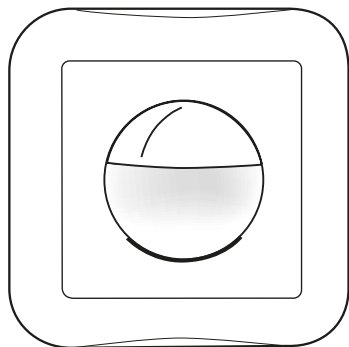


# B.E.G. LUXOMAT®

## Operating and mounting instruction B.E.G. motion detector Indoor 180-SC



Thank you for purchasing the motion detector. You have opted for a quality product from the **B.E.G.** range and for one which has been manufactured, tested, packaged and despatched with the utmost care. Please read the information contained in these directions before commencing assembly. We reserve the right to make any technical adjustments which are in the interests of product-improvement.

**CAUTION: have all work involving the 230 V mains supply carried out by a qualified electrician! Before starting disconnect the mains!**

Type	Part-No.
Indoor 180-SC, fully fitted, pure white	92650
Sensorinsert for Indoor 180-SC	92668
Covering IP20, pure white	92630
Covering IP20, traffic white	92631
Covering IP20, cream	92632
Covering IP20, silver	92633
Covering IP20, anthracite	92634
Covering IP54, pure white	92139
<b>Accessory</b>	
Stair light switch SCT1	92655

### 1. Function

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

**LUXOMAT®** Indoor 180-SC was specifically conceived for use with automatic stairway lighting devices.

The **LUXOMAT®** Indoor 180-SC is used to replace standard light-contact push buttons. You can do this in both 3-wire as well as with 4-wire circuits. It is not necessary to rewire.

**LUXOMAT®** Indoor 180-SC needs only two wires and takes the power it needs to operate from the stairwell lighting-timer switch-off-device (ca. 4 mA/230 VAC).

#### Detecting movement

The **LUXOMAT®** Indoor 180-SC's motion detection corresponds to the functioning of typical motion sensors, i.e., thermal radiation of persons and other heat sources (e.g. animals) moving within the sensing area are measured and the ambient luminosity is compared with a twilight threshold value.

#### Ambient luminosity

Set the twilight threshold value on the "LUX" rotary control. The LED (behind the Fresnel lens) flashes

quickly if the ambient luminosity is set higher than the adjusted twilight threshold. The LED is extinguished as soon as the ambient luminosity is less than the adjusted twilight threshold.

#### Triggering the stairwell lighting-timer

If the ambient luminosity sinks below the twilight threshold value and a movement is detected, the **LUXOMAT®** Indoor 180-SC closes the supply feed through a high-performance FET for ca. 100 msec. (this corresponds to briefly pushing the button). This short impulse actuates the stairwell lighting-timer and the connected lighting is switched on for the switch-off delay time set on the stairwell lighting-timer.

#### Post-triggering the stairwell lighting-timer

A new impulse can be triggered only after ca. 10 seconds. This delay is necessary to ensure the **LUXOMAT®** Indoor 180-SC has sufficient power. As it is possible to connect several detectors (up to ten detectors) in parallel to one stairwell lighting-timer, each detector is capable of detecting the impulse from one connected detector and, if applicable, to generate a new impulse delayed correspondingly.

#### Suppressing the twilight threshold-value query

Each impulse leads to the stairwell lighting-timer being switched on or post-triggered. That means all the detectors in the stairwell area "see" the switched-on connected lighting so that the evaluation of the twilight threshold value becomes difficult or even impossible. Therefore, upon detection of an impulse, all detectors suppress the twilight threshold-value query for the time set on the "MIN" rotary control.

Every detected motion leads to a post-triggering impulse, independent of the ambient luminosity. We recommend setting the time set on the "MIN" rotary control either the same or a bit higher than the switch-off delay time set on the stairway lighting-timer.

The LED displays as follows during the suppression phase of the current ambient luminosity:

-> bright: the LED flashes very quickly

-> dark: LED off

#### Detection area

The **LUXOMAT®** Indoor 180-SC is equipped with a hemispherical Fresnel lens, which produces a semicircular sensing area (horizontal 180°, vertical ca. 60°) in wall installations. The size of the monitored area is 10 m from the front and side for the recommended installation height of 1.10 - 2.20 m during movements that are crossways to the line of the lens segments.

#### The number of parallel connected LUXOMAT® Indoor 180-SC's

Do not connect more than ten **LUXOMAT®** Indoor 180-SC's in parallel in order to prevent possible spurious triggering.

The max. possible quantity is also restricted through the type of stairway lighting-timer used:

**Caution** – if not enough power can be drawn from the stairway lighting-timer, the supply voltage for the motion sensors sinks and malfunctions occur in the motion sensor. Furthermore, the stairway lighting-timer switch might be permanently switched on.

#### Wiring/connection

It is necessary to pay attention to the polarity of the two wires.

Make sure you observe the following points prior to installation:

- The **LUXOMAT®** Indoor 180-SC is intended for installation in standard size-I inlet-sockets. We recommend installing at a height of 1.10 to 2.20 m.
- Ensure the view is clear as the infrared rays cannot penetrate through solid objects.
- If you do not want movement underneath the sensor to be detected, you can clip the enclosed covering cap (A) onto the mask cover (B) \*If the sensor covers zones that should not be monitored, the corresponding lens segments must be masked off, for instance with transparent tape, which can be determined by testing.

