

Radio presence detector surface-mounted
Order-No. : 182 99 09

**Operation- and
Assembly Instructions**

1 Safety instructions

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

Failure to observe the instructions may cause damage to the device and result in fire and other hazards.

Risk of explosion! Do not throw batteries into fire.

Risk of explosion! Do not recharge batteries.

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.

Do not press on the sensor window. Device can be damaged.

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

2 Device components

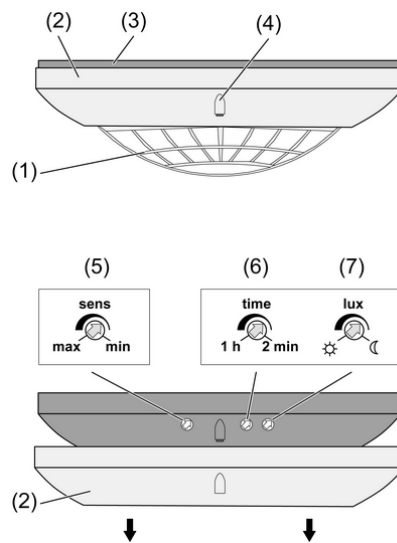


Figure 1

- (1) Sensor window with LED under it
- (2) Decor ring
- (3) Base plate
- (4) Button
- (5) Sensitivity adjuster
- (6) Run-on time adjuster
- (7) Brightness setpoint adjuster

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.

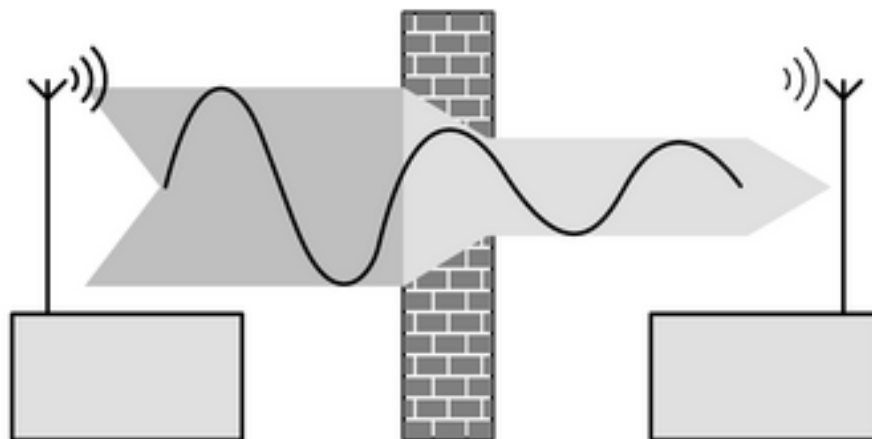


Figure 2: Reduced range due to structural obstacles

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

- Automatic switching and dimming of lighting depending on heat motions and ambient brightness
- Operation in combination with suitable radio actuators from Release R2 onwards
- Ceiling installation, surface-mounted

Product characteristics

- The presence detector detects heat motions of people, animals and objects
- Sensitivity, run-on time and brightness setpoint adjustable
- Push-on cover for limiting the detection area
- Constant light regulation with dimmer actuator
- 2-point light control with switch actuator
- The brightness setpoint can be changed via a separate radio transmitter
- Switching the lighting on or off for 2 hours can be activated
- Manual switch-on and switch-off of the light control possible
- Multiple presence detectors can be combined to form a common system.
- Battery-powered device

4 Operation

4.1 Light control with dimmer actuator

When the brightness drops below a setpoint and when a motion is detected the taught dimmer actuator switches the taught dimmer actuator on for the duration of the set run-on time. Every additional motion detection starts the run-on time again. The dimmer actuator performs constant light regulation depending on the brightness setpoint.

The lighting is switched off in the following cases.

- After the settable run-on time elapses.
- If there is high ambient brightness. If the brightness setpoint is exceeded by more than 40% for more than 15 minutes. at the minimum dimming level.
The run-on time is restarted every time a motion is detected. If the brightness drops below the brightness setpoint, then the light control starts up beginning with the minimal dimming level.

Switching the light control on manually

In the case of a switched-off load the light control can also be switched on manually, e.g. if the light control should be activated immediately when the monitored area is entered. During the initial detection it may take several seconds until the presence detector of the light control starts.

- Press a radio transmitter taught in the actuator briefly.
Light control is switched on. If no motion is detected for 2 minutes immediately after manual switch-on, then the actuator switches off again.

