

Operating and mounting Instruction for B.E.G.-Occupancy detector as wall switch Indoor 180-R

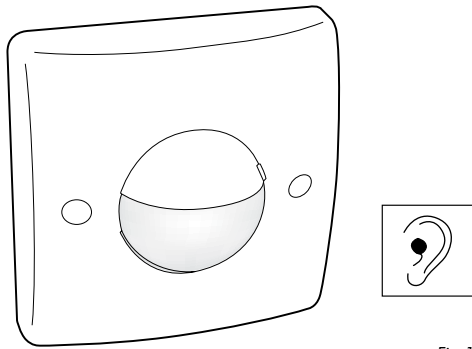


Fig. 1

CAUTION: Have all work involving the 230VAC mains supply carried out by a qualified electrician! Before starting disconnect the mains!

Article	detection angle	Part.-Nr.
Indoor 180-R	180°	92610

1. Product description

The LUXOMAT® Indoor 180-R is an occupancy detector designed for flush-mounting in indoor lighting applications.

The Indoor 180 utilizes **infrared- and acoustic**-sensing technology to detect the presence and movement of persons (as well the infrared-radiation of larger animals and objects).

Furthermore it contains a **twilight (Lux) sensor**, a microphone and a **timer**.

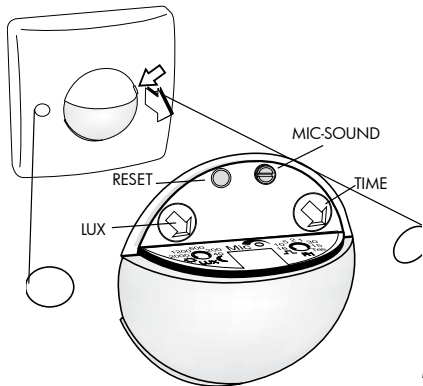


Fig. 2

Lux-level, microphone and timer can be set here: remove top cover as shown, this will give access to the controls. Please follow the markings on the flat top of the lens for adjustment.

2. Function

With the LUXOMAT® Indoor 180 you acquired a **B.E.G.**-motion detector for flush mounting in indoor and outdoor applications.

The LUXOMAT® Indoor 180 is an automatic switching device which operates on the principle of infrared technology. It continuously measures the ambient temperature and the ambient lightlevel and compares it with the infrared radiation emitted from any moving form which enters its detection zone. Any differential results in automatic switching, provided the lightlevel is beyond a preset lightlevel.

Contrary to other motion detectors which reacts to moving heat-sources only, with the LUXOMAT® Indoor 180 you will not be left in the dark unless there is no more motion because through a combination with an acoustic sensor it reacts additionally to noises.

Detecting movement

The sensitivity of LUXOMAT® Indoor 180 has been designed to detect the human form including of course children and it is therefore possible that some animals, principally large

dogs, will also switch the system. This is unavoidable but, in most instances, offers an advantage as unwanted animals are frightened away by sudden lighting. As long as motions are detected the connected lights remain switched on. When there is no more motion the light is switched off after the preadjusted time.

3 sec. only after switching off the LUXOMAT® Indoor 180 can be activated again by motions.

The LUXOMAT® Indoor 180 is equipped with a semiballsize-fresnel lens which gives a semicircular detection field (horizontally appr. 180°, vertically appr. 60°). With regard to the recommend fixing height of 1.10 - 2.20m and to a motion transversally to the lens segments the radius of the detection field is appr. 10m.

Acoustic function

As long as the acoustic sensor receives noises e.g. by speech or music the LUXOMAT® Indoor 180 remains switched-on even when there are no more motions – the light stays on. Every noise and every motion retriggers the unit again for the period of preselected time. Unless there is no more motion and no more noise the LUXOMAT® Indoor 180 switches the light off automatically.

Immediately thereafter the Indoor 180 can be switched on again e.g. by calling when this is been done within a period of 8 sec. However has the Indoor 180 not been activated for a longer period, then the unit can be retriggered only by a motion. This combination protects the unit to be switched on by unwanted noises.

