

Presence detector universal
Art. No. PMU 360 WW
Presence detector universal
Art. No. PMU 360 AL

Operating 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.

Danger of electric shock. Device is not suitable for disconnection from supply voltage. The load is not electrically isolated from the mains even when the device is switched off.

Danger of electric shock. Always disconnect before carrying out work on the device or load. At the same time, take into account all circuit breakers that supply dangerous voltage to the device or load.

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

The device is not suitable for use as a burglar alarm or other alarm.

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

2 Device components

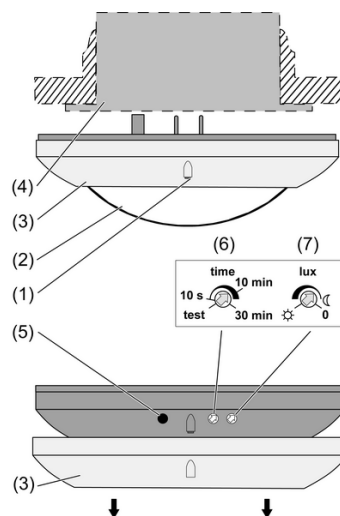


Figure 1: Device components

- (1) Brightness sensor
- (2) Sensor window
- (3) Decor ring
- (4) Up insert
- (5) LED
- (6) Adjuster **time**, run-on time
- (7) Adjuster **lux**, Brightness

3 Function

Intended use

- Automatic switching of lighting depending on the heat motion and ambient brightness.
- Operation with flush-mounted insert for switching or dimming or 3-wire extension insert to expand the detection area.
- Ceiling installation on flush-mounted insert.

Product characteristics

- Constant light control in combination with dimmer insert
- 2-point light control in combination with switch insert
- Run-on time and brightness value settable
- Test operation for checking the detection area
- Push-on cover for limiting the detection area
- Expansion of the detection area in combination with 3-wire extension insert
- Manual switch-on and switch-off possible with 2-wire extension insert or installation button

Automatic operation

The presence detector detects heat motions of people, animals and objects.

The light is switched on:

- If someone or something enters the monitored detection area and the brightness is below the set level. Dimmer inserts first switch to maximum brightness.
- The light remains switched on as long as motions are detected in the detection area and the brightness is not below the set level.

The light is switched off:

- If no more movement is detected in the detection area and the run-on time has elapsed.
- If the brightness exceeds twice the set value for longer than 10 minutes.

i The minimum switch-off brightness is 400 lux, even if a lower value is set.

The light is switched off in combination with dimmer inserts:

- If no more movement is detected in the detection area and the run-on time has elapsed. This is done by first dimming the light to minimum brightness and switching it off after 5 minutes.
- If the light has been dimmed to minimum brightness and the brightness exceeds 1.5 times the set value for longer than 10 minutes.

If the light was switched off because the brightness value was exceeded, the light control remains active. This means that the light is switched on again as the brightness decreases. With dimmer inserts, the light is switched on with minimum brightness.

Expanding the detection area

To extend the detection area, the presence detector cover is combined with a 3-wire extension insert and connected to a main device. The adjusters of the presence detector cover on the 3-wire extension insert have no function. When motions are detected, the extension transmits a signal to the main device.

i Do not connect any main devices in parallel.

Behaviour in case of a mains failure

- Less than 0.2 seconds: the old switching position is restored after mains return.
- Longer than 0.2 seconds: a self-test is performed after mains return. This takes approx. 30 seconds. The light is switched on during the self-test; operation via extensions is not possible.

4 Operation

Switching on the light

A 2-wire extension or an installation button is connected.

- Press button for less than 0.4 seconds.
The light is switched on for at least 2 minutes.

- i** If motions are detected, the light remains on after the 2 minutes have elapsed. The run-on time is set to the time specified on the adjuster.
- i** If the **time** adjuster is set to **test**, then the light remains switched on for approx. 1 seconds, even if the button is pressed for longer.

Switch light on with minimum brightness

Presence detector cover is combined with a dimmer insert.

A 2-wire extension is connected.

Light is switched off

- Press button at bottom for longer than 0.4 seconds.
Light is switched on to minimum brightness and maintains it as long as motions are detected.

Switching the light off

It is possible to switch the automatic function off in a targeted fashion, e.g. in order to darken a room.

A 2-wire extension or an installation button is connected.

Light is switched on.

- Press button for less than 0.4 seconds.
The light is switched off for 3 minutes. Each detected motion extends the time by 3 minutes. After the 3 minutes have elapsed the presence detector is in automatic mode again. During these 3 minutes the light can only be switched on again using the 2-wire extension or the the installation button.

Switching off the brightness evaluation

The brightness evaluation can be switched off if the brightness is perceived as too dark after the light is switched off.

A 2-wire extension or an installation button is connected.

The presence detector has switched the light off due to adequate extraneous light, e.g. daylight.

- Press the installation button within 1 minutes after switch-off.
The light is switched on. The light remains switched on as long as the presence detector detects motions. The brightness is not evaluated.

