

Brief Instructions: Radar Motion Sensor for Detecting People at Automatic Doors

General Information for Your Safety

This device must be installed and maintained only by qualified, trained personnel. Observe the safety requirements of EN 60950-1. Operate the sensor only with an SELV supply with a limited output of up to 100 W. Use a T2.5 A fuse, for example, to reliably limit the power output.

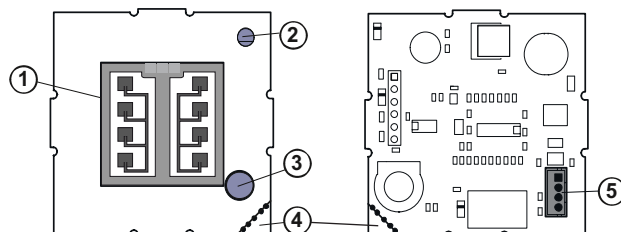
Product Information

Scope of Delivery

Quantity	Designation
1	Sensor RaDec-M...
1	Connection cable with plug
2	Screws for mounting
1	Mounting instructions
1	Self-adhesive drilling template

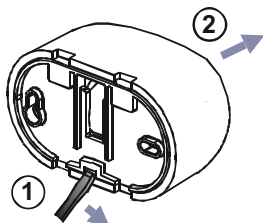
Operating Elements

- ① Antenna
- ② LED (red)
- ③ Potentiometer
- ④ Predetermined breakaway Relay switching mode
- ⑤ Connecting plug



Installation

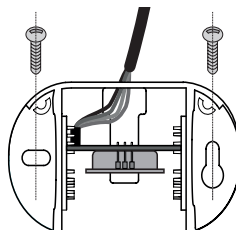
Opening the Device



1. Insert the screwdriver into the opening provided and carefully push open the cover.
2. Pull the cover forward and remove.

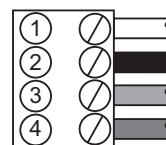
! Do not open the housing from the top.

Mounting the Device



1. Attach the self-adhesive template and drill according to the markings on the template.
2. Pull the cable through the opening provided.
3. Fasten the base plate using the screws (screws are in the housing).
4. Insert and connect the cable.

Connecting the Radar



Connect the pre-assembled radar plug to the connection socket.

Connector assignment for RadeC-M:

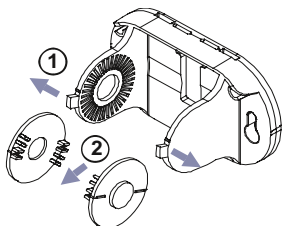
- ① AC/DC supply (white)
- ② AC/DC supply (black)
- ③ Relay contact 1 (red)
- ④ Relay contact 2 (green)

Connector assignment for RadeC-M-NA:

- ① AC/DC supply (red)
- ② AC/DC supply (black)
- ③ Relay contact 1 (white)
- ④ Relay contact 2 (green)

Replacing or Turning the Antenna

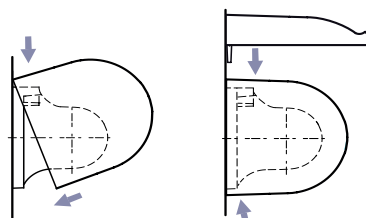
to change the antenna characteristics



1. Push apart the tabs on the arms of the base plate.
2. Carefully remove the PCB and locking discs.
3. Move the locking discs to the new position on the PCB.
4. Push apart the tabs on the arms of the base plate.
5. Re-insert the PCB with locking discs. The locking discs must engage.

! Do not touch any electronic components. Do not use any metallic tools.

Closing the Device

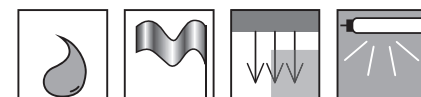


1. Attach the cover on the top and press down until it snaps into place.
2. Attach weather protective cover if required (see accessories).

! * Installation of the RaDec Weather Cap is recommended (see accessories).

! To meet UL508 requirements, a 2.5 A slow-blow fuse should be used between the device and the power supply.

Installation Information



- Protect the radar from rain*.
- Avoid placing moving objects in the detection area (fans, plants, trees, flags).
- Do not cover the radar. Only install the radar behind appropriate covers. Mechanically operated drive components may affect the radar.
- Avoid fluorescent lights in the detection field.

