Technical Data

Functional principle	Microwave module
Detection speed	Min. 0.1 m/s
Marking	CE
Inclination angle	Vertical: 0° – 90° in 10° steps Horizontal: -30° – +30° in 5° steps
Detection range at installation height of 2200 mm and 30° inclination angle	Narrow (standard): 2000 x 4500 mm (WxD) Wide: 4500 x 2000 mm (WxD)
Operating frequency	24.15 GHz – 24.25 GHz K band **NA version (FCC/IC):** 24.075 GHz – 24.175 GHz K band
Operating mode	Radar motion sensor
Function indicator	Red/green LED
Operating elements	DIP switch for selecting the mode of operation: Direction detection, cross-traffic suppression, slow motion, switching mode, size of detection area, adjuster for fall time
Operating voltage	12 – 36 VDC/12 – 28 VAC
No-load current	< 50 mA at 24 VDC
Power consumption	< 1.2 W at 24 V DC / < 1.7 W at 36 V DC
Switching mode	Active/passive
Signal output	Relay, 1 NO contact/NC contact
Switching voltage	Max. 48 VAC / 48 VDC
Switching current	Max. 0.5 AAC/1 ADC
Switching power	Max. 24 W/60 VA
Fall time	0.2 s – 5 s, adjustable
Ambient temperature	-20° C to 60° C/253 – 333 K
Relative humidity	Max. 90 % without condensation
Mounting height	Max. 4000 mm
Degree of protection	IP 54
Connection	5 m connection cable with plug, 4-pin (cable is included in the scope of delivery)
Housing material	Polycarbonate (PC), ABS
Mass	130 g
Transmitting power (EIRP)	< 20 dBm
Dimensions excluding securing parts	123 mm (w) x 65 mm (h) x 57 mm (d)

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.	Increase immunity, decrease the size of the detection area.
Potentiometer does not respond	Operation with remote control is switched on. Set DIP switch 6 to the UP position.
Remote control does not respond	Operation with the DIP switch and potentiometer is switched on. Set DIP switch 6 to the DOWN position. Device is locked. Switch the operating voltage off and on again. The sensor can now be configured without a code for 30 minutes. Check the remote control battery.

Factory Settings

Function	Setting
DIP switches	Switch 1 – 5: up Switch 6: down
Detection area size	Potentiometer: Center position Remote control: 9
Inclination angle	15°
Direction detection	Forward
Fall time	1 s
Relay contact	Active
Cross-traffic suppression	Potentiometer: off Remote control: 1
Immunity	1
Slow motion	Off

Conformity with Standards

EU conformity: Pepperl+Fuchs GmbH hereby declares that the radio system types RMS-D and RMS-D-RC comply with Directive 2014/53/EU.
The full declaration of conformity is available at www.pepperl-fuchs.com.

US conformity: The products RMS-D-NA and RMS-D-RC-NA are compliant with Part 15 of the FCC regulations.

Canada conformity: The products RMS-D-NA and RMS-D-RC-NA contain 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!

Accessories

RMS Remote Control	Remote control
RMS Weather Cap	Mounting set and weather protective cover

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Pepperl+Fuchs GmbH is certified according to ISO 9001.

ISO9001 CE for RMS-D; RMS-D-RC EAC for RMS-D-RC

PEPPERL+FUCHS
SENSING YOUR NEEDS

Brief Instructions: Radar Motion Sensor for Detecting Persons 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.

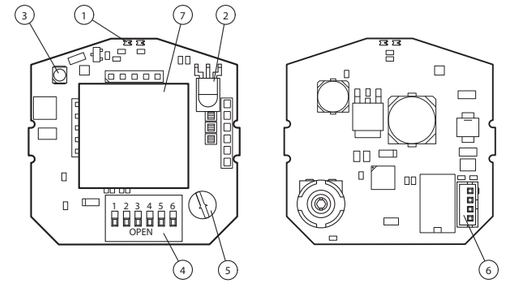
Product Information

Scope of Delivery

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

Operating Elements

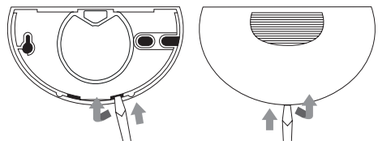
① LED (red/green)
② IR receiver
③ IR transmitter
④ DIP switches
⑤ Potentiometer
⑥ Connecting plug
⑦ Antenna



Installation

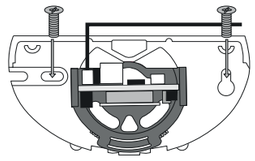
Opening the Device

Important: Do not open the housing from the top.



