Model Number

RMS-G-RC

Radar sensor

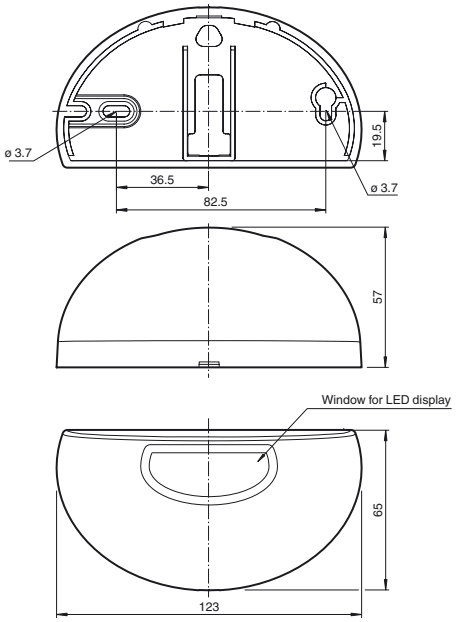
Features

- Industrial gate opener with the ability to differentiate between people and vehicles
- Extra-wide detection area and long detection range
- Direction detection
- Easily programmable
- Programmable by remote control

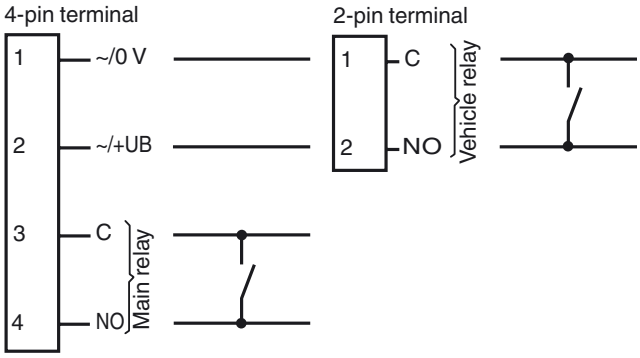
Product information

The microprocessor-controlled microwave motion sensors based on the latest 24 GHz technology provide a high degree of reliability even in difficult operating conditions and can be used with all automatic (industrial) doors up to a height of 7 m. The RMS-G sensors are equipped with intelligent functions, such as vehicle detection, to enable them to be used in a wide variety of applications. The special industrial door microwave sensor can be configured so that the industrial door only opens when a vehicle approaches it, while passing pedestrians are ignored. The sensor differentiates between people and vehicles.

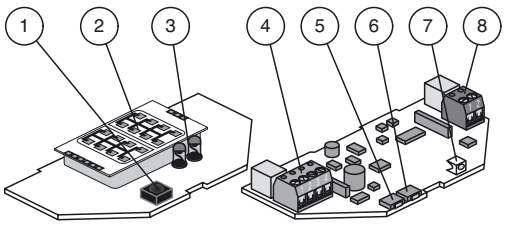
Dimensions



Electrical connection



Indicators/operating means



1	IR receiver
2	Antenna
3	IR-transmitter
4	Terminals (power supply/main relay)
5	Pushbutton / Menu
6	Pushbutton / Value
7	LED (red/green)
8	Terminals (vehicle relay)

Release date: 2019-12-18 11:33 Date of issue: 2019-12-18 184852_eng.xml

Technical data

General specifications		
Sensing range		7000 x 6000 mm (DxW) at 5000 mm mounting height and 30° tilt angle 8000 x 5000 mm (DxW) at 7000 mm mounting height and 30° tilt angle
Function principle		Microwave module
Detection speed		min. 0.1 m/s , max. ... 5 m/s (18 km/h)
Setting angle		0 ... 40 ° in 5 ° increments
Operating frequency		24.15 ... 24.25 GHz K-Band
Operating mode		Radar motion sensor
Transmitter radiated power (EIRP)		< 20 dBm
Functional safety related parameters		
$MTTF_d$		620 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Function indicator		LED red/green
Control elements		Programming push-button for selection of operating modes : Direction detection , Cross traffic suppression , Vehicle detection , Switching type
Control elements		Adjustment for off delay
Control elements		Programming via 2 keys , alternative via remote control (Accessories ordered separately)
Electrical specifications		
Operating voltage	U_B	12 ... 36 V DC , 12 ... 28 V AC
No-load supply current	I_0	≤ 50 mA at 24 V DC
Power consumption	P_0	≤ 1 W
Output		
Switching type		NO/NC
Signal output		2 relay outputs
Switching voltage		max. 48 V AC / 48 V DC
Switching current		max. 0.5 A AC / 1 A DC
Switching power		max. 24 W / 60 VA
De-energized delay	t_{off}	0.2 ... 5 s adjustable
Ambient conditions		
Operating temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-30 ... 70 °C (-22 ... 158 °F)
Relative humidity		max. 90 % non-condensing
Mechanical specifications		
Mounting height		max. 7000 mm
Degree of protection		IP54
Connection		plug-in screw terminals 4-pin and 2 pin , 8 m connecting cable included with delivery
Material		
Housing		ABS, anthracite
Mass		120 g
Dimensions		123 mm x 65 mm x 57 mm
Suitable series		
Series		RMS
Approvals and certificates		
CE conformity		2014/53/EU This device can be used in all countries within the European Union. In other countries, all applicable national regulations must be observed.
EAC conformity		TR CU 020/2011
FCC approval		No - Use in North America is not permitted.

