

## Gira Sensotec/Gira Sensotec LED

Motion detector, orientation light and contactless switch in one



Gira Sensotec  
Gira E2, pure white glossy

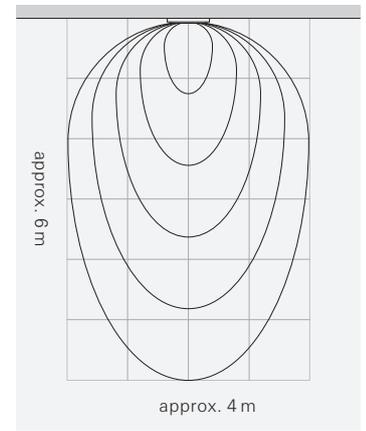


Gira Sensotec LED in the dark  
Gira E2, pure white glossy

## Gira Sensotec

More security and orientation in the dark automatically: The Gira Sensotec switches on the room lighting in dimmed mode as soon as the high-frequency sensor detects motion in a predefined long detection range. In addition, the room lighting can be switched to 100% with a single movement – i.e. without contact – in the close-up detection range. Thanks to its flat design, the Gira Sensotec blends discreetly into any setting.

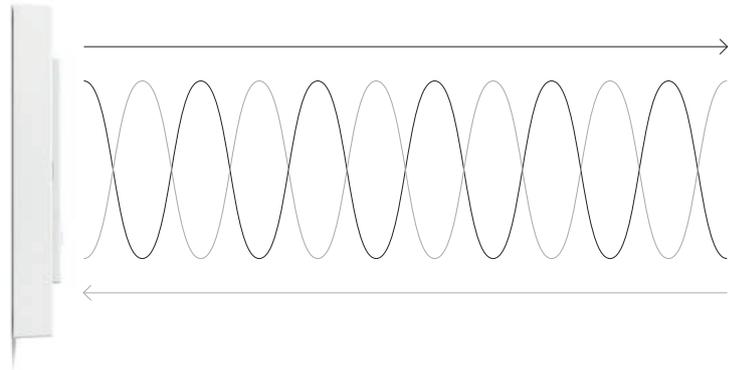
The Gira Sensotec can also be used in conjunction with a coupling relay as a contactless door opener in public sanitary facilities, or in hospitals, nursing care facilities or medical practices.



Large detection range of approx. 24 m<sup>2</sup>



Gira Sensotec in Gira E2 switch range, pure white glossy



Gira Sensotec seen in profile

Sending and receiving:  
Motion detection based on the Doppler effect

## High frequency sensor vs. PIR technology – a comparison

Motion is detected using the Doppler effect: The high-frequency sensor (HF) emits electromagnetic waves with a frequency of 5.8 GHz. If the signal hits an immobile object, such as a piece of furniture, it is reflected at the exact same frequency – whereas if there is a person within that space moving towards or away from the sensor, the frequency of the reflected signal will be increased or reduced. The Gira Sensotec registers this change as motion and turns on the room light in dimmed mode as a result.

A motion detector using PIR technology and a passive infrared sensor detects the invisible thermal radiation from moving bodies. Advantages of HF over PIR technology include, for example, precise detection at high temperatures and detection through penetrable materials. With the Gira Sensotec, optimal detection occurs when people move directly towards the device. By contrast, PIR detectors work best when people move at right angles to the direct approach line.

| Technology                                   | HF      | PIR    |
|--|---------|--------|
| Motion detection through heat measurement    |         | •      |
| Motion detection through reflected signals   | •       |        |
| Increased range through reflected signals    | •       |        |
| Detection in recesses and corners            | •       | •      |
| Use in staircases                            | •       | •      |
| Use in hallways                              | •       | •      |
| Detection through permeable materials        | •       |        |
| Detection even at temperatures above 28 °C   | •       |        |
| Optimal direction of motion vis-à-vis device | Head-on | Across |

## Gira Sensotec LED

The Gira Sensotec LED uses an integrated LED light to provide orientation lighting which switches on automatically – thus uniting the functions of a motion detector, an LED orientation light, and a contactless switch within a single device for the first time. Like the Gira Sensotec, the Gira Sensotec LED also works using a high frequency sensor.

