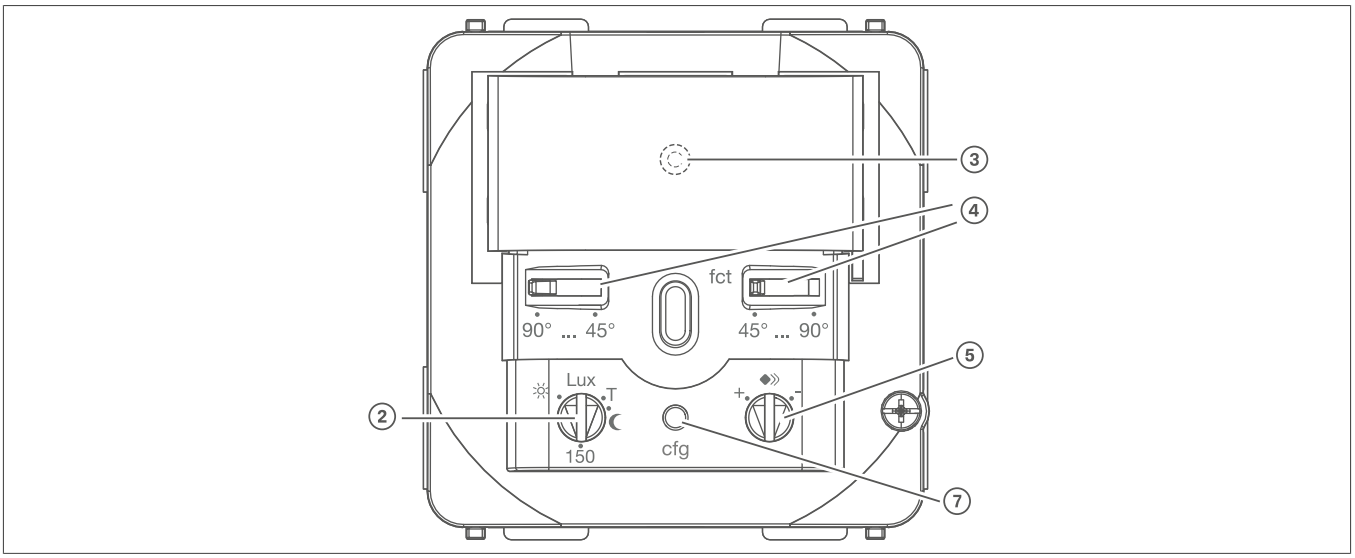


Fig. 10: Operation and adjustment elements on the application module.

(2) Potentiometer for response brightness
(3) Status LED
(4) Adjuster for detection angle
(5) Potentiometer for sensitivity
(7) Configuration button (cfg button)

Setting the sensitivity (5)

Detection is factory-set to maximum sensitivity. In the event of frequent incorrect detections, the sensitivity can be reduced.

- Turn the sensitivity potentiometer (◆)) to the desired position.

Setting the acquisition angle (4)

The detection angle can be restricted for the right side and for the left side using each adjuster between 45° and 90°. This allows the detection angle to be set between 90° and 180°).

- Use the adjusters to set the detection angle for each side.

