

Radio motion detector surface-mounted
Order-No. : 174 01 09

Operation- and Assembly Instructions

1 Safety instructions

Electrical equipment may only be installed and fitted by electrically skilled persons.

Serious injuries, fire or property damage possible. Please read and follow manual fully.

The radio communication takes place via a non-exclusively available transmission path, and is therefore not suitable for safety-related applications, such as emergency stop and emergency call.

Risk of explosion! Do not throw batteries into fire.

Risk of explosion! Do not recharge batteries.

These instructions are an integral part of the product, and must remain with the end customer.

2 Device components

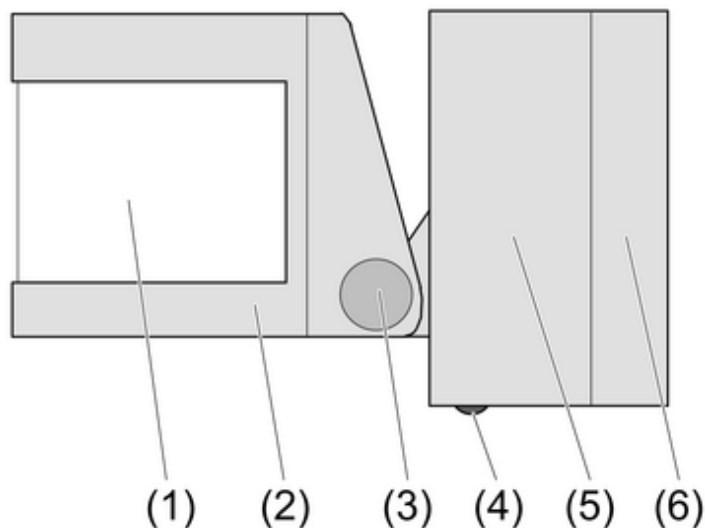


Figure 1

- (1) Sensor window
- (2) Sensor head
- (3) Turning knuckle
- (4) red LED
- (5) Connection socket
- (6) Base plate

3 Function

System information

By statute, the transmitting power, the reception characteristics and the antenna cannot be changed.

The device may be operated in all EU and EFTA countries.

The declaration of conformity can be viewed on our website.

The range of a radio system from the transmitter to the receiver depends on various circumstances.

The range of the system can be optimised by selecting the optimal installation location, taking into account the structural circumstances.

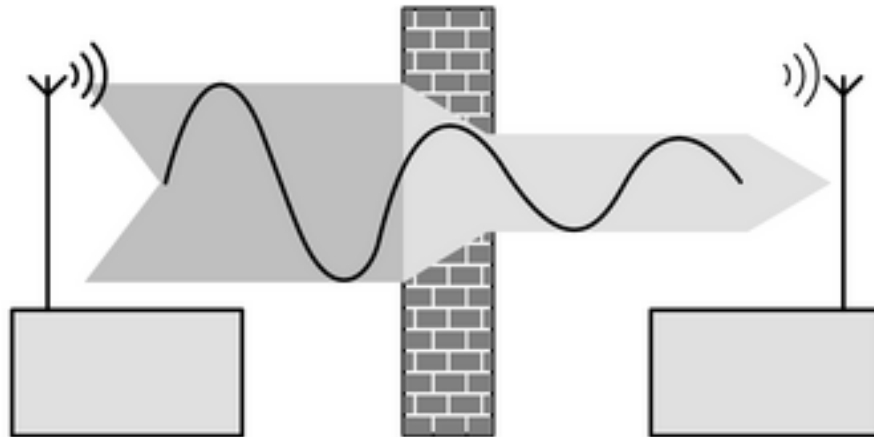


Figure 2: Reduced range due to structural obstacles

Example of penetration of various materials:

Material	Penetration
Wood, Plaster, Plasterboard	approx. 90%
Brick, Chipboard	approx. 70%
Reinforced concrete	approx. 30%
Metal, Metal grid	approx. 10%
Rain, Snow	approx. 1-40%

Intended use

- Motion detector for automatic switch-on of lighting depending on heat motions and ambient brightness
- Operation in conjunction with radio power pack and suitable radio actuators
- Surface-mounting

i The motion detector is not secured against tampering, and is therefore not suitable for use in alarm systems.