When motion is detected, the integrated LED orientation light discreetly illuminates its surroundings to provide orientation within the space. The light intensity can be set to the desired level of brightness to avoid glare. If more light is needed, the user can switch on the room lighting with a single, contactless motion at a distance of approx. 5 cm. Combining these functions in a flush-mounted box saves installation space and reduces installation and device costs.

The Gira Sensotec LED is particularly suitable for areas where subtle lighting is sufficient for orientation in the dark, e. g. hallways of homes. The LED orientation light is harmoniously integrated, giving the Gira Sensotec LED a very pleasant appearance on the wall.



Gira Sensotec LED in Gira E2 switch range, pure white glossy



Discrete illumination and orientation in the living area

## Flat design

High tech in its slimmest form: both devices are quite slim – e. g. less than 2 mm thick for the E2 frame range – and their flat design looks extremely elegant and yet inconspicuous on the wall. The frame and top unit, including flush-mounted LED orientation light with the Gira Sensotec LED, are almost on one level and easy to clean. The devices can be integrated into System 55 frames and into F100 ranges (with adapter frames). Five colour variants provide a wide range of design options.

## Product design

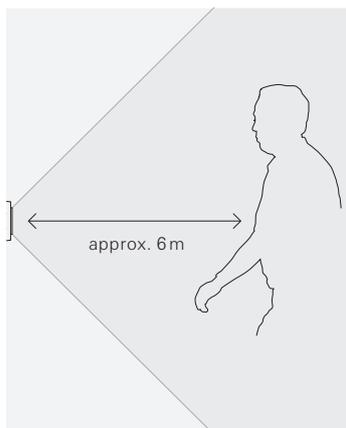
- 1 Flush-mounted insert
- 2 Frames
- 3 Top unit with brightness sensor and LED display (blue, red)



Flush-mounted box ← 1 ← 2 ← 3

**Motion detection in the long range: automatically dimmed room light**

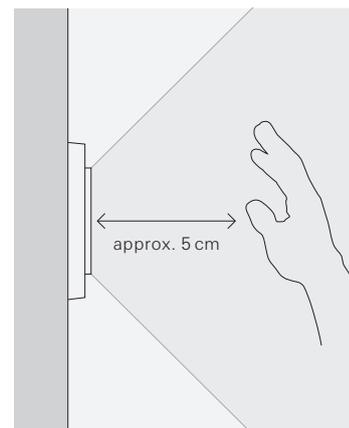
When motion is detected in the long range of up to approx. 6 m, the Gira Sensotec automatically switches on the room light in dimmed mode when it's dark. This makes orientation easier, thus improving security.



Motion detection in the long range of approx. 6m

**Motion detection in the close-up range: lighting is switched on without contact**

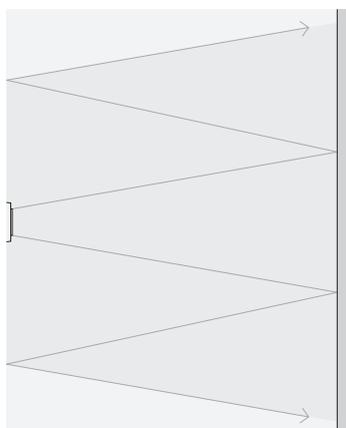
The room lighting switches on at full intensity when the user comes within approx. 5 cm of the Gira Sensotec, for example by making a movement of the hand within this range. This is particularly simple and convenient and also makes it easy for people with tactile limitations to turn on the light.



Contactless switching in the close-up range of 5 cm

**Increased range through reflected signals**

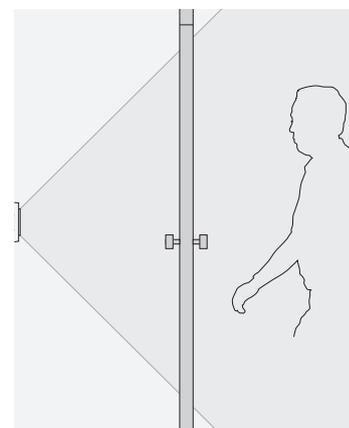
Metallic surfaces and concrete walls or solid masonry dampen or reflect the signals. Detection through these materials is possible only to a limited extent or not at all. However, the reflective effect can also be used to extend the range. In rare cases, the range may also be reduced.



