



## Radar sensor RMS-M-RC



- Microwave motion sensor with basic functionality
- Reliable detection of people and vehicles
- Simplest adjustment of the sensing range
- Easily programmable
- Programmable by remote control

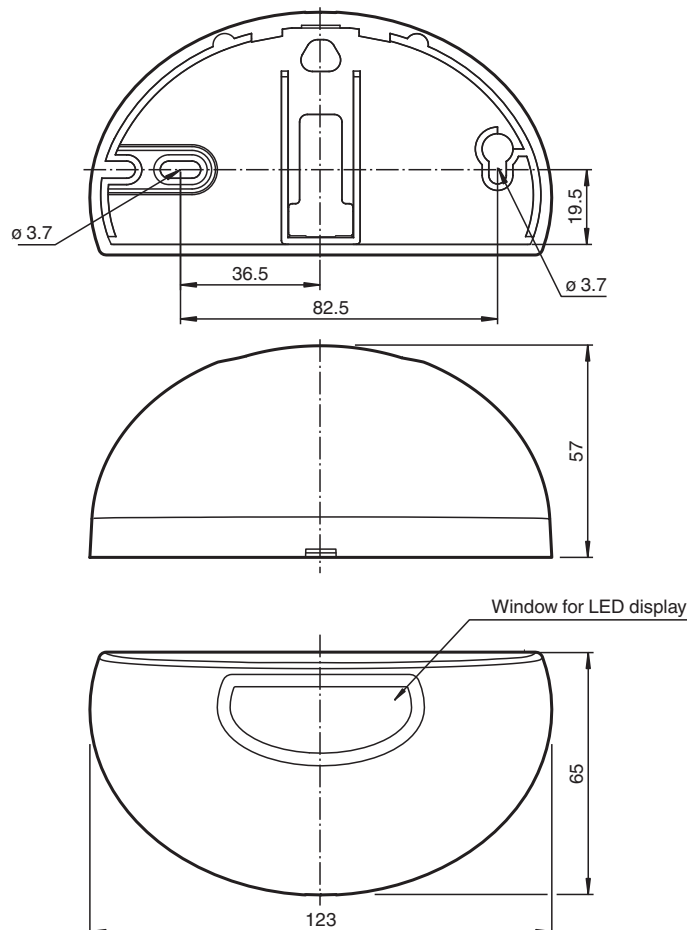
Premium radar motion sensor with basic functionality, can be operated remotely, detection range 4.5 m x 2 m, max. installation height 4 m, black housing, relay contact output, cable connection



### Function

An effective opening of doors or industrial doors can be achieved very flexibly with the RMS microwave motion sensor series. The RC versions offer remote-controlled adjustment of parameters. Ultramodern microcontroller evaluation technology guarantees a variety of field sizes and universal use even in difficult conditions. An integrated microprocessor with 24 GHz-microwave technology ensures high reliability even under difficult usage conditions. The sensor also offers two adjustable detection areas and different operating modes, an installation height up to 4 m and operates in a temperature range of - 20 ... +60 °C.

### Dimensions



## Technical Data

### General specifications

|                                   |                                                                                                                                                                     |                              |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Sensing range                     | wide: 2000 x 4500 mm (DxW) at 2200 mm mounting height and 30° inclination angle<br>narrow: 4500x 2000 mm (DxW) at 2200 mm mounting height and 30° inclination angle |                              |
| Function principle                |                                                                                                                                                                     | Microwave module             |
| Detection speed                   |                                                                                                                                                                     | min. 0.1 m/s                 |
| 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 <sub>d</sub>              | 850 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

### Indicators/operating means

|                    |                                                                                                                            |
|--------------------|----------------------------------------------------------------------------------------------------------------------------|
| Function indicator | LED red/green                                                                                                              |
| Control elements   | Potentiometer and programming button for setting: Method of connection, dropout time, response time, Interference behavior |
| Control elements   | sensitivity adjustment                                                                                                     |
| Control elements   | Programming via menu driven remote control possible (Accessories ordered separately)                                       |

### Electrical specifications

|                        |                |                                 |
|------------------------|----------------|---------------------------------|
| Operating voltage      | U <sub>B</sub> | 12 ... 36 V DC , 12 ... 24 V AC |
| No-load supply current | I <sub>0</sub> | ≤ 50 mA at 24 V DC              |
| Power consumption      | P <sub>0</sub> | ≤ 1 W                           |