Product characteristics

- The motion detector detects heat motions caused by people, animals and inanimate objects.
- Day operation: Motion detection is switched-off. Motion detector measures the lightning strength every 8 seconds. If a value under 80 lux is determined, then Night mode is started after a locking time of approx. 1 minute.
- Night mode: If motion is detected, the motion detector measures the lighting strength, evaluates it and sends a radio telegram to the receiver. If there is a lighting strength of over 200 lux, the motion detector switches to Day mode.
- Switch-on time settable with radio power pack. If radio switching or dimming actuators are used, then dependent on the switch-on time set in the actuator.
- Brightness value can be set in the radio power pack
- Detection area can be limited with push-on cover.
- Battery-powered device

4 Information for electrically skilled persons

4.1 Fitting and electrical connection



CAUTION!

Heat radiation too high.

Destruction of the sensors.

Align the device so that no direct sunshine hits the sensor window.

Do not place the device in the sun.

Selecting the installation location

The motion detector possesses a tight, semi-circular detection area with 3 levels and 144 switching segments (Figure 3).

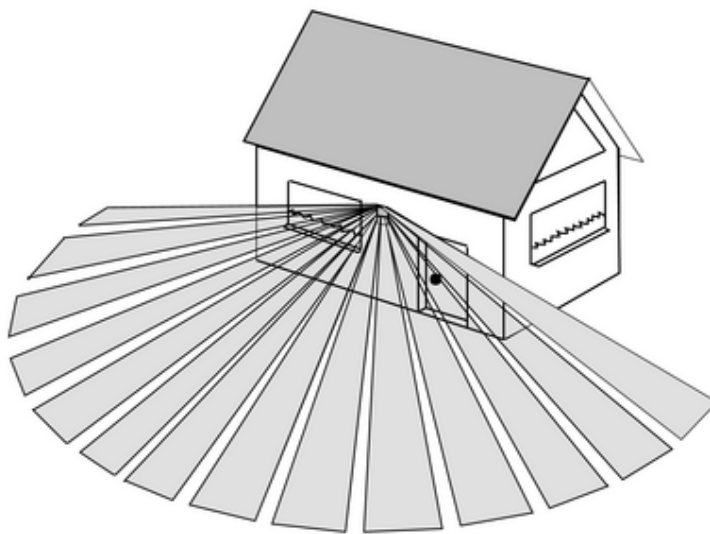


Figure 3: Motion detector detection area

Several basic principles must be taken into account when selecting the installation location.

- Select a vibration-free installation location; vibrations can lead to unwanted switching.

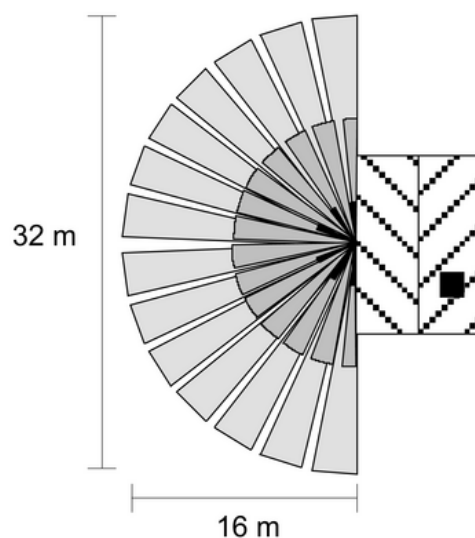


Figure 4: Detection area, top view

Size of the detection area: approx. 16 m x 32 m. The grey values in the figure (Figure 4) indicated the 3 monitoring levels.