Increased range through reflected signals

**Detection through doors and walls**

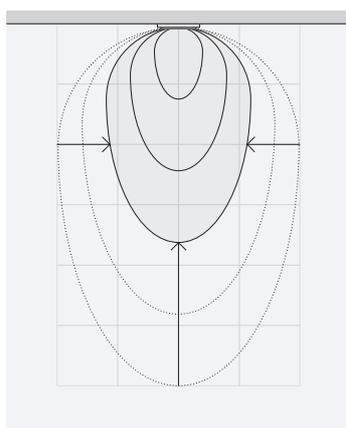
Motion can even be detected through materials such as glass, stone, plasterboard and wood.



Motion detection through doors

**Range individually adjustable**

In open spaces, the Gira Sensotec's range covers an area of about 4 x 6 m. However, using the remote control, the sensor's sensitivity can be configured more precisely to enable detection at shorter distances. Its precise adjustability allows the sensor to be configured so as to avoid detecting movements in neighbouring rooms, where this is not desired.



Adjusting the sensitivity of the sensor

**Dimmed lighting for glare-free effect**

Sudden brightness can be dazzling and startling in the dark. To avoid glare, it is possible to configure the desired level of brightness at which the room lighting will be switched on in automatic mode. The Gira Sensotec thus factors in the eye's adaptability and follows the recommendations of the guideline VDI/VDE 6008 Sheet 3 for barrier-free living spaces.

**Reliable detection, even at high temperatures**

The Gira Sensotec can detect movements reliably even at high temperatures and in areas with heat convection such as staircases. By contrast, a conventional infrared sensor can barely distinguish people from their surroundings at temperatures in excess of approx. 28 °C – thus no longer fulfilling its function reliably.

## Additional features of the Gira Sensotec LED

### Motion detection in the long range: automatic LED orientation light

If something moves in the detection range, the integrated LED orientation light is automatically switched on, if a defined brightness threshold has been reached. This makes orientation easier in the dark, thus improving security and convenience.

The light intensity of the dimmable LED orientation light can be set at a level sufficient for orientation purposes in living areas and smaller hallways. At the same time, the LED indicates where the switch for the room light is located.

### Glare-free, thanks to adjustable light intensity

Switching on the room light in areas such as hallways frequently causes glare. Thanks to the Gira Sensotec LED, this is no longer necessary. The integrated LED orientation light is dimmable and can be set at a pleasant, yet sufficient brightness level. The Sensotec LED also factors in the eye's adaptability and follows the recommendations of the guideline VDI/VDE 6008 Sheet 3 for barrier-free living spaces.



Discrete illumination and orientation in the living area

## Areas of application and examples of use

### Opening doors from afar and nearby without touching them

If the Gira Sensotec is used in conjunction with a coupling relay as a door opener, doors can be opened without contact solely at close-up range, or at close-up and long range, depending on the setting.

If the detection range is set to the lowest distance level, the door will open only at close-up range, i.e. at approx. 5 cm (e.g. in treatment rooms).

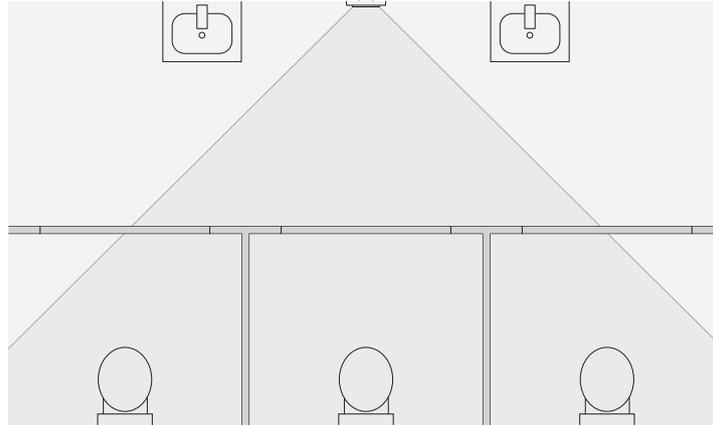
If the detection range is set to approx. 6 m, for example, and the dimming value is set to 100%, the door can be opened by a movement both in the long and close-up detection ranges (e.g. connecting doors).