Switching the light control off manually

An active light control can be switched off manually.

- Press a radio transmitter taught in the actuator briefly.
Light control is switched off. The actuator remains switched off until motion is detected, e.g. during a video projector presentation. If there is no motion and after a run-on time of approx. 2 minutes elapses, the actuator returns to automatic mode.

Changing the brightness setpoint temporarily.

The brightness setpoint set in the light control test can be changed temporarily.

- Press a radio transmitter taught in the dimmer actuator for longer than 1 second.
The brightness of the connected lighting is changed. This new brightness level is saved as in the actuator as the brightness setpoint until the next switch-off.
- i** Because saving can take up to one minute, the new brightness level should remain constant for approx. 1 minute.

Changing the brightness setpoint permanently.

If the temporary brightness setpoint is active for approx. 2 minutes, then it can be accepted permanently as a brightness setpoint.

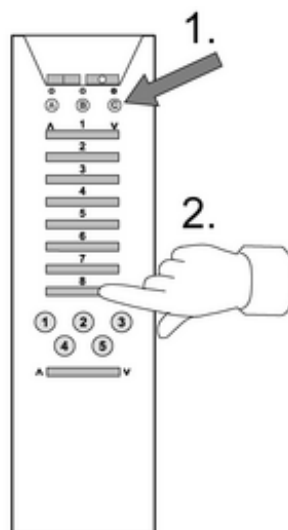


Figure 3

- Using the radio hand transmitter: Select channel group **C** and then press channel button **8** (Λ or V) for longer than 1 second (Figure 3).
For confirmation of the setpoint change the LED on the dimmer actuator lights up for approx. 1 second.
- i** An adhesive label for the radio hand transmitter comfort with the preset functions of the light control is included in the scope of supply.
- Operation with radio button cover: When luminaire is switched on, press radio button cover over entire surface for longer than 3 seconds.
A brief buzzing sound appears to confirm the setpoint change.
- i** In order to save once again the brightness setpoint set on the presence detector, activate the light control test mode (see Commissioning chapter).

Switch on for 2 hours

The function "Switch on for 2 hours" can be selected as soon as a presence detector and a radio hand transmitter comfort are taught in a dimmer actuator.

- Select channel group **C** and then press channel button **7 Λ** longer than 1 second.
The assigned dimmer actuator is switched on to maximum brightness for 2 hours and no longer reacts to telegrams from the presence detector. After the 2 hours have elapsed the automatic mode is activated again.

The function "Switch on for 2 hours" can be terminated at any time.

- Press a radio transmitter taught in the dimmer actuator briefly.
Depending on the button operation, the dimmer actuator switches off for 2 minutes or remains switched on. If there is no motion detection and after the run-on time the dimmer actuator returns to automatic mode.

Switch-off for 2 hours

The function "Switch off for 2 hours" can be selected as soon as a presence detector and a radio hand transmitter comfort are taught in a dimmer actuator.

- Select channel group **C** and then press channel button **7 V** longer than 1 second.
The assigned dimmer actuator is switched off for 2 hours and no longer reacts to telegrams from the presence detector. After the 2 hours have elapsed the automatic mode is activated again.

The function "Switch off for 2 hours" can be terminated at any time.

- Briefly press the switch-on button of a radio transmitter taught in the dimmer actuator.
The dimmer actuator switches on for 2 minutes. If there is no motion detection and after the run-on time the dimmer actuator returns to automatic mode.

4.2 Light control with switch actuator

When the brightness drops below a setpoint and when a motion is detected the taught dimmer actuator switches the taught switch actuator on for the duration of the set run-on time. Every additional motion detection starts the run-on time again. The switch actuator performs a 2-point light control depending on the brightness setpoint.

The lighting is switched off in the following cases.

- After the settable run-on time elapses.
- If the brightness actual value exceeds the brightness setpoint for by more than 100% for approx. 15 minutes.
The run-on time is restarted every time a motion is detected. If the brightness drops below the brightness setpoint, then the lighting switches on again.

Switching the light control on or off manually

As with the light control, the manual switching-on or switching-off takes place with a dimmer actuator (see Light control with dimmer actuator).

Changing the brightness setpoint permanently.