3. Prior to Installation

Before installation by all means the following aspects have to be considered:

- The LUXOMAT® Indoor 180 is designed for the installation in standard switch flushmount boxes. The recommended fixing height is 1.10 to 2.20m.
- Not more than eight LUXOMAT® Indoor 180 can be switched into parallel, in order to avoid potential fault switchings.
- The connected load must not exceed the following values:

180-R (Relais version):

Ohmic load	2300 W, cosφ=1
Inductive load	1150 VA, cosφ=0.5

- There must be no obstacles in the view of the motion detector, since infrared rays cannot penetrate solid materials.
- The LUXOMAT® Indoor 180 is an automatic light switch which cannot be used for intrusion applications.

Selection of fixing place:

The optical system of the LUXOMAT® Indoor 180 is designed for fixing heights of 1.10 to 2.20m. A typical application is the replacement of a wall switch in appr. 1.10m height or for room surveillance in 2.20m height (pt. 7).

Additionally to the horizontal detection plane the Indoor 180 has a vertical detection plane which detects also movements underneath the motion detector. The maximum range is 10m, independently of fixing height.

The range cannot be adjusted electronically or manually, instead unwanted detection areas have to be eliminated by adhesive tape that must be put on the corresponding lens segments.

Frontal approach

To get a satisfying functioning of the motion detector the following typical property of infrared motion detectors must be considered:

Motion detectors are most sensitive when motions are across the detection zones. In case of a frontal approach the sensitivity and hence the range is considerably reduced (pt. 7).

4. Installation

The detector can be installed in conventional installation sockets. Installation should be made to a wall with a height of 1.10 to 2.20m.

Mounting diagram

- **Clear mains' voltage!**
- Connect wiring as shown:

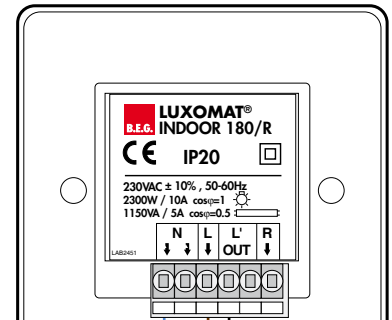


Fig. 3

- Depending upon the concealed housing, fasten at the top and the bottom or left and right using the enclosed screws.

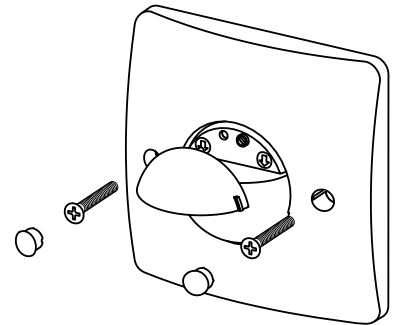


Fig. 4

- Additionally to the horizontal detection plane the Indoor 180 has a vertical detection plane which detects also movements underneath the motion detector. In order to prevent detection within the vertical range of coverage, apply the cover.

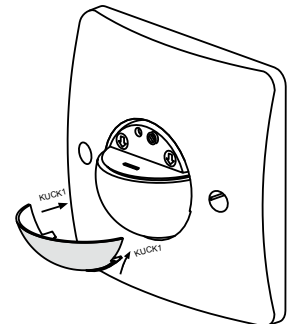


Fig. 5

- Switch on mains' voltage. The LUXOMAT® Indoor 180 is ready for use after having completed a **self-checking cycle of about 60 seconds**.
- Settings of the operating time and twilight value.
- The covering-cap can be removed as shown in the drawing.

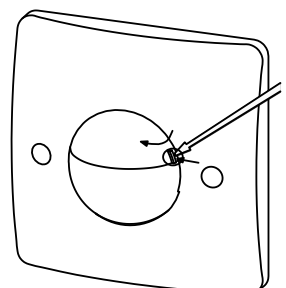


Fig. 6

5. Adjustments of twilight switch / timer and acoustic-sensor

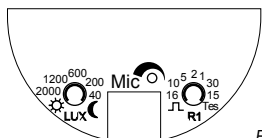


Fig. 7

4.1 Lux-level setting (Photocell)

The lux-level can be set between 2 and 2000 Lux

- Night operation
- Day and night operation

4.2 On-period / switch-off delay time

The switch-off delay time can be set from ca. 15 sec. to 16 min.

(When setting into operation it is recommended to use the shortest timesetting for convenient testing of range and noise sensitivity (pt. 4.3).)