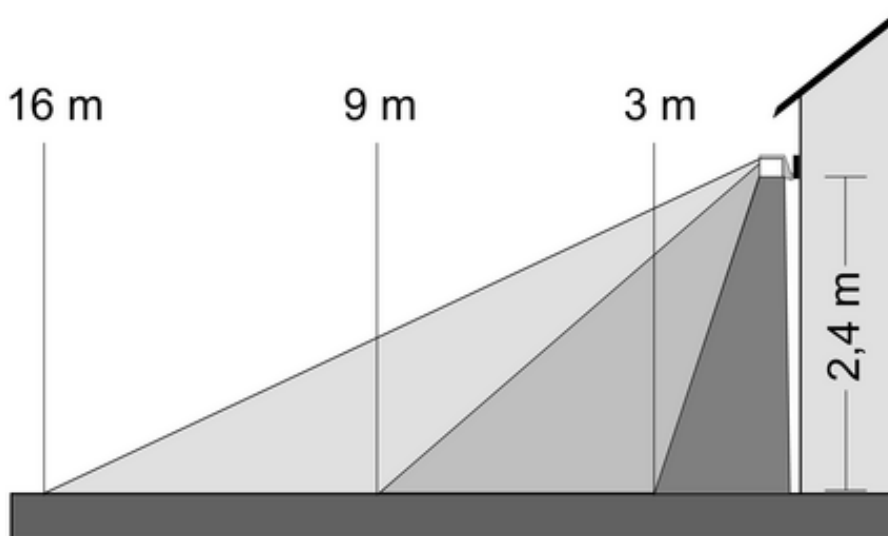


Figure 5: Detection area, side view

The 3 monitoring levels are defined as follows (Figure 5):

Close range	approx. 0 m - 3 m
Mid range	approx. 3 m - 9 m
Long range	approx. 9 m - 16 m

The specified range relates to an installation height of 2.40 m, sensor head not tilted, direction of movement sideways to motion detector and sufficient temperature difference between body and environment.

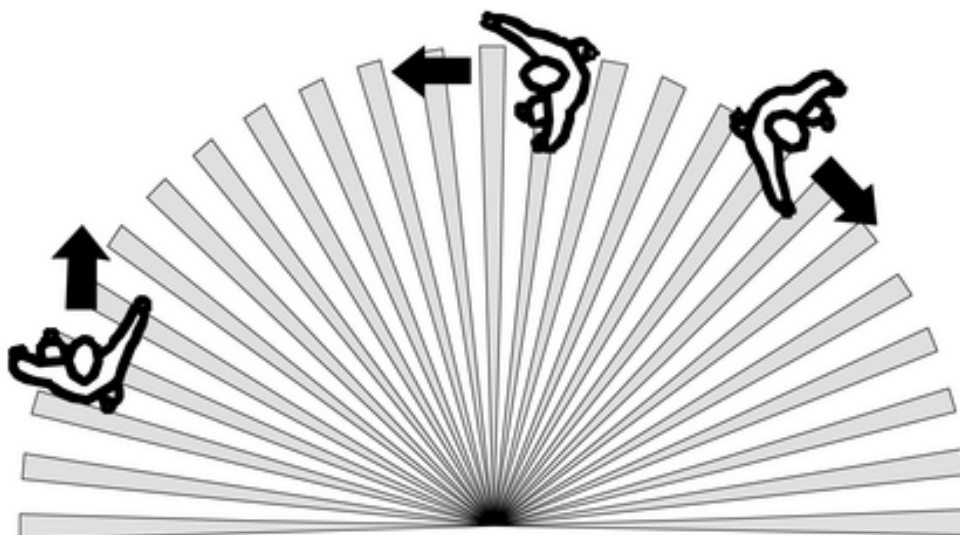


Figure 6: Installing the motion detector laterally to the direction of movement

For optimum range, install the motion detector at a height of 2.40 m and to the side of the walking direction, otherwise range restrictions may be incurred (Figure 6).

- Avoid sources of interference in the detection area, e.g. animals, branches moved by the wind, motor vehicles or lamps. If necessary, limit the detection area with the supplied push-on cover (see chapter Limiting the detection area).