Functional Principle

Radar sensors are microwave sensors that adopt the principle of Doppler radar. The most important requirement for radar detection is that the object to be detected is moving. The radar sensors emit microwaves of a defined frequency in order to detect people and large objects moving within the specified velocity range of the radar sensor.

The microwaves emitted by the emitter are reflected back from the ground or other surfaces to the receiver. If there is no motion in the monitored zone, the emitted and reflected frequencies are identical. Nothing is detected. If people, animals or objects are moving in the monitored zone, the reflected frequency changes and therefore triggers a detection.

Based on the latest 24 GHz technology with integrated microprocessor control, these sensors provide a high level of reliability, even in difficult operational conditions. The 24 GHz frequency, known as 'K-band,' is reserved by CETECOM for this application area all round the world.

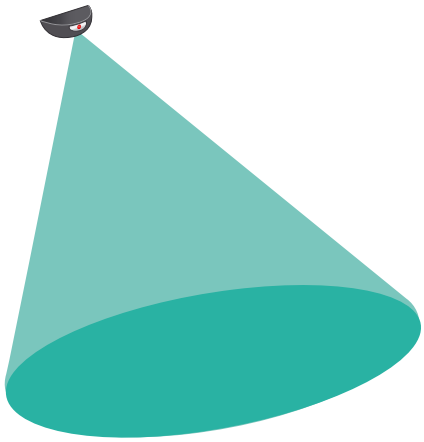
The RMS-G series of sensors are equipped with intelligent functions to enable them to be used in a wide variety of applications. The cross-traffic suppression system can be configured so that the door only opens when vehicles or people approach it, while passing pedestrians are ignored.

With direction detection, the opening impulse can be triggered based on the direction of

Typical applications

- Opening impulse sensor for industrial doors
- Motion sensor for people and objects
- Activation sensors for detecting vehicles traveling at a maximum of 60 km/h (RMS-G-RC-HS)

Detection area



Accessories

RMS Weather Cap
All-weather hood for RMS series microwave sensors, for ceiling and wall installation

RMS Remote Control
Infrared remote control for RMS series and RAVE

RMS Antenna broad
Radar antenna for wide sensing range

RMS/RaDec Ceiling Kit wh
Ceiling mount kit for radar sensors in the RMS and RaDec Series

Other suitable accessories can be found at www.pepperl-fuchs.com

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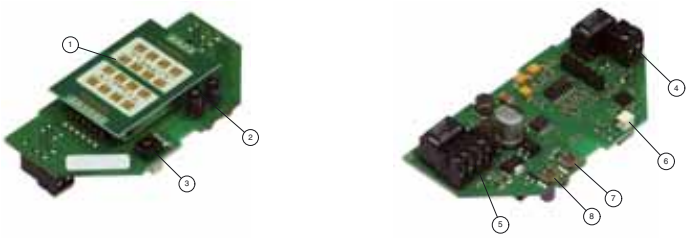
motion. Depending on the setting, only movements towards or away from the sensor are detected.