- i** After the run-on time has elapsed, the presence detector switches off and is in automatic mode once again.

Changing brightness value temporarily

The light can be dimmed using the 2-wire extension. The set value is retained until the presence detector cover switches off. The next time it is switched on, constant light control is performed again using the set brightness value.

Presence detector cover is combined with a dimmer insert.

A 2-wire extension is connected.

Light is switched on.

- Press button at top or bottom for longer than 0.4 seconds.
Light becomes brighter or dimmer as far as the respective limit value.

5 Information for electrically skilled persons

5.1 Fitting and electrical connection



DANGER!

Electrical shock when live parts are touched.

Electrical shocks can be fatal.

Before carrying out work on the device or load, disengage all the corresponding circuit breakers. Cover up live parts in the working environment.

Selecting the installation location

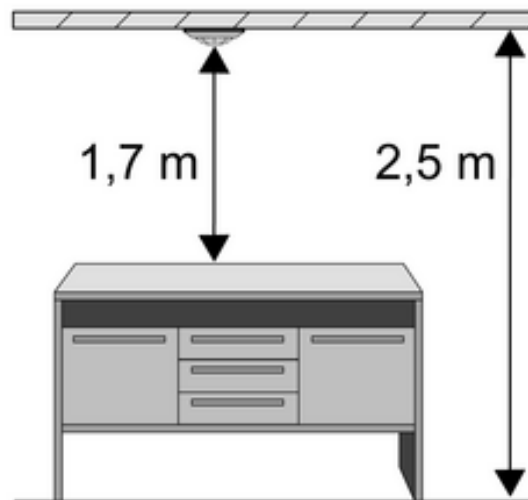


Figure 2

The presence detector is installed on the ceiling, and monitors the surface under it (figure 2). The presence detector has a detection area of 360°. The PIR sensor system operates with 6 detection levels and 80 lenses.

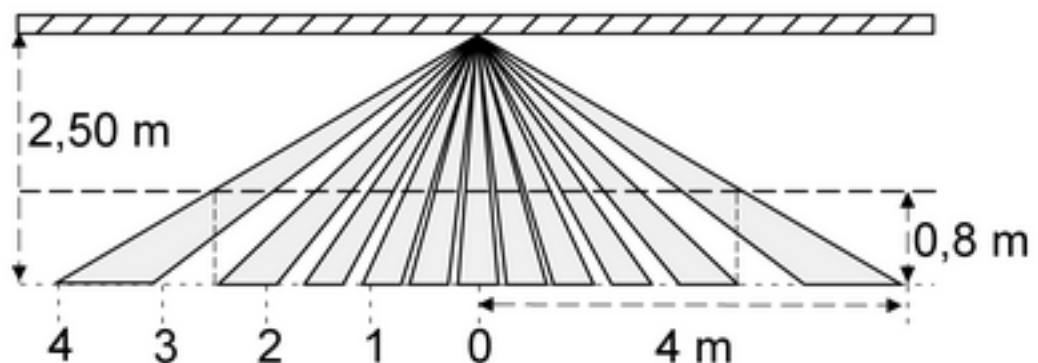


Figure 3: Detection field

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 3).

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** If necessary, the detection area can be limited using the push-on cover (see Limiting the detection area).
- 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.

Fitting the presence detector cover

- Align the presence detector so that the brightness sensor is on the side away from the windows. This reduces the effects of scattered light.
- Connect flush-mounted insert properly and mount in accordance with the desired orientation of the presence detector (see instructions for flush-mounted insert).
- Fit presence detector cover on flush-mounted insert.

5.2 Commissioning

Testing the detection area

The presence detector is mounted and connected properly.

- Pull off decor ring (3).
- Set **lux** adjuster to ☀ (figure 1).
The presence detector operates independently of the brightness.
- Turn **time** adjuster to **test** (figure 1).
The presence detector switches on for approx. 1 second when there is motion.
- Pace off the detection area, paying attention to reliable detection and interference sources.
- Limit detection area if necessary using the push-on cover.
- Attach decor ring (3).

Limiting the detection area

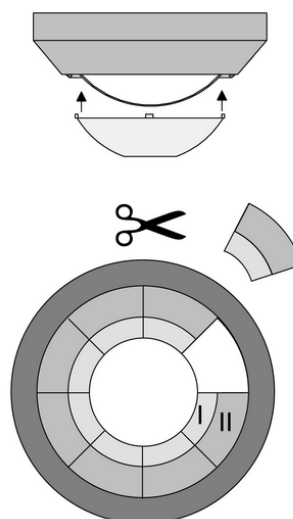


Figure 4: Push-on cover

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

Setting the brightness value in combination with dimmer insert

- Pull off decor ring (3).
 - Turn adjuster (7) **time** to **30 min.**
 - Turn **lux** adjuster to ☀.
- LED (5) is off.
- i** Do not place brightness sensor (1) in shadow, because otherwise correct brightness measurement will not be possible. The measured brightness value consists of the reflected artificial light and daylight, and depends on the reflective characteristics of the surface under the presence detector.
 - i** If the presence detector is switched on via an extension, the **lux** adjuster is not evaluated.