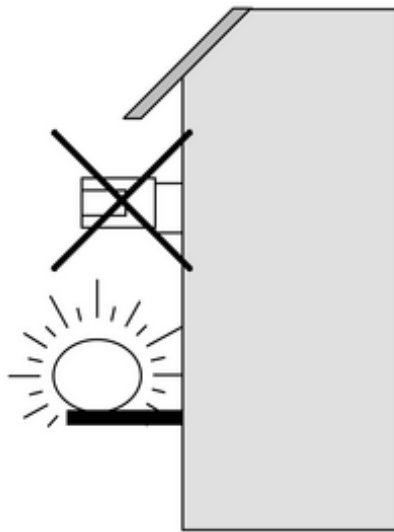


Figure 7

- Do not install the motion detector directly above a luminaire. A cooling lamp could be detected as a heat change causing additional switch-on (Figure 7).
- Do not touch the sensor window.

Install the motion detector on the wall

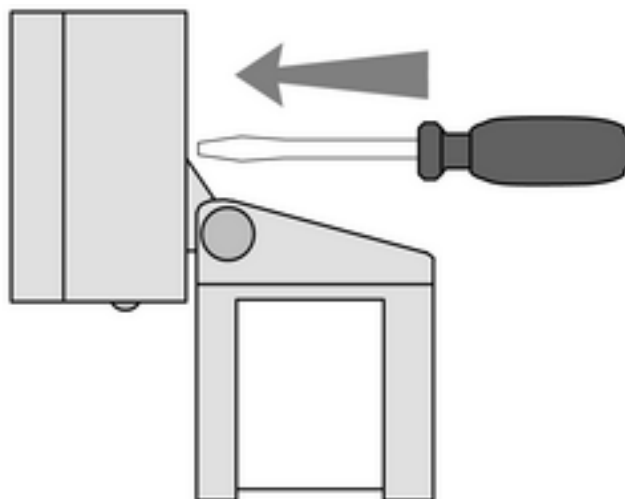


Figure 8

- Tilt the sensor head downwards. Slacken the screw on the connection socket (5) (Figure 8).
- Remove the base plate (6) from the connection socket.

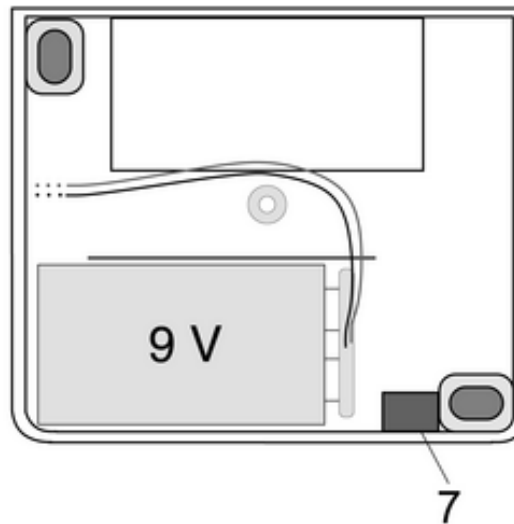


Figure 9

- Open the condensation water hole (7) in the base plate, except in case of installation in dusty rooms (Figure 9).