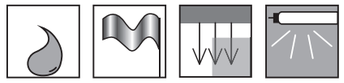
Open the housing from below:
Insert the screwdriver into the opening provided and carefully push open the cover.
Fold up and remove the cover.

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).

Installation Information

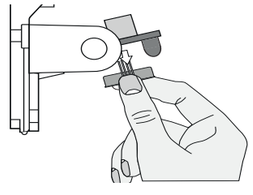


- Protect the radar from rain*.
- Avoid placing moving objects in the detection field (fans, plants, trees, flags).
- Do not cover the radar. Only install the radar behind appropriate covers. Mechanically operated drive components may affect the radar.
- Avoid fluorescent lights in the detection field.

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

Turning the Antenna

to change the antenna characteristics

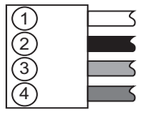


1. Select the shape of the detection area (narrow or wide).
2. Remove the antenna carefully using two fingers.
3. Turn the antenna through 90° and re-attach.

⚠ **Do not touch any electronic components. Do not use any metallic tools.**

Connecting the Radar

Connect the cable with the connecting plug:



Connector Assignment for RMS-D/RMS-D-RC:

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

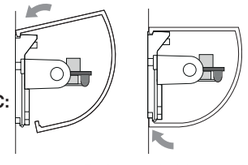
Connector Assignment for RMS-D-NA/RMS-D-RC-NA:

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

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

Closing the Device

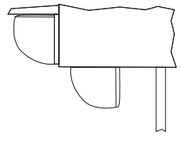
Attach the cover on the top and press down until it snaps into place.



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

Mounting options

- Wall mounting with base plate
- Wall mounting with weather cap using base plate
- Ceiling mounting with base plate



RMS-D / RMS-D-RC / RMS-D-NA / RMS-D-RC-NA

Detection Capabilities

Direction Detection

No direction detection

With direction detection forward (toward the radar)

With direction detection backward (away from the radar)

Cross-traffic suppression

Low cross-traffic (1...5)
Door remains closed with low cross-traffic

Heavy cross-traffic (6...10)
Door remains closed with heavy cross-traffic

Slow Motion (Turtle Mode)

Detection of the smallest movements

Door closed setting (green LED)
Door opens when a slow-moving object approaches that would not be detected with standard detection

Door open setting (red LED)
The door closes if no movement is detected within the set monitoring time.

Monitoring time/sensitivity

1 second/decreasing

3 seconds/decreasing

5 seconds/
constant maximum sensitivity

LED Status Indicator

Color Indicator	Status
G Green	Device ready for operation
R Red	Detection active
G Green flashing	Command received
R Red flashing	Fault
R/G Red/green flashing	Initialization after switching on

Immunity (1...7)

Immunity can be used to minimize interference such as rain, vibrations, and reflections.
1 = Low immunity
7 = High immunity

Commissioning

After applying the operating voltage, the hardware and software are initialized. This process takes 10 seconds. The LED flashes red/green.
Configure the radar. Check the settings by walking within range of the radar. You can only configure additional functions during the initialization period.

DIP switch 1: Fall time setting (output)
DIP switch 2: Immunity setting
DIP switch 3 + 1: Setting for size of detection area, slow motion (turtle mode) — door open
DIP switch 3 + 2: Setting for size of detection area, slow motion (turtle mode) — door closed
DIP switch 4: Restore factory settings (RESET)
DIP switch 5: Activation of additional functions menu
DIP switch 6: Must always be in the ON position

Additional Functions

Switching on the Mode

5 G ... 5

During the initialization period you can switch on the additional functions mode.
To do this, switch DIP switch 5. The LED flashes green. Configure additional function and reset DIP switch 5.
DIP switch 6 must be in the UP position.