The current brightness actual value can be accepted permanently into the switch actuator as the brightness setpoint. This overwrites the brightness setpoint manually set on the presence detector. The acceptance of the brightness actual value takes place in the same way as in light control with a dimmer actuator (see Light control with dimmer actuator).

Switch on or switch off for 2 hours

As with the light control, the manual switching-on or switching-off for 2 hours takes place with a dimmer actuator (see Light control with a dimmer actuator).

4.3 Light control with light scene operation

Operating the light scene button

The actuator integrated into the light control can be integrated into additional actuators in light scenes and into the All On and All Off function. No light control is performed.

Pressing a button	Actor reaction
Press light scene button or All On button	Light switches on for at least 2 minutes. When motion is detected the run-on time of the presence detector is started.
Press the All Off button	Light switches off for 2 minutes. The 2 minutes are started again when motion is detected.

The light control is started again by pressing the transmitter taught in the actuator briefly.

Operating the master dimming button

After a light scene has been called up it is possible to change the brightness of the entire light scene via a master dimming button. The actuator integrated into the light control responds as follows:

Operation	Actor reaction
Press the master dimming button \wedge briefly	Light switches on. Light control is active.
Press the master dimming button \vee briefly	Light switches off for 2 minutes. The 2 minutes are started again when motion is detected.
Press the master dimming button \wedge for a longer period	The light gets brighter
Press the master dimming button \vee for a longer period	The light gets darker

- i** In the radio manual transmitter comfort the master dimming button is located under the 5 light scene buttons. The master dimming button of the hand-held transmitter affects all of the actuators that are participating in the light scene that was called up last.
- i** With the radio wall transmitter the channel buttons **4+** and **4-** have the master dimming functionality, if at least one of the other buttons is set to light scene operation. With a radio wall transmitter with 3 button pairs these are the channel buttons **3+** and **3-**. The master dimming button of the wall transmitter only affects the radio receiver that is integrated into the light control.

5 Information for electrically skilled persons

5.1 Fitting and electrical connection

Selecting the installation location

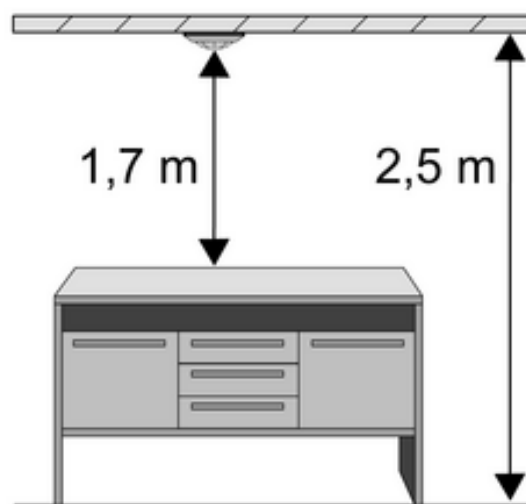


Figure 4

The presence detector is installed on the ceiling, and monitors the surface under it (Figure 4). The presence detector has a detection area of 360° and is more sensitive in the central area than in the peripheral area.

Therefore the presence detector should be mounted directly over the working surface.

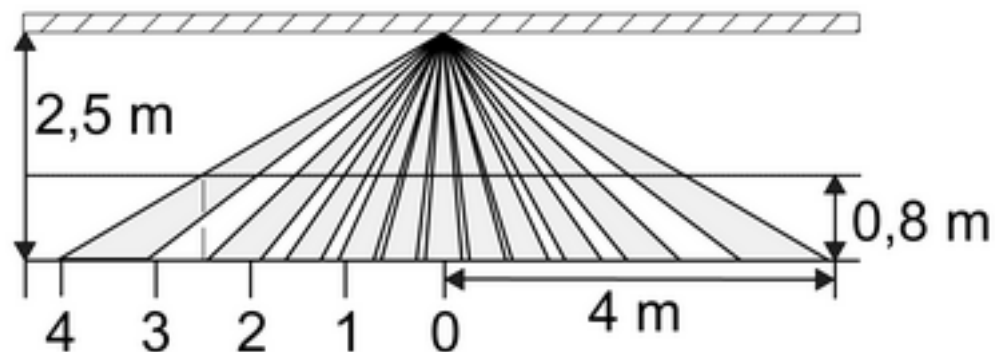


Figure 5: Detection area

The range is approx. 5 m in diameter at table height, e.g. approx. 80 cm. At floor level the range diameter is approx. 8 m (Figure 5).

