

## Motion detector 1.1 m

Order no. 8534 11 xx

## Motion detector 2.2 m

Order no. 8534 21 xx

# Operating instructions

## 1. Safety instructions

Electrical equipment may only be installed and assembled by a qualified electrician in accordance with the relevant installation standards, regulations, directives and 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.

These instructions are an integral component of the product and must be retained by the end user.

## 2. Design and layout of the device

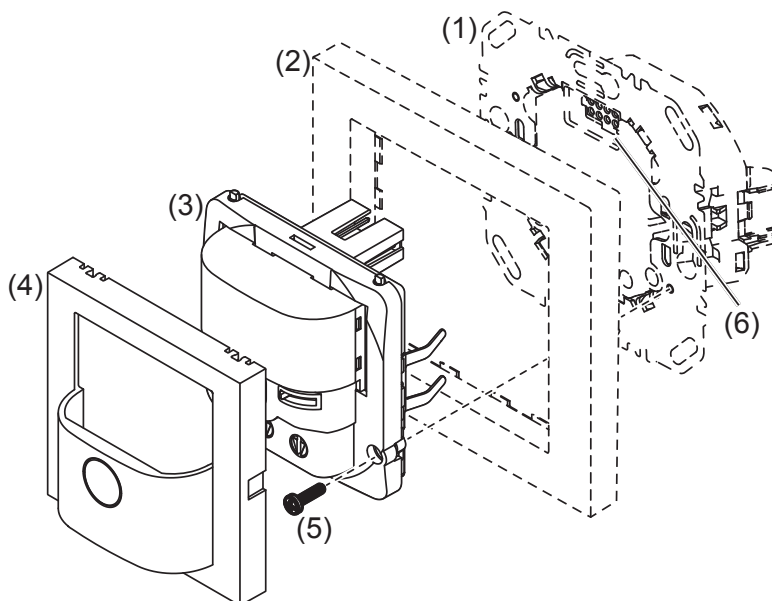


Figure 1: Design and layout of the device

- (1) Insert (see "Accessories", not in scope of delivery)
- (2) Frame (not within scope of delivery)
- (3) Application module
- (4) Motion detector design cover
- (5) Screw for dismantling protection (not for design lines R.1/R.3)
- (6) Interface between insert/application module

### 3. Function

#### Correct use

- Automatic switching of lighting depending on heat motion and ambient brightness
- Application module for switch insert, flush-mounted dimmer or motion detector extension unit
- Only suitable for use in indoor areas with no drip and no spray water.

#### Product characteristics

- Integrated button for selecting operating modes and special functions
- Lockable integrated button
- Operating mode - automatic mode, permanent ON, permanent OFF can be selected
- Display operating mode via LED
- Potentiometer for adjusting the response brightness and detection sensitivity
- Adjustable detection angle for adaptation of the detection area
- Additional adjustment of the response brightness via Teach-In function
- Party function
- Presence simulation
- Operation on motion detector extension units
- Optional extension unit operation via installation button

#### Automatic mode

The motion detector detects heat motion caused by people, animals, or objects.

Applied on switch insert:

- The light will be switched on for a (fixed) delay time of 3 minutes if movements are detected in the detection area and the set brightness threshold is undershot. Each detected movement restarts the delay time.
- The light will be switched off after 3 minutes if no additional movements are detected.

On flush-mounted dimmer:

- The light will be switched on to the switch-on brightness level for a (fixed) delay time of 3 minutes if movements are detected in the detection area and the set brightness threshold is undershot. Each additional movement in the detection area restarts the delay time.
- 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). Each movement detected during the switch-off pre-warning restarts the delay time and restores the switch-on brightness level.
- The light will be switched off if no motion is detected any longer in the detection area and the set delay time and the switch-off time have elapsed.

On extension unit

- If motion is detected in the detection area of the extension unit, the extension unit insert sends a pulse to the main unit and then locks for 10 seconds. Recording takes place independently of the brightness on the extension unit. If motion is still detected after 10 seconds, a pulse is sent again.
- Upon receiving an extension unit pulse, the main unit switches the light on for the delay time, if the set brightness threshold is undershot. Every further extension unit pulse restarts the delay time of the main unit.

### Performance after mains breakdown/return of mains supply

- Mains breakdown shorter than 0.2 s:  
The function is not impaired.
- Mains breakdown longer than 0.2 s:  
There is no function during the mains breakdown. The current configuration is saved in non-volatile memory.
- Return of mains supply:  
The application module executes an initialisation for approx. 15 s, during which 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 saved configuration is loaded from memory. During this period local operation via the button or extension unit can be used.