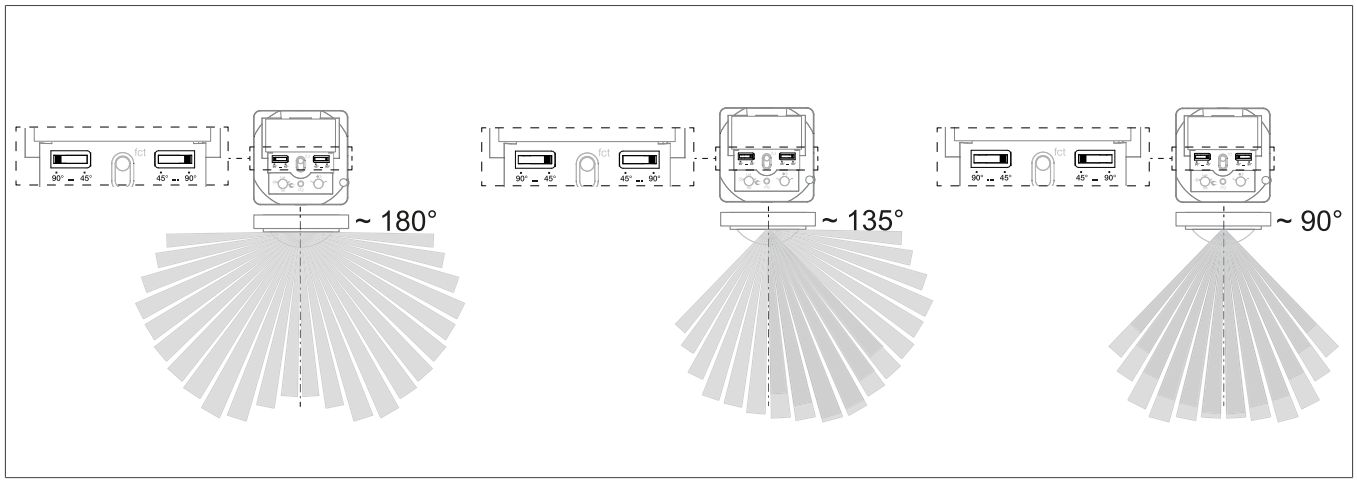


Fig. 11: Setting the acquisition angle

Setting the detection performance

Test mode must be used to test the detection performance. In test mode, the motion detector operates independently of brightness. Each detection switches the lighting and the status LED on for 3 seconds. The motion detection will then be deactivated for 2 seconds.

☑ The motion detector is connected and ready for operation.

- Setting the test mode. To do this, set the response brightness potentiometer to the **T** position.
- Exit the detection area and observe the switching performance.
  If the motion detector switches on without movement in the detection field, sources of interference are present (see Selecting the location for installation) or the sensitivity is set too high.
- Reduce the sensitivity if necessary and eliminate sources of interference by adjusting the detection angle or removing them.
- Check the detection area using a detection test and adjust if necessary.

Note

If the detection area is too small, it can be extended via motion detector extension units.

Setting the response brightness (2)

The response brightness is the brightness value saved in the motion detector; when this value is undershot the motion detector switches the connected load if movements are detected. The response brightness can be set between approx. 5 (☾) to 150 Lux (factory setting) to daytime operation (☼). The symbol stands for independent of brightness switching. The response brightness can be variably adjusted in the intermediate areas.

Note

To control the lighting in stairwells in accordance with DIN EN12464-1, 2003-3, select the 150 Lux potentiometer setting.

- Turn the response brightness potentiometer to the desired position.

Note

To save the current ambient brightness as the response brightness, use the Teach-In function (see Setting response brightness via Teach-In function).