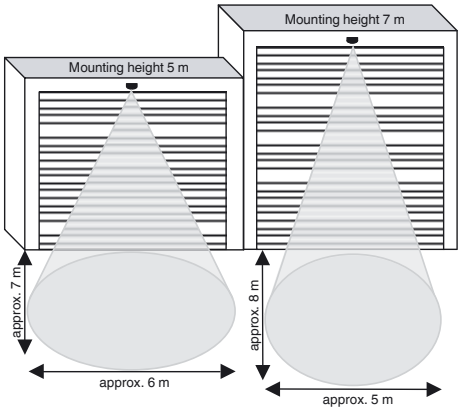
settings

The RMS-G-RC sensor is adjusted in programming mode directly on the device using two buttons: --> 8 = pushbutton/menu; 7 = button/value. The flashing sequence of the LEDs indicates the settings. With the RMS remote control, available as an accessory, the sensor can be easily and quickly programmed from the ground. The bidirectional infrared remote control with an LCD display and self-explanatory menu interface has a range of 10 m. Even sensors with considerable installation heights can be precisely and easily adjusted.
Model number for remote control: RMS remote control



1) Antenna
2) IR emitter diode
3) IR receiver diode
4) Screw terminal (vehicle relay)
5) Screw terminal (voltage/main relay)
6) LED indicator
7) Button/value
8) Button/menu

The following properties are adjustable:
1. **Dimensions of the sensing area**



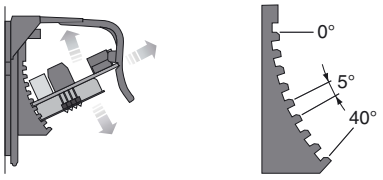
At maximum sensitivity and angle of incidence

2. Dimensions of the sensing area
The size of the sensing area can be changed by adjusting the sensitivity using the buttons or remote control.

High sensitivity = Large area

Low sensitivity = small area

3. Position of the sensing area:
The sensing area can be rotated in 5° increments from 0° to 40°. The printed circuit board can also be inserted at an angle.



4. Detection without direction detection

Release date: 2019-12-18 11:33 Date of issue: 2019-12-18 184852_eng.xml

Forward/backward

5. Detection with direction detection
Forward (towards the sensor)
Backward (away from the sensor)

6. Cross-traffic suppression
Without suppression: door opens even in the event of cross-traffic
With suppression: door remains closed in the event of cross-traffic

7. Detection of people/vehicles
The sensor evaluates movements of people and vehicles in different ways and switches the main relay or both relays at the same time according to the setting.
The distinguishing between people/vehicles makes it possible to only open the door for vehicles. Approaching people must use the side entry.

8. Relay functions
The main relay always switches if it detects both people and vehicles.
The vehicle relay only switches if vehicle detection is switched on and if a vehicle is detected and there is no pedestrian traffic.

Function display

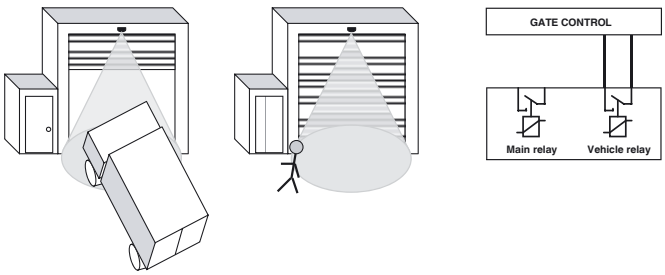
LED green	Device ready for operation
LED red	Main relay is activated
LED quickly flashes green/red	Vehicle relay is activated
LED flashes green/red slowly	Initialization (for approx. 10 sec after switching on)
LED flashes green	Command received
LED flashes red	Fault

Application examples: Distinguishes between people and vehicles

Door with separate entry for people, door controller with 1 entry, vehicle detection switched on, only vehicle relay connected

The size of the sensing area can be changed by adjusting the sensitivity using the buttons or remote control.

Vehicle approaching	Person approaching
Vehicle relay switches (LED quickly flashes red/green)	Vehicle relay does not switch, door remains closed
The door opens	Person uses side entrance



Door with no separate entry for people, door controller with two entries, vehicle detection switched on, main relay and vehicle relay connected

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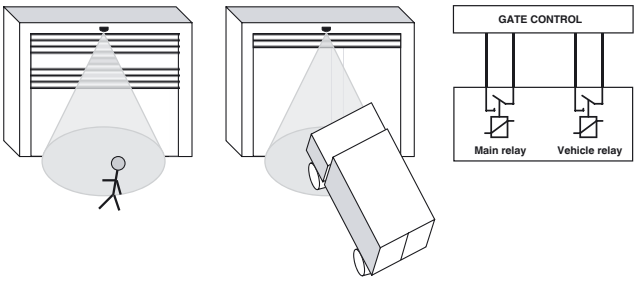
Person approaching	Vehicle approaching
Main relay switches (LED lights up red)	Main relay and vehicle relay switch (LED quickly flashes green/red)
The door opens half-way	Door opens fully



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