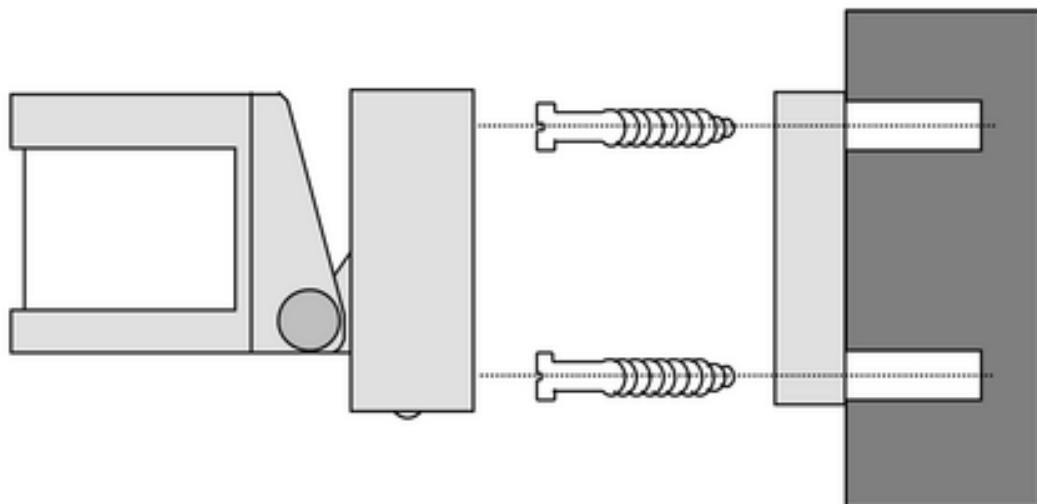


Figure 10

- Fasten the base plate (6) with 2 screws (Figure 10).
- Connect the battery. Ensure correct polarity.
Motion detector is in the walking test/teach mode (see chapter Teaching the motion detector in the radio receiver).
- Run the battery cable (10) around the screw dome (11) (see chapter Changing the battery). Ensure that no cables are squashed.
- Place the connection socket (5) on the base plate and screw it tight.
- After installation, remove the attached cover panel. It is used as transport and installation protection and to limit the detection area.

Mounting the motion detector under the ceiling

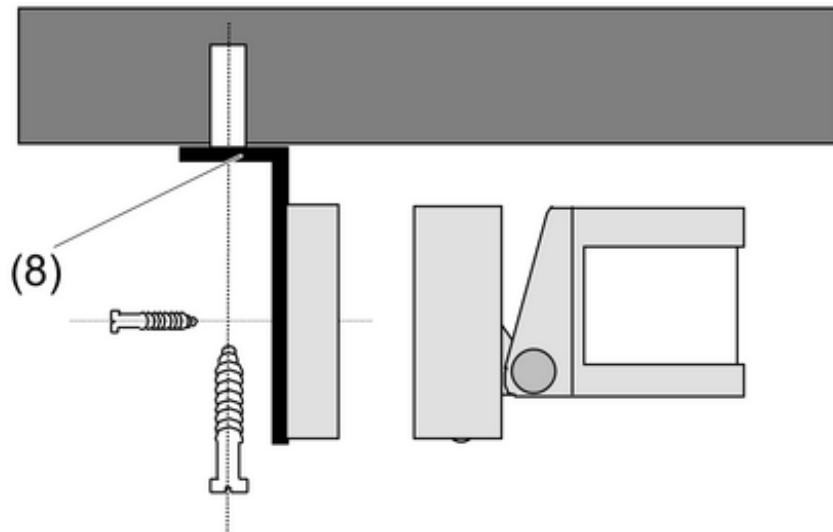


Figure 11

For mounting under ceilings, use a separate accessory part "Installation bracket".

- Fastening the installation bracket (8) to the ceiling with 2 screws (Figure 11).
- Carry out the remaining installation as described above.

Changing the battery



WARNING!

Risk of chemical burns.

Batteries can burst and leak.

Replace batteries only with an identical or equivalent type.

- Slacken the screw on the connection socket (5) (Figure 8).
- Remove the base plate (6) from the connection socket.
- Remove the void battery.

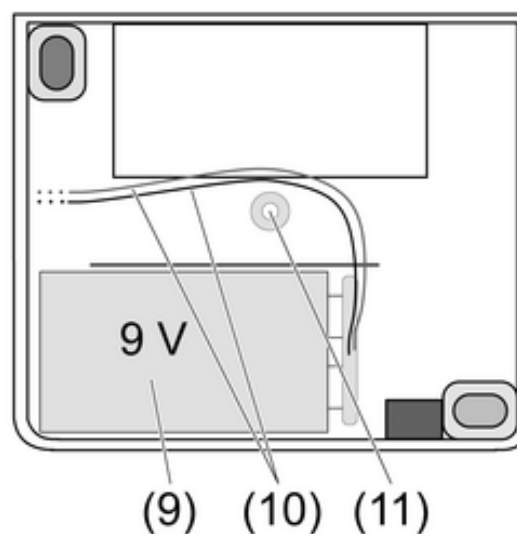


Figure 12

- Connect the new battery (9). Ensure correct polarity.
- Run the battery cable (10) around the screw dome (11). Ensure that no cables are squashed.
- Place the connection socket (5) on the base plate and screw it tight.
- i** Approx. 1 minute after inserting the battery, the motion detector is in the walking test/teach mode for approx. 10 minutes (see chapter Teaching the motion detector in the radio receiver). No actuator may be in programming mode during this time. Otherwise undesirable teaching will take place.