These data are applicable for installation on the ceiling at an installation height of 2.5 m.

At installation heights greater than 2.5 m the detection area becomes larger, while at the same time the detection density and sensitivity are reduced.

- i** The push-on cover can be used to limit the detection area, e.g. in order to mask out interference sources.
- Select a vibration-free installation location; vibrations can lead to unwanted switching.
 - Avoid interference sources in the detection area. Interference sources, e.g. heaters, ventilation, air conditioners, and cooling light bulbs can lead to unwanted switching.

Mounting the presence detector

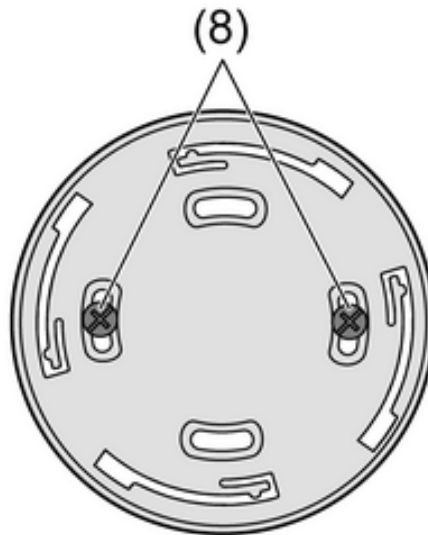


Figure 6

- Fasten the base plate to the ceiling with the supplied screws (8) (Figure 6).
- Insert batteries.
- Align the presence detector so that the brightness sensor is on the side away from the windows. This reduces the effects of scattered light.
- Set the presence detector on the base plate and turn anticlockwise by approx. 45° until the presence detector engages audibly.

Changing the batteries

The presence detector is operated with 4 batteries (see Technical data). Zinc-carbon batteries R 03 and rechargeable batteries may not be used.

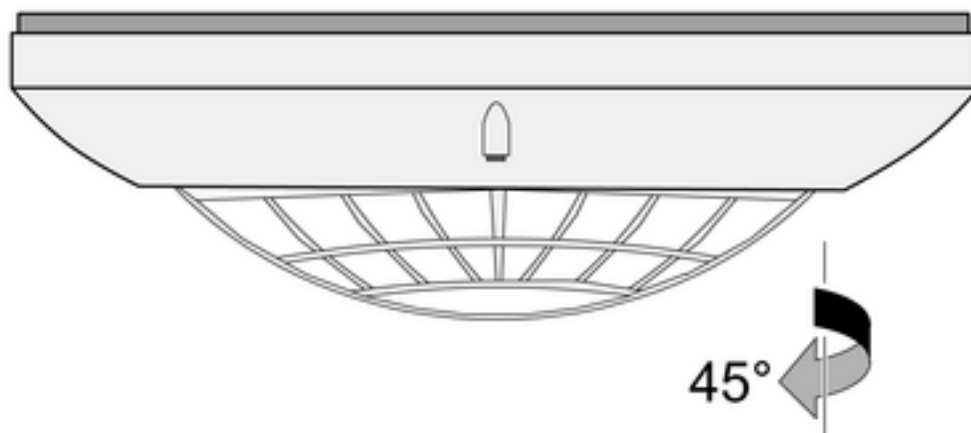


Figure 7

- Turn the presence detector clockwise by approx. 45° to detach it from the base plate (Figure 7).
- Remove old batteries.

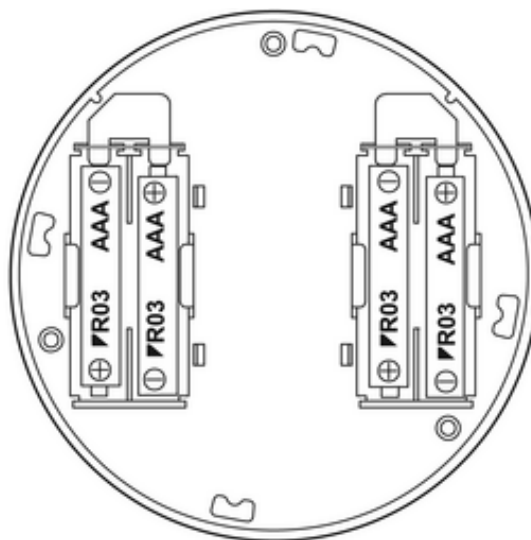


Figure 8

- i** Once the batteries are inserted the device transmits teaching telegrams for approx. 30 seconds. No actuator may be in programming mode during this time. Otherwise an undesirable teaching will take place.



