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## **Microwave Motion Detector with Microprocessor Technology**

# Mars - Microwave Motion Detector with Microprocessor Technology

## Description / Settings / Mounting

### Description

Mars is a microwave motion detector which detects people and/or objects at automatic pedestrian and industrial doors. It is a standalone trigger sensor. It operates in the K-Band (24 GHz) and accords to the Doppler principle.

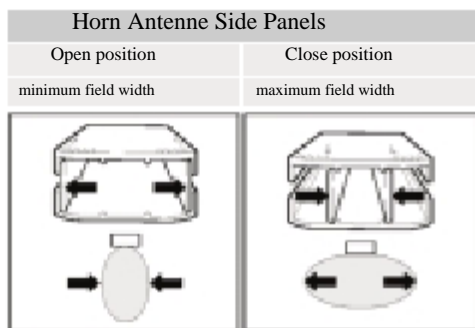
Within the defined detection zone, movements of minimum 5 cm/s and maximum 5 m/s (people and/or objects such as shopping trolleys, vehicles etc.) are detectable. However, people or objects that are not moving will not be detected.

### Detection Field Settings

The required field width can be set by adjusting the side panels on the horn antenna. Each of the two side panels can be moved to the left or right until they are parallel with the centre - thus enabling asymmetric detection areas to be set.

### Important

The mechanical setting of the side panels is opposite (reciprocal) to the field formed on the ground.



### Great Depth of Field

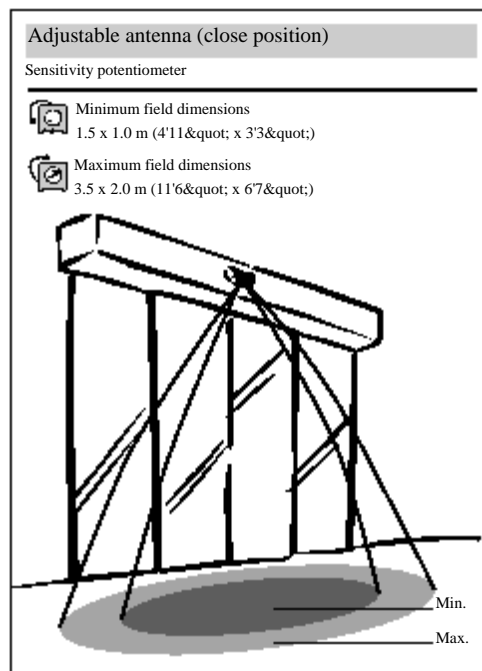
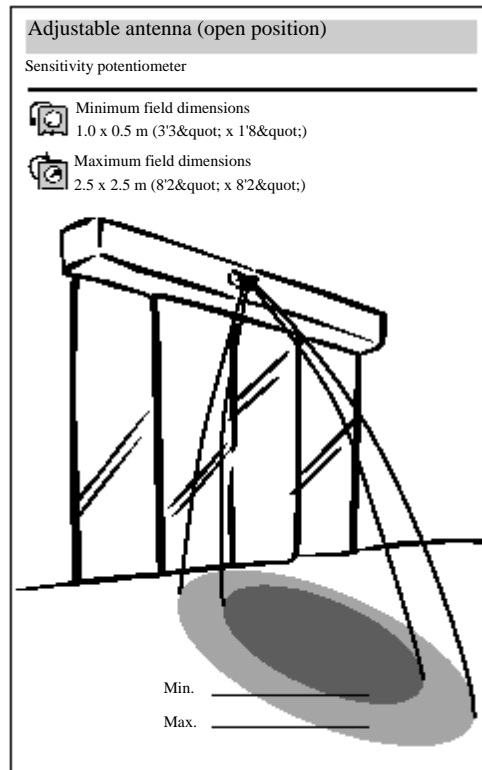
Moving objects can be detected in a more reliable and precise manner.

The switching points, which are limited exactly, ensure constant and steady response behaviour.

### Linearized Potentiometer

Field dimensions can be set to optimum with the linearized potentiometer.