Doors can be opened without touching them, e.g. in hospitals

### Equipping entire sanitary facilities with only a few devices

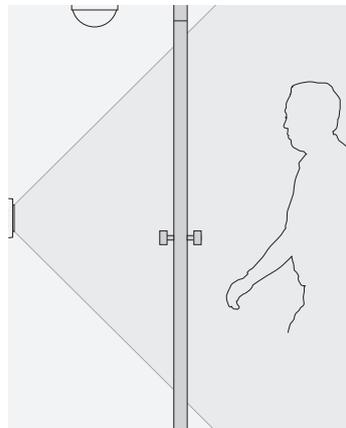
In public and semi-public sanitary facilities, all the cubicles can be covered using only a few devices – provided that the doors are made of penetrable material such as glass, stone, plasterboard or wood.



Example: three cubicles, one Gira Sensotec

### Front door detection

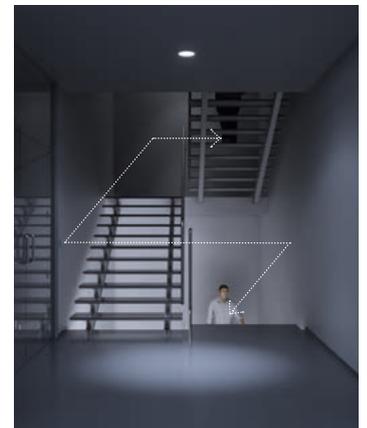
If the Gira Sensotec is installed opposite the front entrance, the hall light can be switched on as soon as motion is detected outside the front door. This is an added convenience, which also deters uninvited guests in certain circumstances.



Light on as soon as you enter the home

### Useful in hallways and staircases

As the Gira Sensotec makes use of spatial detection, it is particularly suited for use in solidly built hallways and staircases. The sensor is also able to detect movements that are outside its direct field of vision by picking up reflected signals. It can even detect motion in recesses and corners, meaning that fewer devices are needed.



Detection through signal reflections

### Additional areas of application and examples of use of the Gira Sensotec LED

#### Safe orientation in the early-morning darkness

People's eyes are particularly sensitive when they get up in the morning: The LED orientation light can be adjusted to a level of brightness sufficient for orientation, with no glare. And once your eyes have got used to the light, you can switch on the room light with a swipe of your hand in the close-up detection range.

#### Finding your way in dark hallways

Night owls returning late can use the LED orientation light to find their way along the hall without a main light waking up their fellow occupants.



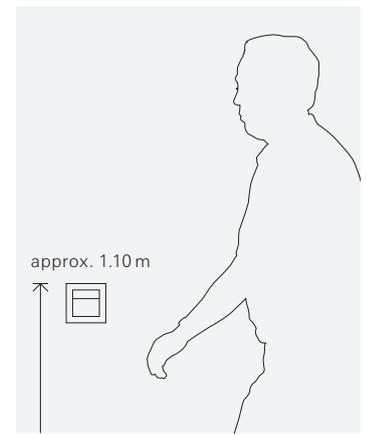
Lights hallways discreetly

## Planning tips

The Gira Sensotec and Gira Sensotec LED make use of HF sensor technology based on the reflection of electromagnetic waves. Detection depends on the reflecting surface, speed, and the type of object. When installing the device, consideration should be given to the spatial conditions, materials present and typical directions of motion within the room.

## Installation height

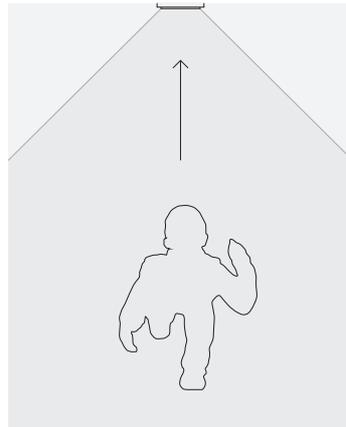
The Gira Sensotec and the Gira Sensotec LED should be mounted at the same height as normal switches, at approx. 1.10 m.



