Operating instructions

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Sensotec LED
2368 .., 2378 ..

Automatic light

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Sensotec LED

Safety notes

Installation and mounting of electrical devices may only be carried out by qualified electricians.

Failure to observe the instructions can result in damage to the device, fire, or other dangers.

Danger of electric shock. Isolate before working on the device or load. Take account of all circuit breakers supplying dangerous voltage to the device or load.

Danger of electric shock. Device is not suitable for enabling.
Even when the device is switched off, the load is not DC-isolated from the mains supply.

Do not connect any LED lamps that are not expressly intended for dimming. These may damage the device.

Do not connect any lights with integrated dimmer. These may damage the device.

Danger of electric shock. Do not operate the insert without top unit.

Enable before installing the top unit: fault possible.

Keep button cells out of the reach of children! Consult a doctor immediately if button cells are swallowed.

Risk of explosion! Do not throw batteries into fire!

Risk of explosion! Do not re-charge batteries.

Device is not suitable for use in burglar alarm technology or alarm technology.

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

Device design

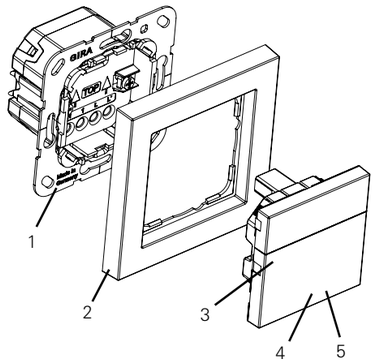

Figure 1: Device design

1 Flush-mounted insert
2 Frame
3 Top unit
4 Display LED (blue, red)
5 Brightness sensor

Function

Proper use

- Automatic LED orientation light switching, independent of long-range motion and ambient brightness.
- Switching light bulbs, HV halogen lamps, Tronic transformers with halogen lamps and dimmable HV LED lamps (retrofit).
- Motion in the close-up range switches on the room lighting.
- Operation with flush-mounted insert to dim the LED orientation light and switch on room lighting.
- Installation in indoor area on flush-mounted insert.
- Use deep device box.

When connecting dimmable HV LED lamps, only connect lamps of the same type and from one manufacturer.

Product features

- The Sensotec LED is an active motion detector. It detects motion in the long detection range regardless of the temperature and switches on the LED orientation light.
- Contactless switching, for instance, of lighting in close-up range.
- Contactless switching prevents soiling. This rules out contamination with viruses or bacteria by the user.
- Expansion of range of detection through auxiliary units.
- Switch-on with bulb-saving soft start.
- Functions can be adjusted with IR remote control.
- The switch-on brightness of the LED orientation light can be set.
- Teach-in function for adapting the brightness threshold.
- Individual delay time can be adjusted.
- Blue and red display LED.
- Fulfils the specifications of the guidelines in VDI/VDE 6008 Sheet 3.

Automatic mode

The Sensotec LED detects the motion of people, animals or objects in the close-up and long ranges.

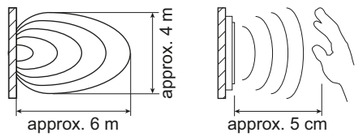

Figure 2: Long range – close-up range

- Long detection range
  The LED orientation light is switched on if the range of detection is entered and the brightness threshold is not met. The delay time is re-started with every motion detected.
  The light is switched off when no more motion is detected and the delay time expires.
- Close-up detection range
  Room lighting is switched on for the duration of the delay time. The delay time is re-started with every long-range motion detected.

Behaviour after mains failure

- Shorter than 0.2 seconds: Once mains are restored, the old switching condition is returned.
- Longer than 1 second: In automatic mode, the operating mode will be restored after max. 60 seconds and the room lighting is switched on for the duration of the delay time.

Main unit operation

Table 1: Display LED

Blue LED	Red LED	Signalling
On	Off	Room lighting permanently switched on
Off	On	Room lighting and LED orientation light permanently switched off
Flashes for approx. 1.5 s	Off	When a setting is confirmed with the remote control
Off	Flashes	Overload protection/ short-circuit protection triggered

Operation and the required settings are carried out with the IR remote control. Some settings are executed once during commissioning and should only be changed if ambient conditions change.