Remember the position of the potentiometer so that you can reset it to the original setting if required.

Size of Detection Area for Slow Motion (Turtle Mode) Door Open

5 G 3 1 1 3 5

1. Switch DIP switch 5.
   The LED flashes green.
2. Switch DIP switch 3.
3. Switch DIP switch 1.
4. Change the size of the detection area using the potentiometer.
5. Reset DIP switch 1.
6. Reset DIP switch 3.
   The settings are saved.
7. Reset DIP switch 5.

Size of Detection Area for Slow Motion (Turtle Mode) Door Closed

5 G 3 2 2 3 5

1. Switch DIP switch 5.
   The LED flashes green.
2. Switch DIP switch 3.
3. Switch DIP switch 2.
4. Change the size of the detection area using the potentiometer.
5. Reset DIP switch 2.
6. Reset DIP switch 3.
   The settings are saved.
7. Reset DIP switch 5.

Immunity (1...7)

5 G 2 2 5

1. Switch DIP switch 5.
   The LED flashes green.
2. Switch DIP switch 2.
3. Change the sensitivity of the immunity using the potentiometer.
   The LED indicates the set immunity.
4. Reset DIP switch 2.
   The settings are saved.
5. Reset DIP switch 5.

Fall Time (Output)

5 G 1 1 5

1,0 s, 1,5 s, 2,0 s, 3,0 s, 4,0 s, 5,0 s, 0,5 s, 0,2 s

1. Switch DIP switch 5.
   The LED flashes green.
2. Switch DIP switch 1.
3. Change the fall time of the relay using the potentiometer. The relay will then be continually opened and closed with the set fall time. The LED changes from green to red accordingly.
4. Reset DIP switch 1.
   The settings are saved.
5. Reset DIP switch 5.

Restoring Factory Settings

5 G 4 R 4 5

1. Switch DIP switch 5.
   The LED flashes green.
2. Switch DIP switch 4.
   The LED flashes red.
3. Reset DIP switch 4.
   The radar is reset to the factory settings and restarted.
4. Reset DIP switch 5 after the end of the initialization period.

Use with swing doors:

The sensor can be used on swing doors. Install the sensor approx. 20 – 30 cm above the door edge on the door hinge side and activate the cross-traffic suppression. The closing door leaf is then not detected.

Detection Field Settings

Antenna Characteristics

Wide (standard)
Width: 4.50 m / depth: 2.00 m

Narrow (turn antenna 90°)
Width: 2.00 m / depth: 4.50 m

Inclination Angle

0 degrees

40 degrees

The position can be changed in 10° steps. To do so, hold the PCB at the side, turn toward the front and move to the required position. The factory setting is 15°.

Inclined Detection Area

The PCB can be turned in 5° steps so that it is inclined by +/-30°.

Detection Area Size

The potentiometer can be used to change the size of the detection area.

min. max.

Min. (1)
50 %
Max. (16)

1 = Smallest detection area
16 = Largest detection area

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

DIP Switch Settings

Check the Setting by Walking Within Range of the Sensor

No.	DIP ☐=DIP switch	Direction Detection	Cross-traffic Suppression	Slow motion (Turtle Mode) Door Open	Slow motion (Turtle Mode) Door Closed	Detection Area Size	Fall Time	Application Example
1	1 2 3 4 5 6		–	–	–		1 s	Standard
							0.2 s	Porch
2				–	–		0.5 s	Pavement
							1 s	High mounting (optional, wide area)
3					–			
4				–	–			
5								
6			–		–		1.5 s	Supermarket (optional, wide area)
7			–		–			
8			–	–	–			
9			–	–	–			
10				–	–			
11					–			
12				–	–			
13			–		–		2 s	Retirement home (optional, wide area)
14			–		–			
15			–					
16			–		–			
		Relay contact is active during detection (N.O.)						
		Relay contact is passive in the event of detection (N.C.)						

off 1 2 3 4 5 6

DIP 6 is only available in RC versions