WARNING!

Risk of chemical burns.

Batteries can burst and leak.

Exchange all batteries in a set at the same time.

Replace batteries only with an identical or equivalent type.

- Insert new batteries. Note the correct polarity (Figure 8).
- Set the presence detector on the base plate and turn anticlockwise by approx. 45° until the presence detector engages audibly.

5.2 Commissioning

Teaching the presence detector in the radio detector

The presence detector may be taught in only one receiver for light control. The teaching procedure only results in an assignment in the receiver.

When a presence detector is taught-in the sensitivity of the receiver is reduced to approx. 5 m. The distance between the receiver and the presence detector being taught should therefore be between 0.5 m and 5 m.

A radio presence detector does not work together with a radio motion detector. For this reason no radio motion detector may be taught in the corresponding receiver, and may have to be deleted. Otherwise it is not possible to teach in the presence detector and the radio receiver remains in programming mode.

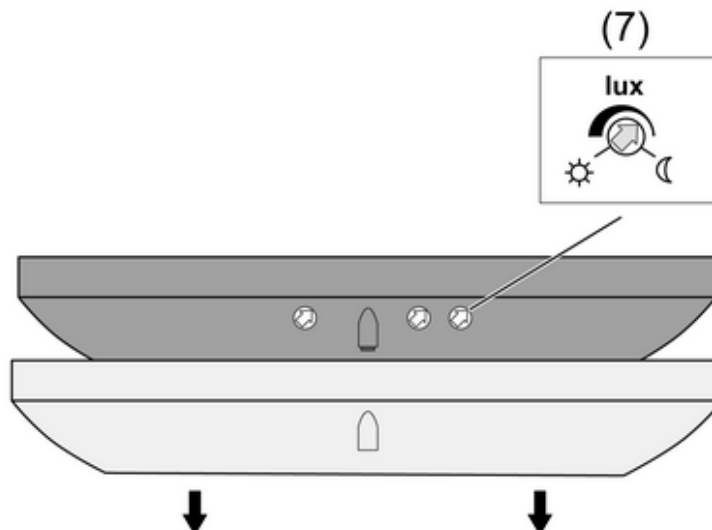


Figure 9: Brightness adjuster

When teaching the first presence detector in the receiver the brightness adjuster (7) must not point to the Moon symbol (Figure 9). A presence detector that is set this way cannot be the first taught in a receiver.

- i** In the state as delivered the adjuster points to the Sun symbol.
- i** It is possible to teach additional presence detectors in the radio receiver (see Presence detector system chapter).
 - Take batteries out of the presence detector for approx. 2 minutes.
 - Switch receiver to programming mode (see instructions for receiver).
 - Put batteries back into the presence detector.

The presence detector transmits teaching telegrams for approx. 30 seconds. The receiver acknowledges the teaching procedure (see instructions for the receiver).

- Switch receiver back to operating mode (see instructions for receiver).

The presence detector has now been taught in the radio receiver.

Setting sensitivity, run-on time and brightness setpoint

The brightness actual value measured at the presence detector consists of the reflected artificial light and daylight, and depends on the reflective characteristics of the surface under the presence detector.

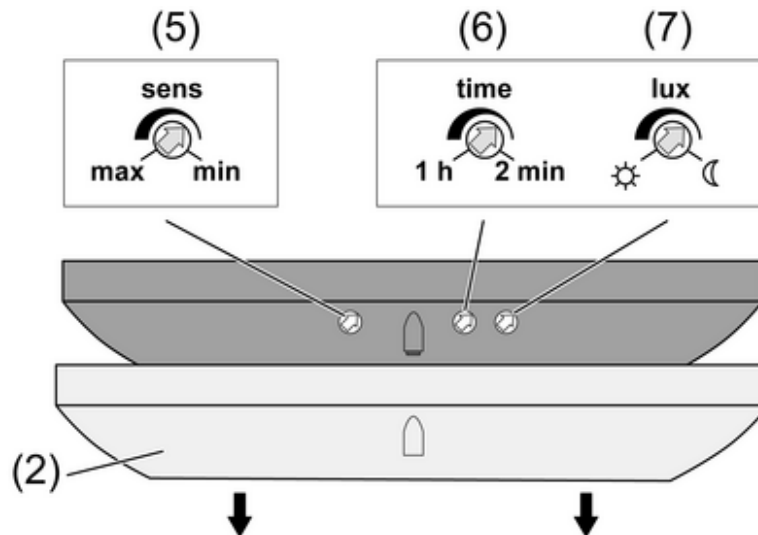


Figure 10: Adjuster

- Pull decor ring (2) off of presence detector (Figure 10).