Room lighting can also be switched on via a Sensotec LED as an auxiliary unit or an installation button.

Table 2: IR remote control function buttons

Button	Function
Auto	Automatic mode
OFF	Brief actuation: Room lighting and LED orientation light permanent-off
OFF	Long actuation: LED orientation light dims to minimum brightness 0%
ON	Brief actuation: Room lighting permanent-on
ON	Long actuation: LED orientation light dims to maximum brightness 100%
Mas./ Slave	Setting main or auxiliary unit operation
	Close-up detection when room lighting is switched off, LED orientation light on or off
25 %, 50 %, 75 %, 100 %	Set detection sensitivity
- 5 %	Fine-tuning detection sensitivity in 5% decrements until minimum range
+ 5 %	Fine-tuning detection sensitivity in 5% increments until maximum range

Table 2: IR remote control function buttons

Button	Function
1 sec	Short-term operation
30 sec	Delay time 30 seconds
2 min	Delay time 2 minutes
5 min	Delay time 5 minutes
30 min	Delay time 30 minutes
START / STOP	Set individual delay time
	Night mode
	Switches on when twilight falls
	Setting for staircases
	Day mode, switches on regardless of brightness level
TEACH	Save ambient brightness as brightness threshold
TEST	Test mode
RESET	Reset to factory settings

Room lighting permanent-off

- Briefly press the **OFF** button.

Room lighting and LED orientation light are permanently switched off. The red LED illuminates.

Room lighting permanent-on

- Briefly press the **ON** button.

Room lighting is permanently switched on and the LED orientation light is switched off. The blue LED illuminates.

Setting brightness LED orientation light

- Press and hold the **OFF** button.
  LED orientation light gets darker until minimum brightness 0%.
- Press and hold the **ON** button.
  LED orientation light gets lighter until maximum brightness 100%.

Setting is abandoned automatically after 5 minutes or immediately by pressing the **Auto** button.

Setting main or auxiliary unit operation

A load is always connected to a main unit. A main unit behaves like an individual device. An auxiliary unit switches the LED orientation light in the long range and the room lighting in the close-up range.

- Press the **Mas./Slave** button.
  Change from main unit to auxiliary unit operation or from auxiliary unit to main unit operation.

The changeover is signalled by the flashing blue LED. If the blue LED then illuminates continuously for 3 seconds, the device is in main unit operation.

If the room lighting flashes when motion is detected, a main unit has been set as an auxiliary unit.
Reconnect the load or change the setting (main/auxiliary unit).

Setting behaviour for close-up range

Mode 1: When motion is detected in the close-up range, the room lighting is switched on for the duration of the delay time. Further motion in the close-up range switches the room lighting off and the LED orientation light on.

- or

Mode 2: When motion is detected in the close-up range, the room lighting is switched on for the duration of the delay time. Further motion in the close-up range switches the room lighting off.

- Press the button.
  Change between the two modes.

Setting detection sensitivity (range)

A reduction in the detection sensitivity causes a decrease in the overall detection field.

- Press **25 %**, **50 %**, **75 %** or **100 %**.

Detection sensitivity is set.

Fine-tuning detection sensitivity (range)

- Press **- 5 %**.
  Detection sensitivity is reduced in 5% decrements to the minimum range.
- Press **+ 5 %**.
  Detection sensitivity is increased in 5% increments to the maximum range.

Setting fixed delay time

- Press the **1 sec**, **30 sec**, **2 min**, **5 min** or **30 min** button.

Setting individual delay time

The individual delay time can be set in a range from 1 second to 60 minutes. It can be set back to one of the fixed delay times at any point.

- Press the **START** button.
  Delay time starts.
- Once the desired delay time is reached, press the **STOP** button.
  The delay time is saved.

Setting brightness threshold

Either one of four pre-defined brightness thresholds (see table IR remote control function buttons) or an individual brightness threshold can be set (see Saving ambient brightness as brightness threshold).

- Press , , or .

Saving ambient brightness as brightness threshold

With the help of the teach function, the ambient brightness can be saved as brightness threshold.