4.2 Commissioning

Teaching motion detector in radio receiver

In order for a receiver to understand a radio telegram from the motion detector, the receiver has to "learn" this radio telegram. The motion detector can be taught in any number of radio receivers. The teaching procedure only results in an assignment in the radio receiver.

When teaching a radio transmitter, the range of the receiver is reduced to about 5 m. The distance between the radio receiver and the transmitter being taught should therefore be between 0.5 m and 5 m.

- Disconnect the battery from the connection terminal for approx. 2 minutes.
- Reconnect the battery.

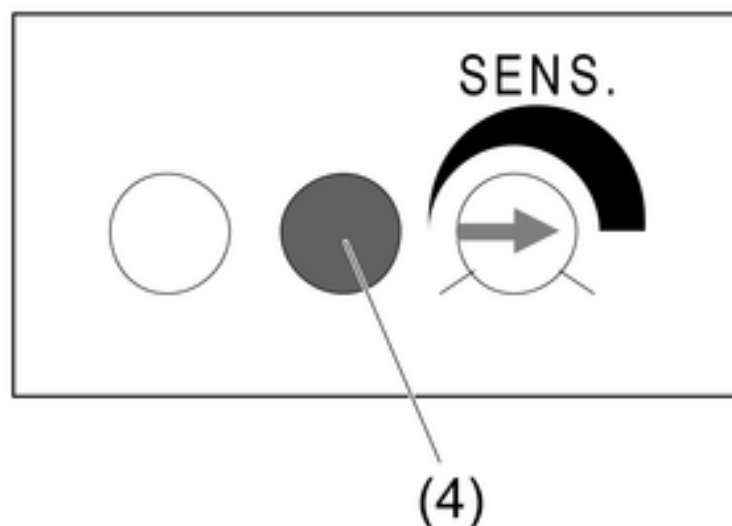


Figure 13

The red LED (4) lights up for approx. 1 minute (Figure 13). Then the motion detector is in walking test/teach mode for approx. 10 minutes. This is displayed by rapid flashing of the red LED. In this mode the motion detector evaluates motions regardless of the brightness. Every telegram transmitted here can be taught in the radio receiver.

- Test the detection area by walking over it and turn or tilt the sensor head if necessary (see "Adjusting the detection area").

Each telegram transmitted switches the receiver on for approx. 2 seconds.

- i** If the motion detector does not detect any motion for approx. 2 minutes, then it automatically exits the walking test / teaching mode.

- Switch radio receiver to programming mode (see instructions for receiver).
- Make a movement in the detection area of the motion detector, so that it sends a teach telegram.

The red LED flashes approx. 4 times.

The radio receiver acknowledges the teaching procedure (see instructions for the receiver).

- Exit programming mode of the radio receiver (see instructions for the receiver).

The motion detector has now been taught to the radio receiver.

- i** For as long as the motion detector is in walking test/teach mode, each movement in the detection area switches the lighting on briefly, irrespective of the brightness.

Adjusting the detection area

During the walking test/teach mode, the detection area should be adjusted (see chapter Teaching the motion detector of the radio receiver).



CAUTION!

Heat radiation too high.

Destruction of the sensors.

Align the device so that no direct sunshine hits the sensor window.

Do not place the device in the sun.