#### Frontal approach

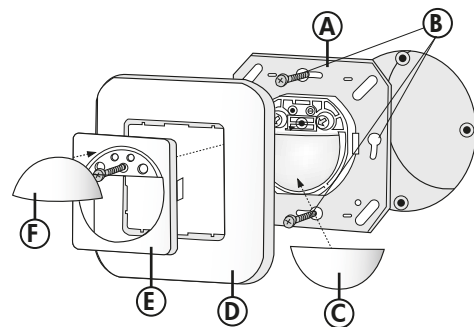
**Motion sensors are most sensitive if the movement is crossways to the line of the lens segments. When being approached from the front the sensitivity and thus the effective range is significantly reduced.**

### 3. Installation

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

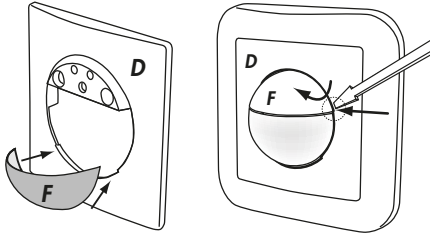
For the combination with switches of leading manufacturers the enclosed additional blinds can be used.

#### Mounting diagram



- **Clear mains' voltage!**
- Connect sensor part (A) according to the regulations and as shown in the wiring diagrams (pt. 5).
- Depending upon the concealed housing, fasten at the top and the bottom or left and right using the enclosed screws (B).
- 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 cover (C).
- Next introduce and fasten the blinds (D) and the covering-cap (E).
- 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.
- Mount covering-cap (F).
- The covering-cap (F) can be removed as shown in the drawing.



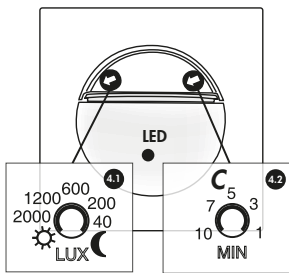
For outdoor installations additionally the IP54-accessory-fixing-set has to be mounted (Part nr. 92139).

#### 4. Adjustment – Rotary control

##### 4.1 Twilight threshold value:

The lighting actuator value can be preset between 5 and 2000 Lux

- ☾ Night setting
- ☀ Day/night operation

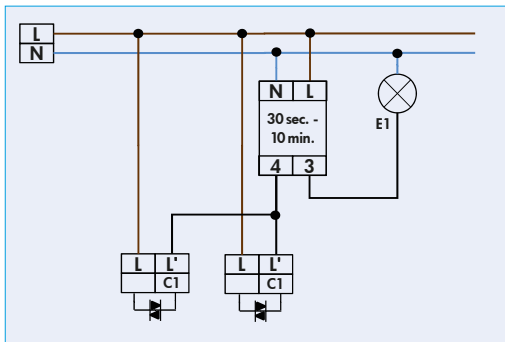


##### 4.2 Suppressing the twilight threshold-value query

The suppression time can be set from ca. 1 min. to 10 min.

#### 5. Wiring diagrams:

Standard mode with 1-channel motion detector (e.g. stairs) Indoor 180-SC (max. 10)



#### 6. Technical data

- Operating voltage via the stairway lighting-timer 230 VAC
- Power consumption ca. 4 mA /230 VAC
- Impulse duration 0.1 sec.
- Impulse switching capacity max. 200 mA /230 VAC
- Detection area 180° horizontal ca. 60° vertical
- Detection range at 1.10 - 2.20 m installation height: max. 10 m during sideways passing ca. 3 m during direct approach
- Twilight threshold value ca. 2 - 2000 Lux
- Twilight threshold-value suppression ca. 1 min. - 10 min.
- Dimensions L x W 87 x 87 mm Installation depth 36 mm
- Protection IP20, II (with accessory IP54)
- Housing UV- and shock-resistant Polycarbonate

##### Notice:

The impeccable function can only be guaranteed by using the SCT1 staircase lighting time switch (92655) of **B.E.G.**

Commercially available stairway-lighting timer-switches differentiate according to the type and manner in which the neon glow-lamp push button is energized.

There are models available with integrated half-wave or full-wave rectification.

As the **LUXOMAT®** Indoor 180-SC uses the resulting neon glow-lamp supply to power itself, this determines the current consumption and thus the max. possible number of the **LUXOMAT®** Indoor 180-SC's.

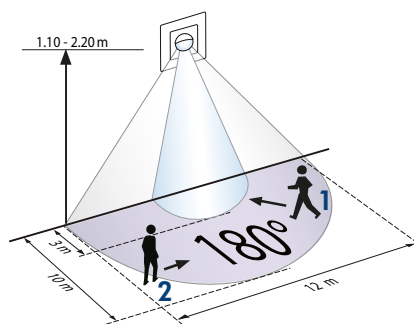
##### Caution:

Full-wave rectification leads to greater dissipation power-loss and thus to the **LUXOMAT®** Indoor 180-SC becoming heated-up.

#### 7. Electromagnetic compatibility

It cannot be excluded that spurious triggering can be caused when placed directly in the area of strong radio transmitters (e.g. radio operators, taxi control centres, cell phones etc.). However, these phenomena do not cause any defects in the sensor technology. If such spurious triggering does occur, the **LUXOMAT®** Indoor 180-SC automatically switches off after the source of HF interference has disappeared.

#### 8. Detection area



- 1 ■ Walking towards
- 2 ■ Walking across

#### 9. 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*