## 4. Operation

### Operating concept

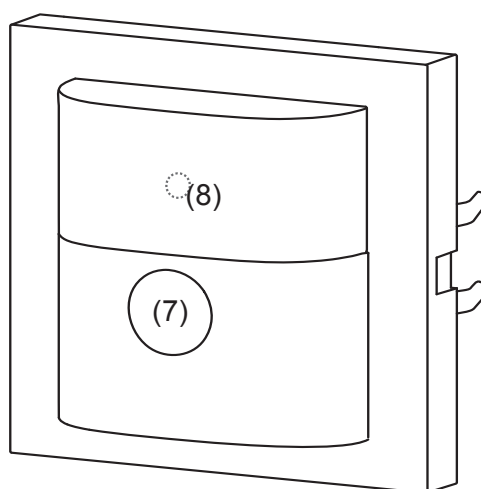


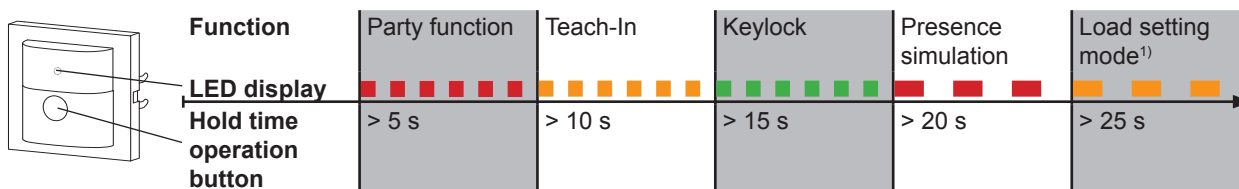
Fig. 2: Operating and display elements

(7) Button

(8) Status LED

Operation is executed by pushing the button (7) 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 optics cover of the motion detector.
- Keeping the button pressed activates special functions. Selection of the special functions is supported by the LED display (Fig. 3).



<sup>1)</sup> Only on universal switch insert and universal flush-mounted dimmer

Fig. 3: Selection of the special functions and LED display

### 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 Table 1).

- ❗ Switching the operating mode finishes the party function or presence simulation, if these functions were previously active.

LED display	Operating mode	On switch insert or flush-mounted dimmer	On extension unit insert
--	Auto	Motion-dependent and brightness-dependent switch on/switch off of the load	Motion-independent switching pulse for the main unit
green	Permanent ON	Load is permanently switched-on/switched-off.	Cyclical transmission of the switch-on pulse every 10 s
red	Permanent OFF	Extension unit signals will not be evaluated	--

Table 1: Display of operating modes

### Disabling/enabling operating mode selection via button

- Keep the button pressed for more than 15 seconds, until the status LED is flashing green (Fig. 3).

Selection of the operating mode via the button is disabled.

or if the button is locked:

- Keep the button pressed for more than 15 seconds, until the status LED is flashing green (Fig. 3).

Selection of the operating mode via the button is possible again.

### Switch on the lighting via push-button extension unit or change the switch-on brightness-level

The lighting can be switched on via a mechanical push-button extension unit.

- ❗ For extension unit operation, the lighting is switched on independently of the set brightness threshold.
- ❗ When using the flush-mounted dimmers, the last set brightness level will be saved as the switch-on brightness-level.

Dimming status	Operation button	Performance of the insert
Motion detector applied on switch insert		
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 applied on flush-mounted dimmer		
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
OFF	Long press	Load is switched on to switch-on brightness-level, subsequent dimming in the opposite direction of the last dimming process. Thereafter the load remains switched on for the delay time
ON	Long press	Changes the current brightness. Dimming takes place in the opposite direction of the last dimming operation until maximum or minimum brightness. Subsequently the load remains switched on at the set brightness for the set delay time

Table 2: Operation via push-button extension unit

### Activating/interrupting party function

The party function switches the lighting on for 2 hours. During this time no extension unit commands are executed.

- ❗ In the case of motion detectors on extension units, activating the party function causes cyclical transmission of the switch-on pulse every 10 s. However, the light is only switched on if the brightness threshold is undershot at the main unit.
- Keep the button pressed for more than 5 seconds, until the status LED is flashing red (Fig. 3).  
The lighting is switched on for 2 hours. During this time the status LED is flashing red. Upon elapse of 2 hours, the motion detector switches to **Auto** operation mode.
- Briefly press the button.  
The party function will be cancelled, the motion detector returns to **Auto** operation mode.