### Detection Fields



Experience value at 2.2 m (7'3" mounting height).

Maximum mounting height is 4 m (13'1" ot;)

### Function Settings

#### Digital Filter Functions

Interference signals from fluorescent lamps, rain, snow etc. are quickly suppressed by means of the variable digital filter function. This filter ensures that automatic pedestrian and industrial doors function to an optimum.

#### Sensitivity

The response sensitivity is adjustable using the linearized potentiometer. The sensitivity of the device depends on the surface structure and the surface dimensions of the object to be detected. The detection zones defined by the position of the antenna are affected by the change in sensitivity.

#### Output Hold Time

The output hold time of the relay output can be set with the potentiometer.

#### Direction Recognition

The standard sensor Mars /31 has no direction recognition. Only the type Mars DR /31 offers the direction recognition. It evaluates only signals towards the motion detector. Sliding and draught-proof doors, elevators and vehicle doors etc. can thus be closed up to 50 % faster. Environmental awareness, energy and cost savings are no longer empty promises.

### Mounting Options

The device can be mounted both on the ceiling or wall, and the connection is very simple. Additional advantage: Thanks to the compact housing the settings cannot be tampered with by vandals.

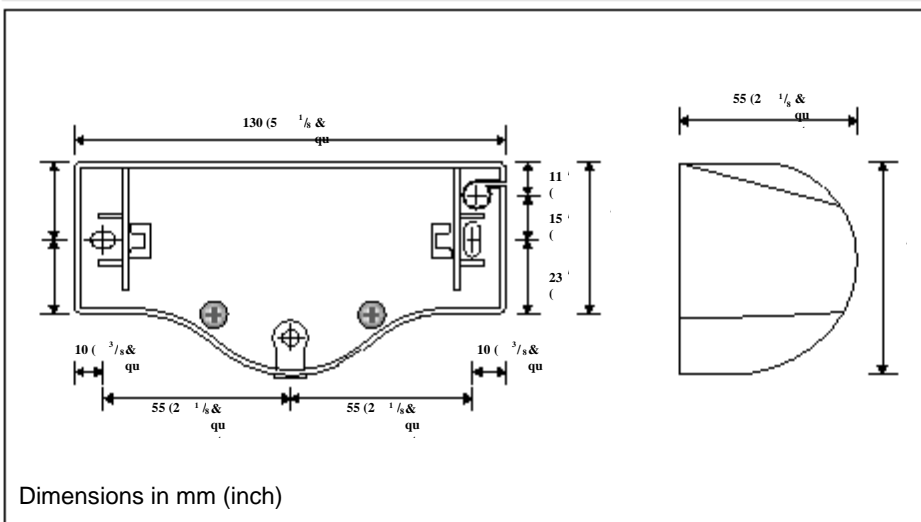
### For Simple Applications

The cost-performance ratio of the Mars unit is optimal. Therefore it is the best sensor solution for simple automatic pedestrian and industrial doors applications.