Device is in automatic mode.

- Press and hold the **TEACH** ☼ button for longer than 10 seconds.
  LED flashes red and then, after approx. 10 seconds, blue.

Switching on test mode

The test mode serves to check the range of detection.

- Press the **TEST** button.
  Test mode will stop automatically after 5 minutes or immediately by pressing the **Auto** button.

Table 3: Test setting

Function	Value
Dimming value	100%
Brightness threshold	Day mode
Delay time	1 second

Executing a reset

Through a reset, the device is reset to factory settings.

- Press and hold the **RESET** button for longer than 3 seconds.
  LED flashes red and then, after approx. 3 seconds, blue.

Table 4: Factory setting

Function	Value
Automatic mode	On
Dimming value	100%
Detection sensitivity	100%
Brightness threshold	Twilight falls
Delay time	2 minutes
Close-up detection range	Mode 1
Operating mode	Main unit

Auxiliary unit operation with installation button, NO contact

- Press the button.

The room lighting is switched on.

Mounting and electrical connection

DANGER!

Electric shock if live parts are touched.

Electric shock may lead to death.

Isolate all appropriate circuit breakers before working on the device or load. Cover up live parts in the vicinity!

Selecting installation site

In choosing the installation site, the following points should be observed.

- Recommended installation height: 1.10 m.
- Choose a vibration-free installation site. Vibrations may lead to undesired activation.
- Motion detection through doors, glass panes or thin walls is possible.
- Metallic surfaces, e.g. frames, metal doors and frames, dry wall studding, aluminium blinds or metal cabinets, affect the range of detection through attenuation or reflection.
- Observing direction of motion (see Figure 3).
- Detection depends on the reflecting surface, speed, and type of object (person, animal, object, etc.).

Figure 3: Direction of motion

The front and side range can be significantly increased or decreased by reflective surfaces such as brick walls, metal doors or similar surfaces.
Slightly rearward detection is possible through thin walls.

Expanding range of detection

To expand the range of detection, connect further Sensotec LEDs, see connection diagram (Figure 4). The main unit evaluates the motion signals from the auxiliary unit.

When motion is detected in the long range, every Sensotec LED switches on its LED orientation light independently of the other Sensotec LEDs.

The room lighting is switched on when motion is detected in the close-up range of a Sensotec LED main or auxiliary unit or through pressing an installation button. The room lighting remains switched on for as long as a Sensotec LED detects motion.

Mounting and electrical connection

Use a deep device box for wiring 1 x 5 x 2.5 mm², 2 x 5 x 2.5 mm² or 2 x 5 x 1.5 mm².

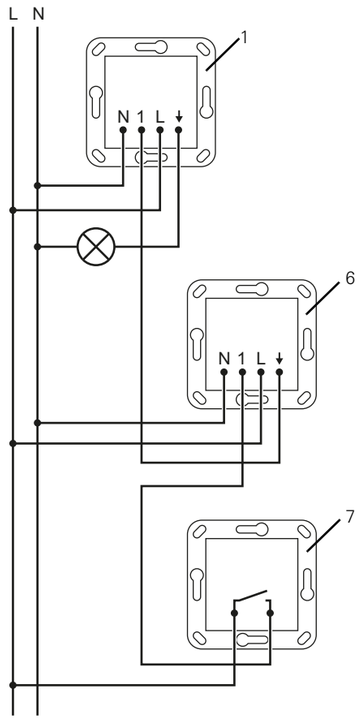

Figure 4: Connection diagram with auxiliary unit

1 Flush-mounted insert main unit

Optional:

6 Flush-mounted insert auxiliary unit

7 Installation button, NO contact

- Connect flush-mounted insert in accordance with connection diagram (Figure 4).

Illuminated installation buttons may only be connected if they have a separate N terminal.

- Only connect auxiliary units to the same phase.
- Mount the insert in the device box. The connection terminals must be at the bottom.

Do not install top unit below mains voltage or replace, as this may cause a fault.

- Install frame and top unit.
- Switch on mains voltage.
- Carry out commissioning.

Commissioning

Inserting battery in the IR remote control

Keep battery and device contacts grease-free.

