

# GRK-1000

## Microwave detector suitable for industrial doors

The microwave detector **GRK-1000** (developed using the K band 24.25 GHz and a planar technology) is a device suitable to open industrial doors and automatic doors. It can be installed at an height between 3 and 6 meter, generating a detection area between 3 and 30 square meters.

**GRK-1000** can be configured in single-direction mode (it can detect the approaching and the receding direction) or in bi-direction mode (it detect either approaching and receding movements). A microprocessor analyzes the received signals, created by the Doppler effect, and activates the output. A frontal LED shows the motion detection status within the detection area (the LED remains ON for the whole time of the relay activation).



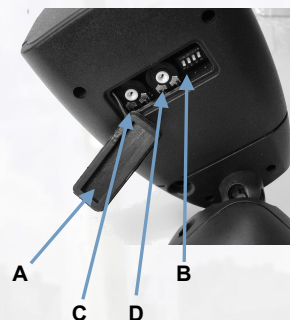
### □ Technical Data / Features

<b>Power supply (SELV)</b>	From 12 to 30 Vdc or from 12 to 24 Vac
<b>Current consumption</b>	40 mA max
<b>Operative frequency</b>	24 GHz
<b>Output Power</b>	≤ 20 dBm
<b>Detection range</b>	1 ~ 10 m adjustable
<b>Min detectable speed</b>	0.1 m/s
<b>Relay output</b>	1A @ 24 Vac/dc
<b>Relay timing</b>	1 ~ 6 s adjustable
<b>Installation height</b>	6 m above the ground (max)
<b>Horizontal adjustment</b>	0 ~ 60°
<b>Vertical adjustment</b>	± 45°
<b>Protection degree</b>	IP65, outdoor use
<b>Working temperature and R.H.</b>	-20 °C / +50 °C, 0 - 90% R.H.
<b>Dimensions and weight</b>	160 (L) x 95 (H) x 110 (D) mm; 500 g
<b>Certification</b>	CE - in compliance with the essential requirements of Directive 99/05/EC (R&TTE)

### GRK-1000 detector installation

Remove the rubber plug from the lower part of the radar (A) and set the required functions through the dip-switches (B) as per below table:

SW1	SW2	SW3	Sensitivity	CONDITION
OFF	-	ON	Low	Movements are detected in both directions
OFF	-	OFF	High	Movements are detected in both directions
ON	OFF	ON	Low	Detection of approaching movements
ON	OFF	OFF	High	Detection of approaching movements
ON	ON	ON	Low	Detection of receding movements
ON	ON	OFF	High	Detection of receding movements



**GRK-1000** can be installed at the center or at the side of the door, on non-vibrating structures (wall or ceiling - use the template for the holes preparation) at the max height of 6 m.

Fix the microwave radar, remove the lower cover and loosen the screw that blocks the housing pan&tilt angles. Direct the detector toward the area to be controlled and lock in that position.

## GRK-1000 electrical connections

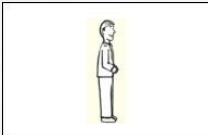
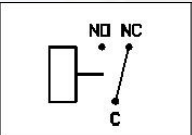

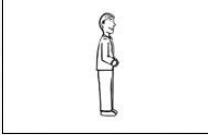
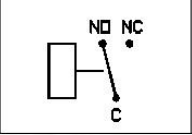

Connect the pre-wires cable as indicated in the below table. Then switch on the power supply.

Wire color	Description
Red	12-24 Vac/dc
Black	12-24 Vac/dc
Green	COM relay contact
Yellow	NO contact (when device is not powered)
Blue	NC contact (when device is not powered)

## GRK-1000 working mode settings

The radar features a switching contact relay.

Using the dip-switches (B) placed below the detector, it is possible to achieve the below described functions:

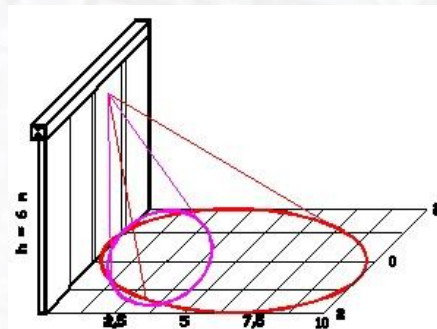
SW3 ON (default) (Normal operation)			
SW3 OFF (Positive safety)			

These conditions are valid when the device is powered.

## GRK-1000 detection range settings and output timing

Using the TR1 trimmer (D), located in the bottom part of the radar, below the protection (A), it is possible to optimize the detection area in order to achieve a detection only in the desired area. A low sensitivity can be achieved using a tilt angle of 60°, while a high sensitivity required a tilt angle of 45°.

Use the TR2 trimmer (C) located in the bottom part of the radar below the protection (A) to adjust the relay pulse timing in a range between 1 and 6 seconds.



For a correct operation to not install GRK-1000:

- Facing the moving part of the door
- Facing fluorescent lights (minimum distance: 2 m)
- Facing areas where rain can provoke water fluxes detected as movements

These conditions could activate the radar Doppler effect and cause the unwanted opening of the door.