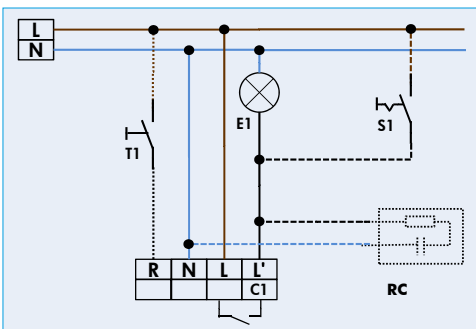
4.3 Noise sensitivity

Fully counterclockwise means highest sensitivity. Fully clockwise means noise detector switched off. Intermediate values to be adjusted accordingly to local conditions. Functioning of the noise detector will be indicated by a LED located behind the lens.

Lighting of the LED means the noise detector is functioning and triggers the timer again.

6. Wiring diagrams:

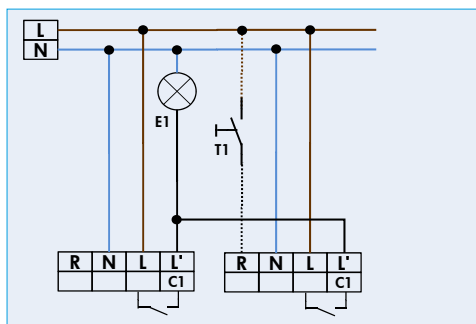
Standard mode with 1-channel motion detectors Indoor 180-R



Optional

- S1 = switch for permanent light
- T1 = NO button, manual switching additionally possible
- RC = RC-suppression kit if required

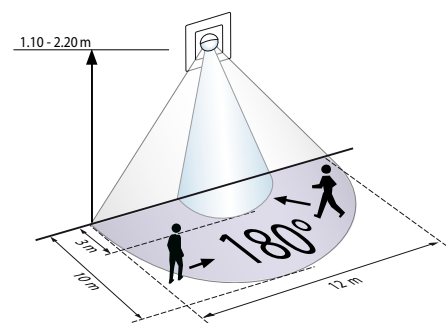
Parallel connection with 1-channel motion detectors Indoor 180-R (max. 8 parallel)



Optional

- T1 = NO button, manual switching additionally possible

7. Wiring diagrams:



- 1 ■ Walking towards
- 2 ■ Walking across

8. Technical data

- Supply voltage 230 VAC \pm 10%
- Detection angle 180° horizontally
ca. 60° vertically
- Range (1.10 - 2.20 m mounting height)
max. 10 m for lateral walking
appr. 3 m for frontal walking
- Protection / class IP20 / II / CE
- Dimensions L x W x H 86 x 86 x 44 mm
- Ambient temperature -25°C to + 50°C
- Cabinet material UV- and shock-resistant
Polycarbonate
- Switching power
180-R (Relay version):
 - Ohmic load 2300 W, $\cos\phi=1$
 - Inductive load 1150 VA, $\cos\phi=0.5$
with transformer 1000 VA
 - Halogen lamps
- Timesettings ca. 15 sec. - 16 min. or impulse
- Photo electric switch ca. 2 - 2000 Lux

9. Electromagnetic Compliance (EMV)

When positioned within the direct vicinity of high powered radio transmitting equipment (e.g. portable phones, H.A.M., taxi, police, fire, ambulance, radio operators etc.) false activation switching may be experienced. However, this influence will not damage the sensor electronics.

The automatic switching of the sensor will be switched off as soon as the source of radio interference stops transmitting.

10. Trouble shooting – Practical hints

1. Lamp does not light up

- Tungsten halogen lamp defective
Replace tungsten halogen lamp
- No mains connection
Check connection by qualified electrician
- Incorrect setting of lux level
Correct setting of lux level
- Unit mounted too high
Mount at recommended height
- PIR detector lens obstructed by dirt or other objects
Clean lens or remove objects
- Main fuse defective
Check or replace by qualified electrician

2. Delayed lamp activation

- Mounted too high
Mount at height stated in specification
(1.10 - 2.20 m)
- Direct line of approach
Re-direct walking so that the approach is not frontally

3. Lamp stays on continuously

- Continual thermal activity detected ie. extractor fan, central heating ducts
Check for any activity which could cause unit detection to be maintained
- Delay time set too high
Reduce time delay
Check ambient noise-level, if necessary switch off noise-sources

4. Limitation of range (not up to the minimum specification)

- Mounted too high
Correct mounting height
- Temperature difference between ambient temperature and source of heat too small
No improvement possible
- Direction of movement aimed directly at lens of motion detector
Move laterally to detector