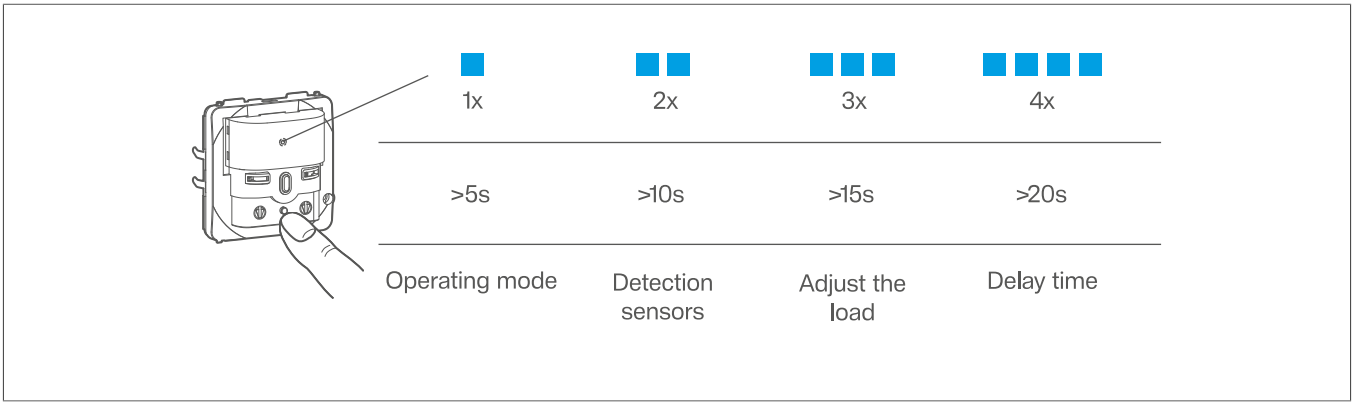


Fig. 12: Selection of special functions and status LED

Operating mode

- Press the cfg button for more than 5 seconds, until the status LED flashes 1x blue.
- Select between the functions by briefly pressing the cfg key.

Status LED		Operating mode	Description
Blue	1x flash	Automatic mode	Motion and brightness dependent switching of the load (on/off)
Blue	2x flashes	Semi-automatic	Manual switching of the load (on), then motion detection

Table 7: Display of operating modes via status LED

- Within 10 seconds, press and hold the cfg key for > 2 seconds to confirm the setting.

Adjust the detection sensors

The sensing sensors on the left and right side can be activated either together or individually.

Note

Both detection sensors are activated according to the factory setting.

- Press and hold the cfg button for more than 10 seconds, until the status LED flashes 2x blue.
- Select between sensor modes by briefly pressing the cfg button.

Status LED		Sensor mode
Blue	1x flash	Full detection
Blue	2x flashes	Left side activated
Blue	3x flash	Right side activated

- Within 10 seconds, press and hold the cfg key for > 2 seconds to confirm the setting.

Adjust the load (only on the dimmer insert)

If the switching/dimming performance of a universal dimmer insert is not satisfactory after commissioning, load setting may need to be performed.

Note

A load adjustment must be performed again after each change impacting the load.

☑ The load is switched off.

- Keep the button pressed for more than 15 seconds, until the status LED flashes 3x blue.
  The connected load flashes once. The device is in selection mode.
- Briefly press the cfg button several times to select the desired setting mode.

Status LED	Setting mode	Duration and confirmation of the load setting [1]	Information for use
1 x	Factory load setting	Settings duration: approx. 30 sec. **Note**: Load switching/dimming phases may occur during the automatic settings process. Finally, the device returns to normal operation.	Factory setting with automatic load recognition. If the switching behaviour is not satisfactory, the selection mode must be restarted and the appropriate option selected.
2 x	LED mode 1 (phase cut-on)	Settings duration: approx. 5 sec. Finally, the device returns to normal operation.	Recommended for lower 230 V LED loads up to max. 60 W if the switching/dimming behaviour is unsatisfactory after automatic load setting.
3 x	LED mode 2 (phase cut-on)	Settings duration: ≤ 50 sec. **Note**: Load switching/dimming phases may occur during the automatic settings process. Finally, the device returns to normal operation.	Recommended for higher 230 V LED loads from 50 W, which can be operated in the phase cut-on. Observe manufacturer's data.
4 x	Fine setting of minimum brightness	5 predefined minimum brightness levels are repeatedly cycled through for 2.5 seconds each (3 cycles). • Once the connected load shows a satisfactory minimum brightness, confirm with a short press of a button. Finally, the device returns to normal operation.	To optimise the switch-on behaviour, or if the load flickers in the lower dimming range, the minimum brightness setting can be manually adjusted.

Table 8: Adjustment mode for adjusting the load on a dimmer insert

1 The load flashes for confirmation at 50% brightness.

- Within 10 seconds, press and hold the cfg key for > 2 seconds to confirm the setting.

Setting the delay time

The delay time defines how long the connected load remains switched on after detected movement before it automatically switches off.

Note

By default factory setting, the delay time is 3 minutes.