WARNING!

Danger of chemical burns.

Batteries may burst and leak.

Only replace batteries with the same or equivalent type.

- Insert the enclosed battery correctly (see label on IR remote control).

Configuring device

For details, see Operation chapter and table 1, 2. The IR remote control is ready for operation.

- Set main or auxiliary unit mode, optional.
- Set brightness threshold.
- Set delay time.
- Set room lighting behaviour in the close-up detection range.

Checking range of detection

For details, see Operation chapter and table 1, 2. The IR remote control is ready for operation.

- Switch on test mode.
- Check range of detection. Ensure reliable detection and check for interference sources.
- If necessary, set detection sensitivity.

Technical data

Rated voltage:	AC 230/240 V~
Mains frequency:	50/60 Hz
Ambient temperature:	0 °C to +50 °C
Operating efficiency:	
Device	max. 0.5 W
LED orientation light	max. 0.2 W
Contact type:	ε
Soft start	Leading edge
Contact rating at 25 °C:	
Light bulb:	400 W
HV halogen lamps:	400 W
Tronic transformers:	400 W
HV LED lamps:	type 100 W
Installation height:	1.10 m
Range of detection:	
Close-up range:	approx. 5 cm
Long range:	approx. 6 x 4 m
Brightness:	10 to 1000 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
Screw terminals connection	
single-wire:	1.5 to 2.5 mm²
fine-wire with core jacket:	1.5 to 2.5 mm²

Troubleshooting

LED orientation light does not switch on

Cause 1: The ambient brightness exceeds the brightness value set.
Set brightness value.

Cause 2: Device does not detect motion.
Increase detection sensitivity.

Cause 3: Off is activated.
Switch on automatic mode.

Device switches on without motion

Cause 1: Interference source in range of detection.
If possible, remove interference sources.
Reduce detection sensitivity.

Cause 2: An object (plant, curtain, etc.) is moving in the range of detection.
Remove object.
Reduce detection sensitivity.

Cause 3: The range of detection penetrates doors, glass panes or thin walls and detects motion there.
Reduce detection sensitivity.

Slightly rearward detection is possible through thin walls.

Device continuously switches on and off when motion is detected

Cause 1: Test mode is switched on.

Cause 2: Short-term operation is switched on.
Switch on automatic mode.

Motion detector switches off despite motion

Cause 1: The motion detector does not detect any motion.
Increase detection sensitivity.

Device does not switch off

Cause 1: Interference source in range of detection, motion detector constantly detects motion.
If possible, remove interference sources.
Reduce detection sensitivity.

Cause 2: On is activated.
Switch on automatic mode.

Device does not react to IR remote control

Cause 1: IR remote control is outside of range.
Move closer to the device.

Cause 2: Battery in IR remote control is empty.
Change battery (see rear of IR remote control).

Lighting has switched off

Cause 1: Excess-temperature protection triggered.
Disconnect the device and switch off corresponding circuit breakers.
Reduce the connected load.
Leave device to cool for at least 15 minutes.
Switch circuit breakers on again.

Cause 2: Overload protection/short-circuit protection triggered. The red LED flashes.
Disconnect the device and switch off corresponding circuit breakers.
Repair short circuit.
Switch circuit breakers on again.

The short-circuit protection is not based on a conventional fuse, no electrical isolation of the load circuit.

Device does not switch on in combination with several lamps

Short-circuit protection triggered.

Reduce number of lamps.

Reduce connected load.

Replace lamps with another type.

The LED orientation light of an auxiliary unit is switched on, although the room lighting is on

Cause: Brightness threshold set too high on auxiliary unit.
Reduce the brightness threshold on the auxiliary unit.

Warranty

The warranty is provided in accordance with statutory requirements via the specialist trade.

Please submit or send faulty devices postage paid together with an error description to your responsible salesperson (specialist trade/installation company/specialist electrical trade). They will forward the devices to the Gira Service Center.

Remove empty batteries immediately and dispose of them in an environmentally-friendly way. Do not dispose of batteries with household waste. Local authorities provide information about environmentally-sound disposal. The end consumer is legally required to return used batteries in accordance with legislative requirements.