Ergonomically correct height

## Select an installation point based on the direction of motion

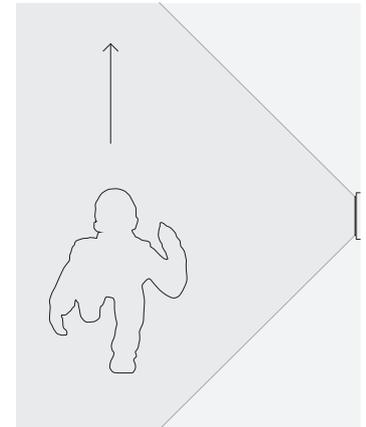
In contrast to motion detection using PIR technology, HF sensors are best at detecting people or objects that are approaching them directly.



Consider the direction of motion

## Direction of motion at right angles to the device

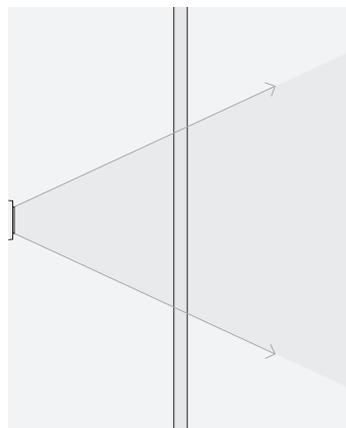
If the only possible installation point is one where movements will usually occur at right angles to the sensor's direct approach line, we recommend installing a motion detector that uses PIR technology – e.g. the Gira automatic control switch with Standard or Comfort top unit.



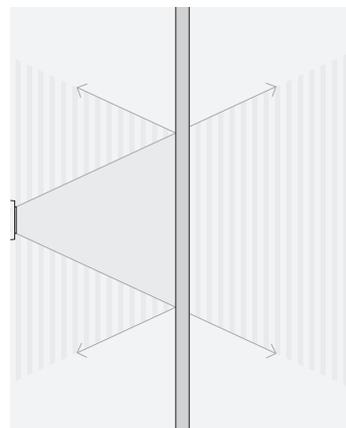
Direction of motion at right angles to the detector

## Behaviour with certain materials

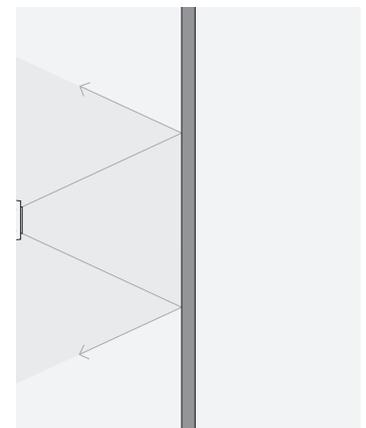
Motion can even be detected through materials such as glass, stone, plasterboard and wood. Reflective materials such as brick walls, metal doors and the like can significantly increase or decrease the front or side range.



Signals can pass through glass, plaster and wood.



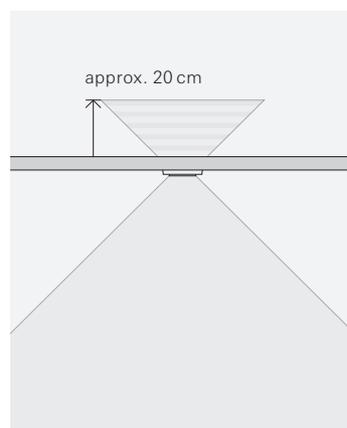
Stone dampens or partially reflects signals.



Metal and concrete reflect signals almost completely.

## Backward detection

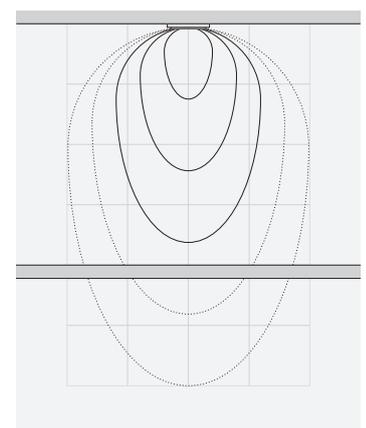
Some slight backward detection is possible through flimsy walls, e.g. plasterboard. This property should be factored in for safety-relevant applications.