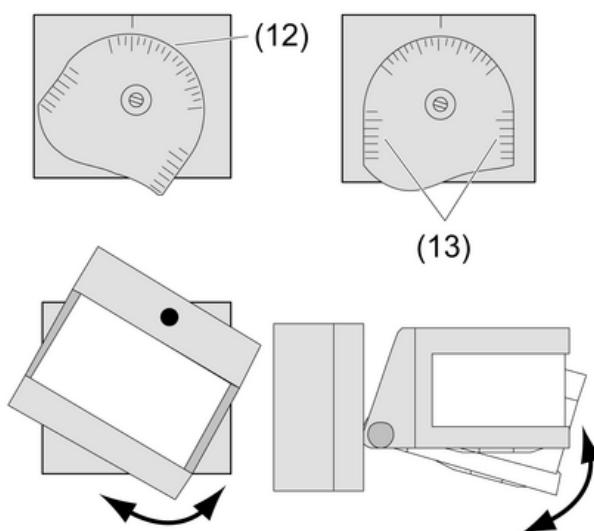


Figure 14: Turning and tilting the sensor head

- Pace off the detection area, paying attention to reliable detection and interference sources.
- Adjust the detection area to the local conditions by turning (12) and tilting (13) the motion detector. The gradings on the motion detector housing mean that the settings can be reproduced at any time (Figure 14).

Adjusting the sensitivity

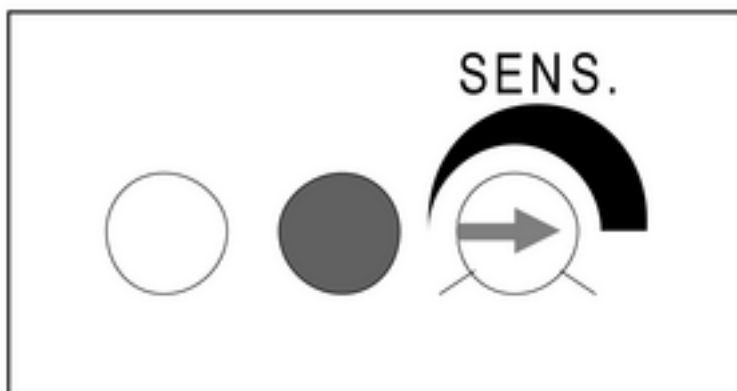


Figure 15

The sensitivity of the motion detector can be adjusted using the adjuster **SENS.** (Figure 15).

- Select the greatest sensitivity.
- Measure the detection area. For this, it might be necessary to use the walking test mode (see Teaching the motion detector in the radio receiver).
- If there are unwanted switching operations, reduce the sensitivity.

Limiting the detection area

Unrequired detection areas can be hidden using the cover panel. See (Figure 16) and (Figure 17).