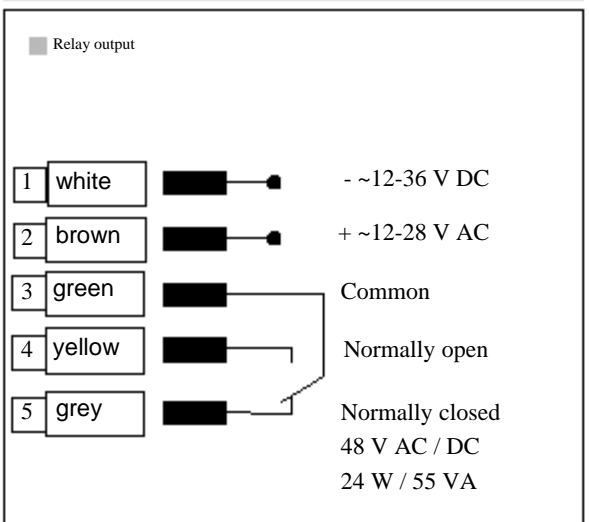
Technical Details	Mars	Remarks
Field Dimensions	2.5 x 2.5 m or 3.5 x 2.0 m (8'2" x 8'2" or 11'6" x 6'7")	see detection fields
Mounting Height	recommended max. mounting height 4 m (13'1")	
Sensitivity Adjustment	linearized potentiometer	
Antenna	adjustable horn antenna	
Direction Recognition	Mars DR /31 with direction recognition	Mars /31 without direction recognition
Operating Voltage	12-36 V DC / 12-28 V AC	
Residual Ripple	max. 10%	with DC operation
Current Consumption	approx. 100 mA @ 24 V AC, + 20 °C	
Frequency	24.125 GHz +/- 100 MHz	
Signal Output	Relay output 1x changeover contact max. switching voltage 48 V AC / DC max. switching current 0.5 A AC / 1.0 A DC min. switching current 1 mA max. switching power 55 VA / 24 W	
Movement Detection	minimum at 5 cm/s and maximum at 5 m/s	adjustment on output hold time potentiometer
Output Hold Time	adjustable with potentiometer from 0.5 s to 4 s	
Response Time	~100 ms @ 1 m/s frontal to door	
Switching Mode	active = output active after detection	
Function Indication	LED red	lights up at detection on an object
Connection Type	3 m cable with 5 pol terminal plug	5 x 0.25 mm male/female connector
Humidity	0 to 90%, relative, non condensing	
Protection Class	suitable for application in accordance with IP 54	when mounted
Operating Temperature	-20 °C to +60 °C	
Housing Material	ABS	
Cover Colour	black, silver or white	
Weight	255 g without packaging	300 g with packaging
Electromagnetic Compatibility	<b>according to:</b> <b>1989/5/EC: R&amp;TTE directive</b> <b>89/336/EEC: EMC directive + amendments</b>	



### Dimensions of Mars / 31 and Mars DR / 31



### Connection Diagram



## Applications

### Automatic Pedestrian Doors

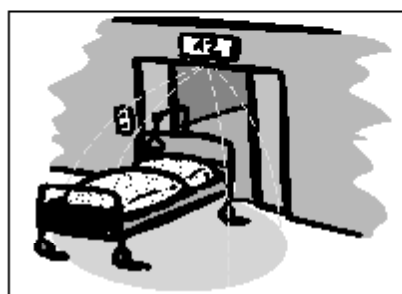
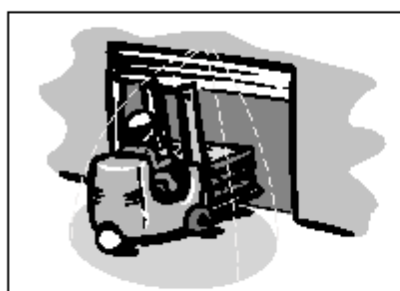
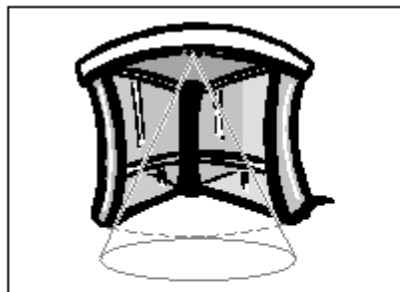
Trigger sensor for sliding doors, revolving doors, semi-circular doors, etc.

### Automatic Industrial Gates

Trigger sensor for high-speed industrial doors, swing doors, barrier system etc.  
Opening command for barrier systems

### Elevators and escalators

Cabin-access control  
Starting sensor for escalators



## Ordering information

Article No.	Designation / Type	Colour	Scope of Delivery
F531.120010	Mars /31	black	3 m cable, without direction recognition
F531.120020	Mars /31	silver	3 m cable, without direction recognition
F531.120040	Mars DR /31	black	3 m cable, with direction recognition
F531.120060	Mars DR /31	silver	3 m cable, with direction recognition

## Your contact