### Setting response brightness via Teach-In function

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. Via Teach-In function the current ambient brightness is saved as the response brightness.

- ❗ Teach-In cannot be carried out on the extension unit.  
The load is switched off.
- Keep the button pressed for more than 10 seconds, until the status LED is flashing orange (Fig. 3).  
The motion detector detects the current ambient brightness and saves it as response brightness.
- ❗ Setting of the response brightness via Teach-In function and via the brightness potentiometer has the same priority. Teach-In overwrites the response brightness set on the brightness potentiometer. If the setting is made again via the potentiometer, the Teach-In figure will be overwritten.

### Activating/deactivating presence simulation

During operation, the motion detector counts the motion detections in one full hour and saves the result. With active presence simulation at the beginning of the hour with the most detections saved, the light will be switched on for the duration of the delay time, even no motion is detected.

During the presence simulation, presence detection and extension unit commands will continue to be executed normally.

- ❗ The presence simulation cannot be activated via the extension unit.
- Keep the button pressed for more than 20 seconds, until the status LED is slowly flashing red (Fig. 3).  
The presence simulation is active. During this time the status LED lights orange. The motion detector switches the lighting on at the saved time.
- Briefly press the button.  
The presence simulation will be disabled, the motion detector returns to **Auto** mode.

## Setting the load

If the dimming and switching performance of loads is unsatisfactory after start-up, especially when circuited to energy-saving lamps and 230 V LED lamps, a load setting must be carried out for universal switch inserts or universal touch dimmers when using the motion detector.

- Switch off load.
- Keep the button pressed for more than 25 seconds, until the status LED is slowly flashing orange.  
The connected load blinks once. The device is in selection mode.
- If there is no further operation within the next 10 seconds, the insert switches to switching/dimming operation.
- Briefly press the button repeatedly to activate the desired setting mode (Table 3).  
The load setting is executed.

Short press on button	Setting mode	Confirmation of the load setting	Notes
1 x	Load fine-setting	Load blinks 1 x after approx. 30 s and changes to switching/dimming operation	Not suitable for ohmic loads (e.g. incandescent, HV halogen lamps); use factory load setting. If the load fine-setting does not bring any improvement for energy-saving lamps or 230 V LED lamps, select the energy-saving lamp fine-setting or 230 V LED lamp universal setting.
2 x	Factory load setting	Load blinks 2 x after approx. 6 s and changes to switching/dimming operation	
3 x	Energy-saving lamp fine-setting in phase cut-on	Load blinks 3 x after approx. 30 s and changes to switching/dimming operation	Energy-saving lamps are switched ON at a brightness level of at least 50% brightness in order to ensure an ignition process.
<b>Universal touch dimmer up to version R0.x</b>			
4 x	230 V LED lamp universal setting in phase cut-on	Load blinks 4 x after approx. 5 s and changes to switching/dimming operation	The universal setting contains standard values which enable the operation of typical dimmable 230 V LED lamps.
<b>Universal touch dimmer from version R1.1</b>			
4 x	230 V LED lamp universal setting in phase cut-on or phase cut-off	Load blinks 4 x after approx. 5 s and changes to normal operation	The dimming principle and optimal switch-on brightness for the connected dimmable 230 V LED lamps are set automatically.
	For all setting modes	Load blinks 5 x	The selected setting mode is not supported by the insert.

Table 3: Load setting mode

## 5. Information for electricians

### 5.1 Installation and electrical connection

#### Selecting installation location

- i** Observe the motion orientation: 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. 4).
- Select an installation location that is free of vibration. Vibrations can cause undesired switching.
- Avoid sources of interference in the detection area. Sources of interference, e.g. heating elements, ventilation systems, air conditioners and lamps that are cooling down can cause undesired switching (Fig. 4).
- i** To avoid disturbing influences, the detection angle can be restricted (see Restriction of the detection area).