Troubleshooting

Fault	Corrective action
Door is detected	Decrease the size of the detection area Change inclination angle
LED not lit up	No power supply, device not functioning
Sensor reacts to the slightest influences such as rain, vibrations, or reflections. Door opens for no apparent reason	Decrease the size of the detection area

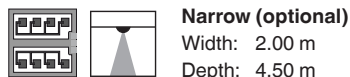
Detection Field Settings

Antenna characteristics

A wide or narrow detection area can be set by turning the PCB.



Wide (Standard)
Width: 4.50 m
Depth: 2.00 m



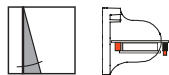
Narrow (optional)
Width: 2.00 m
Depth: 4.50 m

Installation height 2.20 m
Inclination angle 30°
Size of detection area Max.

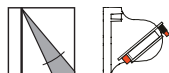
Inclination angle

The built-in locking discs can be used to adjust the angle of inclination in 10° steps from 0° to 90°.

Intermediate steps of 5° are possible by inserting the PCB in the locking discs in different positions.

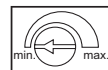


0 degrees The default inclination angle of the PCB is 15°.

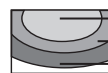


40 degrees

Detection area size



The size of the detection area can be changed using the potentiometer.



Min.
50 %
Max.

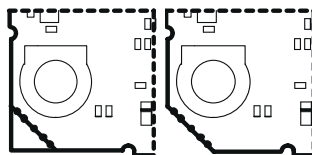


Some installation situations may limit the adjustment options and the functions of the sensor.

Adjusting the Switching Mode

The corner of the PCB should be broken off at the predetermined breakage point using pliers to change the switching mode to NC. The setting becomes permanent once the breakage point is broken!

Function	Setting	Description
Relay contact	Closing active	Relay closes on detection (NO)
switching mode	Opening active	Relay opens on detection (NC)



Technical Data

Functional principle	Microwave module
Detection speed	min. 0.1 m/s (measured in sensor axis)
Marking	CE
Inclination angle	0° - 90° in 5° steps
Detection range	at installation height of 2200 mm and 30° angle: Wide: 4500 x 2000 mm (WxD) Narrow: 2000 x 4500 mm (WxD)
Operating frequency	RaDec-M: 24.15 GHz – 24.25 GHz K band RaDec-M-NA (FCC/IC): 24.075 GHz – 24.175 GHz K band
Operating mode	Radar motion sensor
Function indicator	Red LED
Operating elements	Potentiometer for adjusting sensitivity Predetermined breakaway tab for relay switching mode
Operating voltage	12 – 36 VDC/12 – 28 VAC
No-load current	< 50 mA
Power consumption	< 1.7 W at 36 V DC < 1.2 W at 28 V AC
Signal output	Relay, 1 NO contact/NC contact
Switching mode	Active/passive
Switching voltage	Max. 48 VAC / 48 VDC
Switching current	Max. 0.5 AAC/1 ADC
Switching power	Max. 24 W/60 VA
Fall time	0.5 s
Ambient temperature	-20° C to 60° C/248 – 333 K
Relative humidity	Max. 90 % without condensation
Mounting height	Max. 4000 mm
Degree of protection	IP 54
Connection	4-pin connector plug (2.5 m connection cable with preassembled connecting plug included in scope of delivery)
Housing material	Polycarbonate (PC), ABS
Mass	130 g
Transmitting power	< 20 dBm EIRP
Dimensions without weather protective cover	101 mm (w) x 61 mm (h) x 59 mm (d)
Dimensions with weather protective cover	120 mm (w) x 73 mm (h) x 74 mm (d)

Accessories

RaDec weather cap Weather protective cover



For RaDec-M

Pepperl+Fuchs GmbH is certified according to ISO 9001.

LED Status Indicator

Color indicator	Status
Red flashing	Initialization after switching on
Red	On: Detection active
	Off: No detection

Commissioning

Before switching on the device, remove all objects from the door area that do not normally belong there.

- Switch on the device and wait 10 s (LED flashes red).
- Test the settings by walking within range of the sensor.
- The LED lights up red when you are detected.

Conformity with Standards

EU conformity: Pepperl+Fuchs GmbH hereby declares that the radio system type RaDec-M complies with Directive 2014/53/EU.

The full declaration of conformity is available at www.pepperl-fuchs.com.

US conformity: The product RaDec-M-NA is compliant with Part 15 of the FCC regulations. Canada conformity: The product RaDec-M-NA contains an IC-approved component.

IMPORTANT! The EU-compliant devices must not be marketed in the United States/Canada and the US/Canada-compliant devices must not be marketed in Europe! When placing on the market outside of the EU, US, or Canada, the locally applicable rules must be observed.

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