The brightness value should be adjusted in several steps, because the presence detector requires some time to adjust itself to the changed value.

- Turn **lux** adjuster (7) in the ☺ direction until the desired brightness value is reached. Presence detector is set to the current brightness.
- i** If **lux** adjuster is on **0**, the presence detector only switches on through operation of an extension. In this case the switch-off brightness is 400 lux.
- Attach decor ring (3).

Calibrating the brightness value in combination with switch insert

Brightness calibration is necessary to prevent light oscillations from occurring. A light oscillation occurs when the presence detector switches off again due to the lighting that has been switched on (brightness value exceeded). The brightness calibration is performed in the lighting situation that is required as workplace brightness. The lighting controlled by the presence detector is switched on. Avoid extraneous light, e.g. from daylight and other lighting. Various lamps, e.g. fluorescent lamps, require some time to reach full brightness. Therefore note the run-in phase of the lamp. The LED (5) can be used as an adjustment aid.

Meaning of the LED with the load switched off

LED off	Monitored surface is too dark, load switches on when motion detected.
LED on or LED flashes	Monitored surface is bright enough, load remains off when motion detected.

Meaning of the LED with the load switched on

LED off	Monitored surface is too dark, load remains switched on when motion detected. When no motion is detected, it is switched off after the run-on time elapses.
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LED on	Monitored surface is bright enough due to lighting that is switched on, load remains switched on when motion detected. When no motion is detected, it is switched off after the run-on time elapses.
LED flashes	Monitored surface is very bright due to lighting that is switched on or extraneous light, load switches off after approx. 10 minutes, even if the run-on time is set longer or if motion is detected.

- Pull off decor ring (3).
 - Turn **time** adjuster (7) to **30 min**.
 - Turn **lux** adjuster to ☀.
- LED (5) is off.
- i** Do not place brightness sensor (1) in shadow, because otherwise correct brightness measurement will not be possible. The measured brightness value consists of the reflected artificial light and daylight, and depends on the reflective characteristics of the surface under the presence detector.
- Switch on presence detector via motion in the detection area.
 - Turn **lux** adjuster (7) in ☾ direction until LED (5) lights up.
- Presence detector is set to the current brightness.
- i** If **lux** adjuster is on **0**, the presence detector only switches on through operation of an extension. In this case the switch-off brightness is 400 lux.
- Attach decor ring (3).

Setting the run-on time

The fewer the motions expected in the monitored area, the longer the run-on time setting should be. This reduces the probability that the presence detector will switch off even though people are present. Use 10 minutes as the default setting value.

- Pull off decor ring (3).
 - Turn **time** adjuster (6) in the appropriate direction.
- The presence detector is ready for operation
- Attach decor ring (3).

6 Appendix

6.1 Technical data

Ambient temperature	+5 ... +35 °C
Degree of protection	IP 20
Detection angle	360 °
Detection area	
Desk height	Ø approx. 5 m
Floor	Ø approx. 8 m
Switch-off delay	approx. 10 s ... 30 min
Run-on time, test	approx. 1 s
Brightness setting	approx. 10 ... 1000 lx

6.2 Troubleshooting

Presence detector switches does not switch on when there is motion, even though the brightness is too low

Brightness value setting too low.

Turn **lux** adjuster in ☀ direction.

lux adjuster is set to **0**. Initial detection is switched off.

Switch on via extension.

Turn **lux** adjuster in ☀ direction (see Calibrating the brightness).
Switched off via extension.
Switch on via extension.

Presence detector switches on without any detectable motion

Interference sources in the detection area.

Pay attention to interference sources, e.g. heating, ventilation, air conditioners, cooling light bulbs in the detection area.
Possibly limit detection area with the push-on cover (see Limiting the detection area).

Presence detector does not switch off even when there is a great deal of extraneous light.

The brightness value setting is too high.

Turn **lux** adjuster in ☾ direction (see Calibrating the brightness value).

Presence detector switches off, even though people are present and the brightness is too low

Detection problem, the surface to be monitored is not in the detection area, or furniture or pillars are in the way.

Use an additional presence detector (see Connecting presence detectors in parallel).

Run-on time too short. Motion of persons is not detected.

Extend run-on time using **time** adjuster (see Setting the run-on time).

Presence detector switches on and of constantly

time adjuster is set to **test**.

Set run-on time using **time** adjuster (see Setting the run-on time).

Presence detector switches off briefly and then on again immediately

Brightness drops below the brightness value setting after switch-off.

Turn **lux** adjuster in ☀ direction (see Commissioning section)

6.3 Warranty

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

We provide a warranty as provided for by law.

Please send the unit postage-free with a description of the defect to our central customer service office.

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