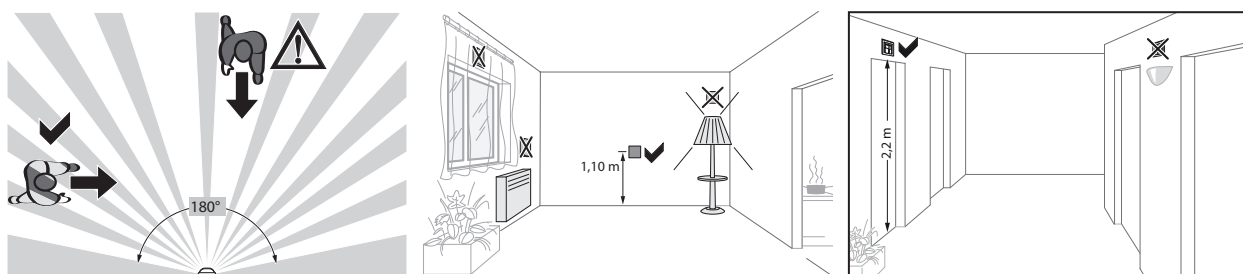


Fig 4: Installation location of the motion detectors

#### Assembly of the device (Figure 1)

- i** Information on electrical connection are to be taken from the operating instruction of for the insert.
- Attach the bottom part of the application module (3) together with frame (2) to a suitable insert (1) and establish a connection between insert and the application module via the interface between application and power module (6).

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

Status LED display	Meaning
LED blinks green (approx. 5 s until motion detection is active)	Compatible
LED blinks red for 5 s	Not compatible

- If available, fix dismantling protection with screw (5).
- After start-up, click the design cover (4) into place on the application module (3).

## 5.2 Start-up

### Overview of operation and adjustment elements

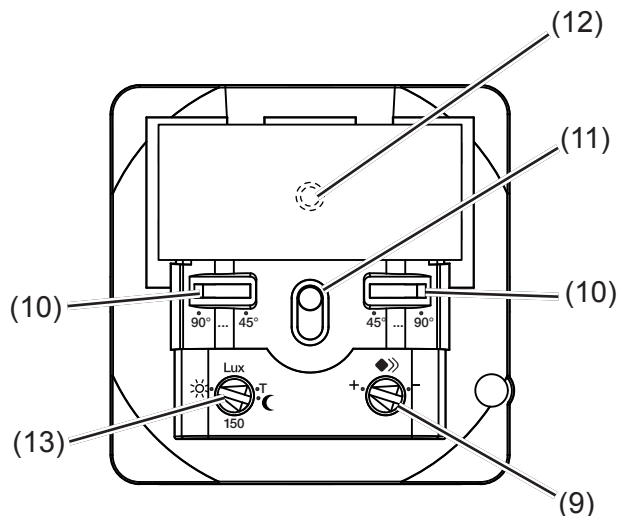


Fig. 5: Operating and adjustment elements of the bottom part of the application module

- (9) Sensitivity potentiometer
- (10) Detection angle adjuster
- (11) Button
- (12) Status LED
- (13) Response brightness potentiometer