- Keep the button pressed for more than 20 seconds, until the status LED flashes 4x blue.
- Switch between delay times by briefly pressing the cfg button (see Tab. 9).

Status LED	1x flash	2x flashes	3x flashes	4x flashes	5x flashes	6x flashes	7x flashes
Delay time	1 s	30 s	1 min	3 min[1]	5 min[1]	15 min[1]	30 min[1]

Table 9: Delay time

1 After the delay time elapses the lighting will be dimmed to 50% of the switch-on brightness-level and will remain at this brightness level for 30 s (switch-off pre-warning). Any motion detected during the switch-off pre-warning restarts the delay time and restores the switch-on brightness level.

- Within 10 seconds, press and hold the cfg key for > 2 seconds to confirm the setting.

Resetting to factory settings

- Press and hold the cfg button for > 40 seconds until the status LED lights up blue.
- Within 10 seconds, press and hold the cfg key for > 2 seconds to confirm the setting.

  All settings made locally on the device are reset.

Complete commissioning

When commissioning is complete, the cover must be properly attached to the end device (see Installation and electrical connection). A cover with control element must be selected for a local operating function on the device (WAN7040xx).

7.4 Dismantling

Danger

Electric shock when live parts are touched!

An electric shock can lead to death!

- Disconnect all connection cables before working on the device and cover any live parts in the area!

Note

If necessary, perform a Matter reset beforehand.

- Remove the cover from the end device.
- Loosen the screw.
- Remove the end device.

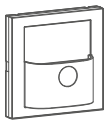
8 Appendix

8.1 Accessories

Compatible inserts

	WDN2010	Power module for switch, 1-gang 10 A.
	WDN2030	Power module for dimmer, 1-gang
	WDN2061	Power supply module - extension

Correct covers

	WAN7030xx	Cover without button
	WAN7040xx	Cover with button

8.2 Technical data

Junction	Attach to suitable insert (see Accessories)
Power supply	via end device
Response value luminosity	approx. 5 ... 150 lux (∞)
Sensitivity	approx. 10 ... 100 %
Detection angle	approx. 90 ... 180°
Detection range (1.1 m)	approx. 12 x 16 m
Detection range (2.2 m)	approx. 8 x 12 m
Frequency transmission	2400-2483.5 MHz
Transmission power	Max. 100 mW
Receiver category	2
Transmitter duty cycle	0.1 %
Degree of protection	IP 20
Relative humidity	0 ... 65 % (without condensation)
Ambient temperature	-5 to +45 °C
Storage/transport temperature	-20 to +60 °C
Mounting orientation	Top plug-in interface

8.3 Troubleshooting

Performance after mains interruption

Mains interruption shorter than 0.2 s:

The function is not impaired.

Mains interruption longer than 0.2 s:

There is no function during the mains interruption.

The current configuration is saved in non-volatile memory.

Return of mains supply

The application module carries out an initialization phase of approx. 5 s. During this time, the lighting will be switched on. Motion detection starts thereafter. If no motion is detected during the first 5 s, the lighting is switched off. The previously saved configuration is loaded from the memory of the device. During this period, local operation via the button or extension unit can be used.

8.4 EU Declaration of Conformity

Berker GmbH & Co. KG hereby declares that the radio equipment type WAN1061, WAN1062 complies with Directive 2014/53/EU. The complete text of the EU declaration of conformity is available at the following Internet address: hager.com

8.5 Disposal note

Disposal note

Correct disposal of this product (electrical waste).

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its documentation indicates that it should not be disposed of with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this device from other types of waste. Recycle the device responsibly to promote the sustainable reuse of material resources.

Household users should contact either the dealer where they purchased this product, or their local government office, for details of where and how they can take this device for environmentally safe disposal.

Commercial users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial waste for disposal.

Berker GmbH & Co. KG
Zum Gunterstal

66440 Blieskastel
Germany

T +49 6842 945 0
F +49 6842 945 4625
info@hager.com
hager.com

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