# B.E.G. LUXOMAT® RADAR

Installation and Operating Instruction for B.E.G. - RADAR-Occupancy detectors HF-MD2-SM

1. Mounting preparations

Work on the 230 V mains supply may only be carried out by qualified professionals or by instructed persons under the direction and supervision of qualified skilled electrical personnel in accordance with electrotechnical regulations.

Disconnect supply before installing!
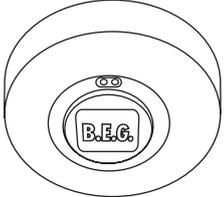
2a. Function

Contrary to motion detectors with passive infrared technology, high frequency motion detectors emit a 5.8 GHz signal.

The measuring principle is also different: the change in frequency of waves reflected by a moving object is measured and in this way a movement is detected (as is known by everyone from a passing car with its siren switched on, e.g. police car or fire engine).

This principle works better when the signal source is frontally approached, and for that reason radar motion detectors are **more sensitive to frontal approach** compared to lateral passing by.

Moreover, this process is almost temperature-independent, whereas temperature is the basis for the PIR motion detectors' temperature measuring process.

Infrared waves do not pass through walls, but high frequency waves do. As a consequence, a clearly sharp demarcation of a room is not possible with HF technique, as it is with e.g. PIR technique. Therefore, persons in neighbouring rooms may also be detected and lights may be switched on.

After detection of a motion, the detector switches on the lights during the predefined period of time (approx. 5 sec. - 15 min.).

2b. Transmitted power / delete

Almost the same range of frequency as in W-LAN is used. The hight-frequency output of the HF sensor is approx. 10 mW - that's just 1,00 th of the transmission power of a mobile phone or mirowave oven.

< 10 mW   approx. 1000 mW
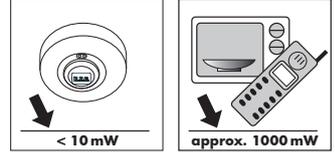
3. Article / Part nr.

Type	Part nr.
HF-MD2-SM	94402

4. Installation

Disconnect the power supply before attempting any work on the unit!
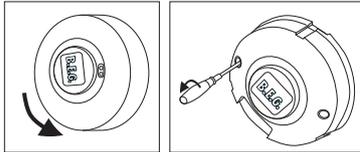
The circular cover ring must be removed prior to assembly. To do this, twist the lens anticlockwise through approximately 5° and lift off.

Having connected up the wires in accordance with regulations, secure the detector with 2 screws (∅ 6 mm). After installation replace the lens and lock (turn clockwise).

Mains to be connected.

5. Putting into operation / Settings (Fig. 1 and 2)

Twilight setting (Rotary control dial **A**)
The chosen light response threshold can be infinitely varied from approx. 2 - 2000 Lux.
Symbol "**MOON**" = dusk-to-dawn operation
Symbol "**SUN**" = daylight operation

Time setting (Rotary control dial **B**)
The light can be set to stay ON for any period of time between approx. 5 sec. and a maximum of 15 min. Any movement detected before this time elapses will re-start the timer. There will be no twilight evaluation (daytime operation) for as long as the motion detector is switched on.
Note: After the light switches OFF, it takes approx. 1 sec. before it is able to start detecting movement again.

HIGH OFF LOW **Range / Sensitivity** (Switch **C**, Rotary control dial **D**)
Range / sensitivity of the sensor can be reduced over switch **C** and potentiometer **D**.
Switch **C** = "**LOW**": Range can be adjusted between approx. 0.4 - 16 m ∅.
Switch **C** = "**HIGH**": Range can be adjusted between approx. 6 - 16 m ∅.
Switch **C** = "**OFF**": Detector is switched off.
Note: We recommend to adjust the range starting at the maximum and then reducing it, if not time delay may occur while setting the range.

Test setting
In order to adjust the detection range during the day, the twilight value must be set to day ("sun" symbol) and time should be set to the minimum (approx. 5 sec.).

6. Range of Coverage max.
(Mounting height = 2.50 m / Switch C = "HIGH")

Wall mounting

16 m 0,4 m

8 m

Walking towards = Best detection

Ceiling mounting

16 m 0,4 m

Walking towards = Best detection
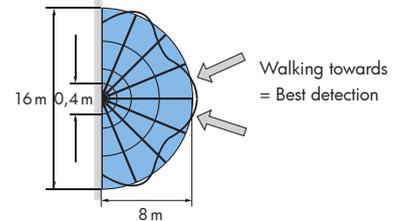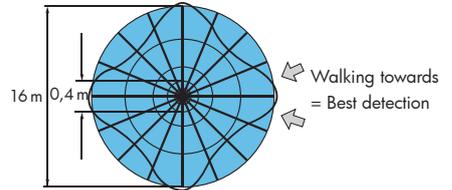
7. Technical data

Power supply: 230 V~ ±10 %
Switching power: 1200 W
Time settings: approx. 5 sec. - 15 min.
Photo electric switch: 2 - 2000 Lux
Range: ∅ 0.4 - 16 m
Detection area: 360°, resp. 160°
Mounting: wall or ceiling installation
HF-transmitter consumption: 5.8 GHz, < 10 mW, ISM Band
Power consumption: < 1 W
Protection: IP 20 (only for inside use)
Class: II / CE
Dimensions: ∅ 116.5 x H 45 mm
Ambient temperature: -15 °C to +50 °C

Note: When taking the detector into operation or after each power failure, the motion detector will switch on for a duration of 3 seconds.

CE **Declaration of conformity:** The product complies with the low voltage recommendation 2006/95/EC and the EMV recommendation 2004/108/EC.

∅ 95 mm   ∅ 95 mm   40 mm
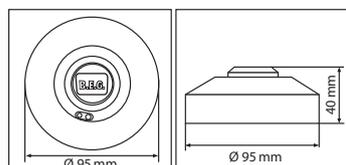
8. Connections (Fig. 3)

Connect power supply as indicated in the terminal connection:

Phase = L
Connected phase = L'
Neutral conductor = N

Note: This appliance is made out of synthetic material and of class II, it does not need a protective conductor.

Attention: To ensure a long lifespan, we advise the use of an external relay for lamps with a long starting current.

9. Fault-finding / Troubleshooting

Light not illuminated
Twilight-value not reconcilable with the given situation
Adjust twilight-value with regulating screw

Light illuminated constantly during darkness
Constant movement activity in the area of coverage
If movements caused by sources of interference (animals, ventilation, etc.), remove from area of coverage

Reduce range / sensivity with "SENS" regulating screw

Light illuminated constantly, also during the day
Twilight-value not reconcilable with the given situation
Adjust twilight-value with regulating screw

Light will not switch
Mechanical
Check bulb

Check connection

Fig. 1
Connections:

N L L'
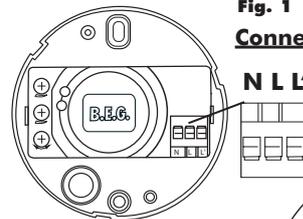
Fig. 2
Rotary control dial:

A   2 - 2000 Lux

B   5 sec. - 15 min.

D   ∅ 0.4 - 16 m

working LED
light sensor

Fig. 3
Range switch C:

HIGH OFF LOW
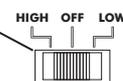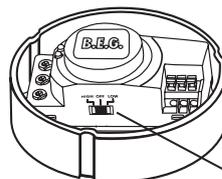
Please note:
To optimise the service life of fluorescent compact lights, we recommend a minimum switch-on time of 5 min. for the HF detector.