### Setting the detection area

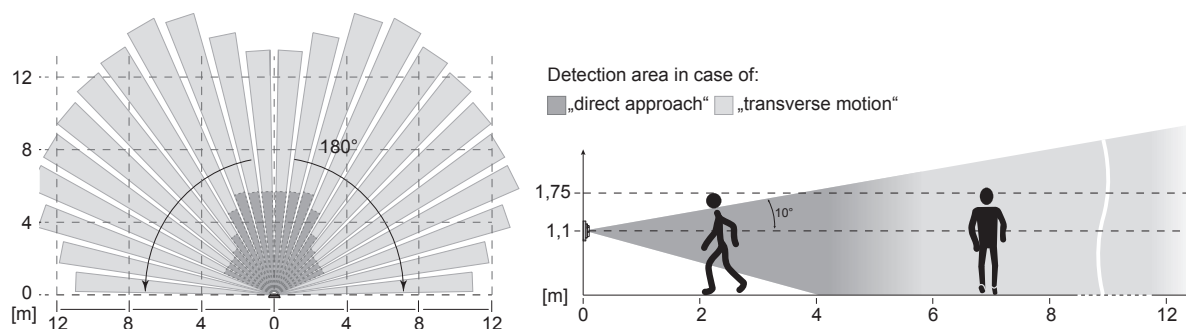


Figure 6: Detection area of the motion detector for mounting height 1.1 m

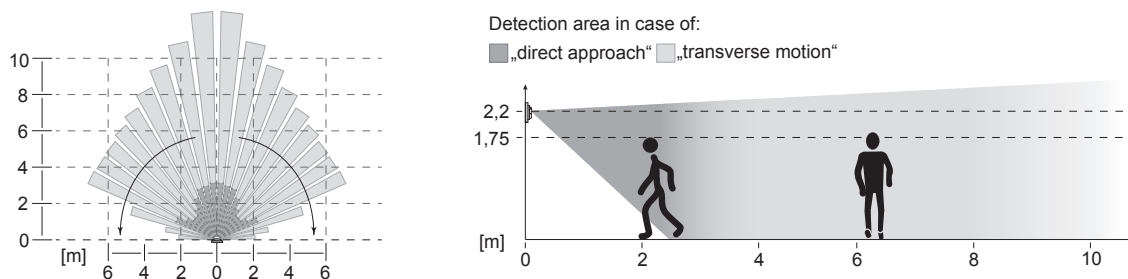


Figure 7: Detection area of the motion detector for mounting height 2.2 m

The detection angle can be restricted for the right side and for the left side via each adjuster (Fig. 5, 10) between 45° ... 90°. Thus, the detection angle can be between 90° and 180° (Fig. 8).



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

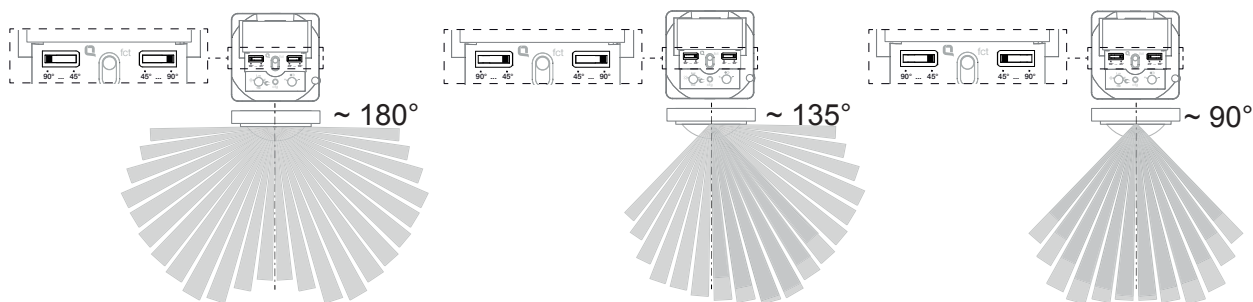


Fig. 8: Setting the detection angle

### Setting the detection performance

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

The motion detector is connected and ready for operation.

- Setting the test mode. To do so, set the response brightness potentiometer (Fig. 5, 13) to the T position.
- Leave the detection area and observe the switching behaviour.  
If the motion detector switches on without motion in the detection field, then sources of interference (see Installation location) are present or the sensitivity is set too high.
- Reduce the sensitivity if necessary and blank out sources of interference by adjusting the detection angle or removing them.
- Check the detection area using a detection test and adjust if necessary.
- i** If the detection area is too small, it can be extended via motion detector extension units.

### Setting the response brightness

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 (☾) over **150 Lux** (factory setting) to daytime operation (☼). The ☼ symbol stands for brightness-independent switching. The response brightness can be variably adjusted in the intermediate areas.

- i** In order 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 (Fig. 5, 13) to the desired position.
- i** To save the current ambient brightness as response brightness, use the Teach-In function (see Setting the response brightness via Teach-In function).
- i** As the brightness evaluation only takes place via the main unit, there is no need to set the response brightness on extension units.

### Setting the sensitivity

Detection is factory-set to maximum sensitivity. If there are frequent incorrect detections, the sensitivity can be reduced.

- Turn the sensitivity potentiometer (Fig. 5, 9) to the desired position.

## 6. Appendix

### 6.1 Technical data

Connection	Mounting on suitable inserts
Power supply	via inserts
Response brightness	approx. 5 ... 1000 lux ( $\infty$ )
Sensitivity	approx. 10 ... 100 %
Detection angle	approx. 90 ... 180°
Detection area (1.1 m)	approx. 12 x 16 m
Detection area (2.2 m)	approx. 8 x 12 m
Degree of protection	IP 20
Relative humidity	0 ... 65 % (no condensation)
Ambient temperature	-5 ... +45 °C
Storage/transport temperature	-20 ... +60 °C
Mounting orientation	Interface between application and power module at top

### 6.2 Accessories

Relay insert	8512 12 00
Universal switch insert 1-gang	8512 11 00
Touch dimmer (R, L)	8542 11 00
Universal touch dimmer 1gang	8542 12 00
Motion detector extension unit	8532 01 00

### 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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