The **sens** adjuster (5) can be used to set the sensitivity of the sensor between maximum and minimum sensitivity.

i At minimum sensitivity the presence detector does not trigger.

The **time** adjuster (6) can be used to set the run-on time between approx. 2 minutes and 1 hour. The middle position corresponds to about 15 minutes. The run-on time should initially be set to about 10 minutes.

The **lux** adjuster (7) can be used to set brightness setpoints from approx. 3 lux (Moon symbol) up to approx. 2000 lux (Sun symbol). The middle position corresponds to about 100 lux.

- Set **sens**, **time** and **lux** adjusters to the desired values.

i The set brightness setpoint is only transmitted to the taught receiver in light control test mode and saved there (see Light control test mode).

- Reattach decor ring. The brightness sensor must engage in the corresponding opening in the decor ring.
- Activate light control test mode.

Light control test mode: testing the light control

The brightness setpoint set on the presence detector is transmitted to the taught receiver in light control test mode and saved there. The receiver compares the received brightness actual value with the saved setpoint, and performs light control. Fine adjustment can be performed later by radio once suitable transmitters have been taught.

No presence detection is performed in light control test mode, but rather a quick calibration of the brightness setpoint and actual values.

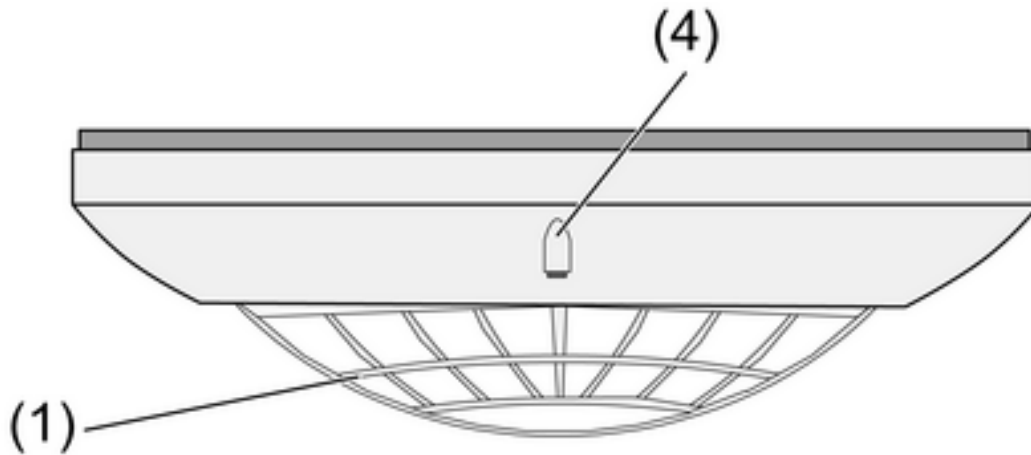


Figure 11

Presence detector must be taught in the receiver.

- To activate the light control test mode, press the button (4) for at least 1 second (Figure 11). The light control test mode is activated for about 5 minutes. During this time the LED (1) behind the sensor window first flashes 10 times quickly, then periodically every 5 seconds.
- Set the brightness setpoint on the presence detector (7) in such a manner that the resulting brightness level in the room corresponds to the desired brightness and the light switches on (Figure 9). To do this it may be necessary to darken the room.
- i When dimmer actuators are used the changing of the brightness setpoint can take approx. 1 minute.
- To exit the light control test mode, press button (4) briefly or wait about 5 minutes.

Walking test mode: testing the detection area

In walking test mode the detection area of the presence detector can be tested independently of the brightness. When the presence detector detects a motion in walking test mode, it switches the taught receiver on for about 10 seconds.

- To activate the walking test mode, press the button (4) for less than 1 second (Figure 11).
- Pace off the detection area, paying attention to reliable detection and interference sources. Limit detection area if necessary using the push-on cover.
Walking test mode is activated for about 10 minutes. During this time the LED behind the sensor window (1) flashes about 6 times for each transmission.
- To exit the walking test mode, press button (4) briefly or wait about 10 minutes.