### Output

|                    |                  |                                                 |
|--------------------|------------------|-------------------------------------------------|
| Switching type     |                  | NO/NC                                           |
| Signal output      |                  | relay                                           |
| 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 <sub>off</sub> | 0.2 ... 10 s adjustable (1 sec factory setting) |

### 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. |
| FCC approval  | No - Use in North America is not permitted.                                                                                                              |

### 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

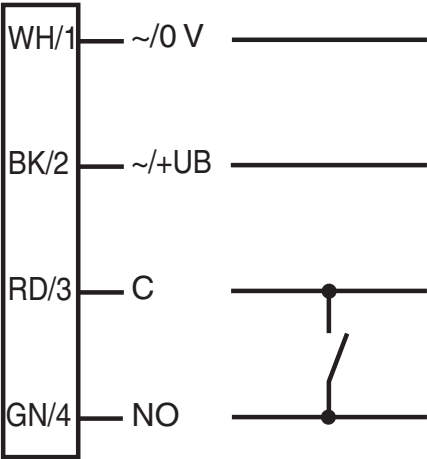
|                      |                                                                             |
|----------------------|-----------------------------------------------------------------------------|
| Mounting height      | max. 4000 mm                                                                |
| Degree of protection | IP54                                                                        |
| Connection           | plug-in screw terminals 4-pin , 5 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 |
|--------|-----|

Connection Assignment

Option:



Assembly

|   |                                  |
|---|----------------------------------|
| 1 | Potentiometer                    |
| 2 | Antenna                          |
| 3 | Terminal                         |
| 4 | IR-transmitter (RC version only) |
| 5 | LED (red/green)                  |
| 6 | IR-receiver (RC version only)    |
| 7 | Programming button               |

Application

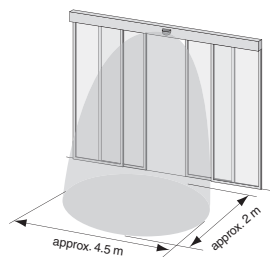


Accessories

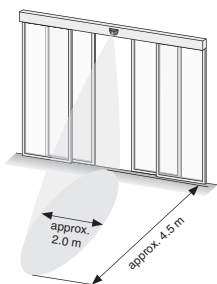
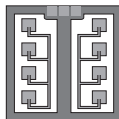
|                                                                                     |                                     |                                                                                      |
|-------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------|
|  | <b>RMS Weather Cap</b>              | All-weather hood for RMS series microwave sensors, for ceiling and wall installation |
|  | <b>RMS/RaDec Ceiling Kit<br/>wh</b> | Ceiling mount kit for radar sensors in the RMS and RaDec Series                      |

## Detection range

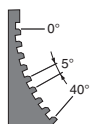
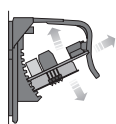
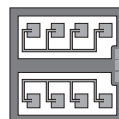
### Installation instructions



Installation height 2200 mm / angle of detection field 30°  
Antenna position:



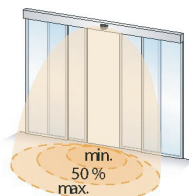
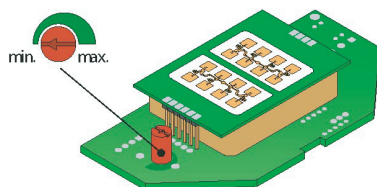
Installation height 2200 mm / angle of detection field 30°  
Antenna position:



The detection field can be swivelled in 5 steps from 0 to 40°.  
The guide plate can be inserted on a slant.

## Sensitivity settings

The sensitivity potentiometer can be used to adjust the size of the detection field.



## Function display

|                        |                                                          |
|------------------------|----------------------------------------------------------|
| LED green              | Ready for operation                                      |
| LED red                | Relay active                                             |
| LED green flashing     | Command received                                         |
| LED red flashing       | Error                                                    |
| LED green/red flashing | Initialisation (for about 10 seconds after switching on) |

## Function Principle

Microwave sensors are microwave scanners that use the principle of the Doppler radar. The most important requirement for microwave detection is that the object to be detected is moving.

The microwave sensors emit microwaves of a defined frequency in order to detect people and large objects moving at speeds between 100 mm/sec and 5 m/sec.

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.

Microprocessor-controlled motion sensors based on the latest 24 GHz technology provide a high degree of reliability even under difficult operating conditions. The 24 GHz frequency, known as 'K-band,' is reserved by CETECOM for this application area worldwide.

## Application

- Opening impulse sensor for automatic and industrial doors
- Monitoring approach areas to automatic doors and elevators
- Motion sensor for people and objects
- Impulse sensor for escalators
- Opening impulse sensor for entry doors