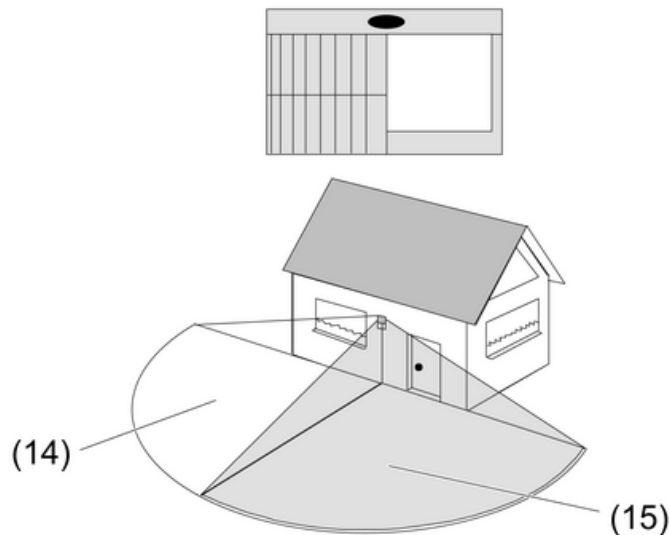


Figure 16: Hiding the side areas

- (14) Hidden area
(15) Monitored area

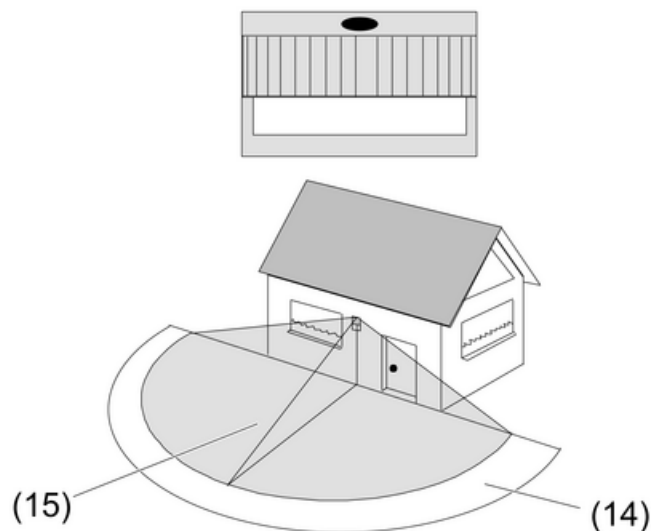


Figure 17: Hiding the long range

- i** To hide the long range area, cut out the bottom slats of the cover panel and leave the top cover panel slats alone.

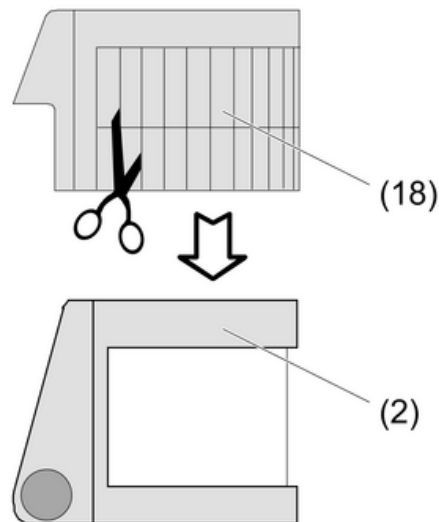


Figure 18: Cutting out the cover panel

- Cut out the cover panel (18) (Figure 18).
- Push the cover panel onto the sensor head (2).

5 Appendix



Remove empty batteries immediately and dispose of in an environmentally friendly manner. Do not throw batteries into household waste. Consult your local authorities about environmentally friendly disposal. According to statutory provisions, the end consumer is obligated to return used batteries.



The symbol confirms the conformity of the product to the relevant guidelines.

5.1 Technical data

Rated voltage	DC 9 V
Battery type	Alkaline 6LR 61
Ambient temperature	-25 ... +55 °C
Protection rating	IP 55
Sensor evaluation	
Brightness range	3 ... 200 lx
Tolerance	± 50 %
Night operation	< 80 lx
Day mode	> 200 lx
Sensitivity	20 ... 100 %
Installation height	approx. 2.40 m
Detection angle	180 °
Detection area	approx. 16 x 32 m
Carrier frequency	433.42 MHz (ASK)
Transmitting range in free field	typical 100 m
Transmitting power	< 10 mW

5.2 Troubleshooting

After transmission, the LED on the motion detector flashes 10 times or the red LED on the radio power pack lights up.

Cause: battery in the motion detector is almost empty.

Change battery (see section changing the battery).

Motion detector does not respond.

Cause 1: Ambient brightness too high.

Adjust the brightness value on the radio power pack (see radio power pack instructions).

Cause 2: The locking time for the transition between Day and Night mode has not yet elapsed.

Wait approx. 1 minute until the locking time has elapsed.

Cause 3: Radio range exceeded.

Check the installation situation. Structural obstacles reduce the range.

Using a radio repeater.

Cause 4: battery in the motion detector is empty.

Change battery (see section changing the battery).

Motion detector responds permanently.

Cause 1: Sensitivity of the motion detector is set too high.

Reduce the sensitivity.

Cause 2: the motion detector is in the walking test / teaching mode.

Without movement in the detection area wait 2 minutes, otherwise wait 10 minutes. After that the walking test / teaching mode is exited automatically.

Cause 3: There is constant movement in the detection area of the motion detector.

Eliminate cause of the continuous motion.

5.3 Warranty

We reserve the right to make technical and formal changes to the product in the interest of technical progress.

Our products are under guarantee within the scope of the statutory provisions.

If you have a warranty claim, please contact the point of sale or ship the device postage free with a description of the fault to the appropriate regional representative.

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