Limiting the detection area

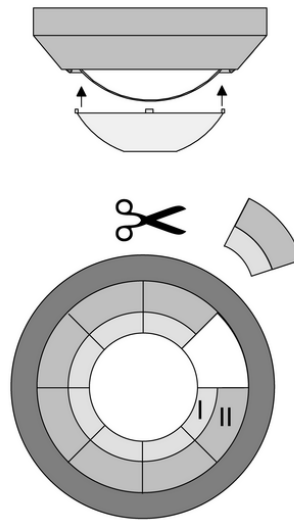


Figure 12: Push-on cover

The push-on cover can be used to limit the detection area, e.g. in order to mask out interference sources.

Cover size	Detection area on the floor
Complete cover	Ø approx 2.2 m
Area I cut out	Ø approx 4 m
Areas I + II cut out	Ø approx 6 m
Without cover	Ø approx 8 m

All data are applicable for an installation height of 2.5 m

- Pull off push-on cover
- Using scissors, cut out push-on cover along the marked lines as required.
- Push on push-on cover

Presence detector system: teaching master and slave presence detectors

In order to monitor larger areas, multiple presence detectors can be used together in a system. In the presence detector system one presence detector has to be defined as the main device (master). All other presence detectors function as extensions (slaves) (Figure 13).

- i** The number of presence detectors that can be used in a radio installation is limited. Depending on the environment, the use of more than 8 presence detectors can lead to degraded functioning.

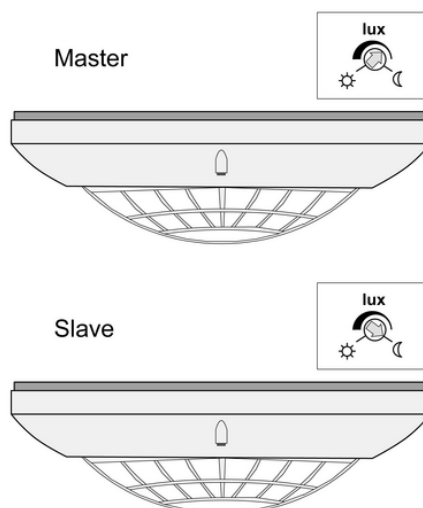


Figure 13: Master – slave

- i** Note the sequence: first teach the master presence detector, then the slave presence detector.
 - Set the desired brightness setpoint on the master presence detector. This value applies for the entire system.
 - Teach the master presence detector (see Teaching the presence detector in the radio receiver).
- i** If a master has already been taught in, any additional master overwrites the previous one, i.e. the previous master is deleted.
 - On the slave presence detectors, set the brightness setpoint to the minimum (Moon symbol).
 - Teach the slave presence detector (see Teaching the presence detector in the radio receiver).
 - Set the run-on time separately on each presence detector. When a receiver is triggered by a presence detector, the receiver's run-on time is activated.
 - Set the sensitivity separately on each presence detector.
 - Activate the light control test mode on the master presence detector so that the data are accepted in the radio receiver.

6 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.

6.1 Technical data

Rated voltage	DC 6 V
Battery type	4×alkaline LR 03
Ambient temperature	0 ... +45 °C
Protection rating	IP 20
Dimensions Ø×H	103×42 mm
Carrier frequency	433.42 MHz (ASK)
Transmitting range in free field	typical 100 m
Transmitting power	< 10 mW
Switch-off delay	approx. 2 ... 60 min
Brightness setting	approx. 3 ... 2000 lx

6.2 Troubleshooting

Lighting does not switch on.

Cause 1: sensitivity of the presence detector is set too low.

Increase sensitivity (see Commissioning chapter).

Cause 2: batteries in presence detector are empty.

Change batteries (see Fitting chapter).

Cause 3: Radio range exceeded.

Check the installation situation. Structural obstacles reduce the range.

Using a radio repeater.

Cause 4: ambient brightness is greater than the brightness setpoint.

Decrease brightness setpoint (see Commissioning chapter)

When a switch actuator is used: lighting switches on and off repeatedly - so-called "light oscillation".

Cause: the brightness setpoint set on the presence detector is too low.

Increase brightness setpoint (see Commissioning chapter).

LED flashes approx. 10 times during a transmission.

Cause: batteries in presence detector are almost empty.

Change batteries (see Fitting chapter).

6.3 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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