Keep in mind that some backward detection is possible

## Limiting the detection range

The range of the sensor should be appropriately configured to prevent any undesirable detection in neighbouring rooms.



Keep in mind that undesired detection in neighbouring rooms is possible

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## Mounting and start-up

The UP device is connected to the 230V power supply. A load (typically a light) can be connected to the electronic output. After the device has been mounted and the power supply switched on, the device will need approx. 30 seconds for initialization, after which it is ready for operation.

The following parameters can be adjusted using the infrared remote control:

- Brightness of the orientation light
- Sensitivity (range) of the detection range
- Walking test (detection field), delay time = 1 sec.
- Threshold setting for max. ambient brightness (light will not be switched on if this value is exceeded)
- Delay time setting
- Master/Slave switchover – if several Sensotec devices are used in combination, only the Master's brightness will be evaluated
- Behaviour when switching off

Blue and red LED signals provide the installer with programming assistance.

if a coupling relay is attached to the output of the Gira Sensotec or Gira Sensotec LED, loads such as wound or electronic transformers, compact fluorescent lamps, fluorescent lamps or an electric door operator can be connected.

The output of the Sensotec or the Sensotec LED can also be connected to a KNX binary input if the dimming setting is at 100%.

## Technical data Gira Sensotec

- Rated voltage: AC 230/240 V~
- Mains frequency: 50/60 Hz
- Ambient temperature: 0 °C to +50 °C
- Operating efficiency: max. 0.5 W
- Contact type: ε
- Connected load at 25 °C
  - Light bulb: 4 to 300 W
  - HV halogen lamps: 4 to 300 W
  - HV-LED lamps: typically 4 to 60 W
- Power reduction per 5 °C transgression from 25 °C: -10 %
- Installation height: 1.10 m
- Detection range
  - Close-up: approx. 5 cm
  - Long: approx. 6 × 4 m
- Brightness: 10 to 1,000 lx
- Delay time: 1 s to 60 min
- Frequency: 5.8 GHz
- Transmission power: <1 mW
- Remote control battery: CR2025
- Protection class: II
- Number of auxiliary units: unlimited
- Total length
  - Load cable: 300 m
  - Auxiliary input cable: 300 m
- Power boosts: none
- Screw terminals connection
  - single wire: 1.5 to 2.5 mm<sup>2</sup>
  - fine-wire with core jacket: 1.5 to 2.5 mm<sup>2</sup>

## Technical data Gira Sensotec LED

- Rated voltage: AC 230/240 V~
- Mains frequency: 50/60 Hz
- Ambient temperature: 0 °C to +50 °C
- Operating efficiency: max. 0.5 W
- Contact type: ε
- Connected load at 25 °C
  - Light bulb: 400 W
  - HV halogen lamps: 400 W
  - Tronic transformers: 400 W
  - HV-LED lamps: typically 100 W
- Installation height: 1.10 m
- Detection range
  - Close-up: approx. 5 cm
  - Long: approx. 6 × 4 m
- Brightness: 10 to 1,000 lx
- Delay time: 1 s to 60 min
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## Product range Gira Sensotec

- System 55:
  - Pure white glossy
  - Pure white matt
  - Cream white
  - Aluminium colour
  - Anthracite
- Without remote control  
Order no. 2376 ..
- With remote control  
Order no. 2366 ..
- Can be installed in F100 ranges with adapter frames

## Product range Gira Sensotec LED

- System 55:
  - Pure white glossy
  - Pure white matt
  - Cream white
  - Aluminium colour
  - Anthracite
- Without remote control  
Order no. 2378 ..
- With remote control  
Order no. 2368 ..
- Can be installed in F100 ranges with adapter frames

## Gira Sensotec remote control

- Order no. 2373 00
- Please order frames separately.
- Subject to technical modifications.
- Current prices and additional information are available in the Gira catalogue, in the Gira online catalogue at [catalogue.gira.com](http://catalogue.gira.com), and at [www.gira.com](http://www.gira.com)