

# Combined Motion and Presence Detector for Automatic Sliding Doors GUARDIAN 1

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- Overhead sensor for sliding doors
- Motion and presence detection in one unit
- Digital Video Camera Technology
- Easy teach of presence zone
- Environmental adaptation
- No Crosstalk between sensors
- Separate motion and presence output
- 2 x SPST relay outputs
- Supply voltage: 12 to 24 VAC/DC
- LED indication for: Power, Motion and Presence
- CE, UL325 and TÜV approved



## Product Description

The GUARDIAN 1 is an overhead sensor for pedestrian sliding doors. The sensor has combined motion and presence (safe) detection zones. The sensor is based on CMOS camera technology and detection on image processing. The motion zone reacts only on movement whereas the presence zone reacts on both movement and presence. The motion zone can be blanked in 3 directions (front, left and

right) in order to avoid detection of unwanted objects. The presence zone is taught into the sensor by recognition of some standard test targets in the setup phase. The presence zone also adapts to the surroundings to work in different weather conditions. The sensor has separate outputs for the motion and presence zones as well as a test input to test the sensor function for each door cycle.

## Ordering Key

**GUARDIAN 1**

## Type Selection


Housing size	Ordering no.
210 x 77 x 58 mm	GUARDIAN1

## Specifications

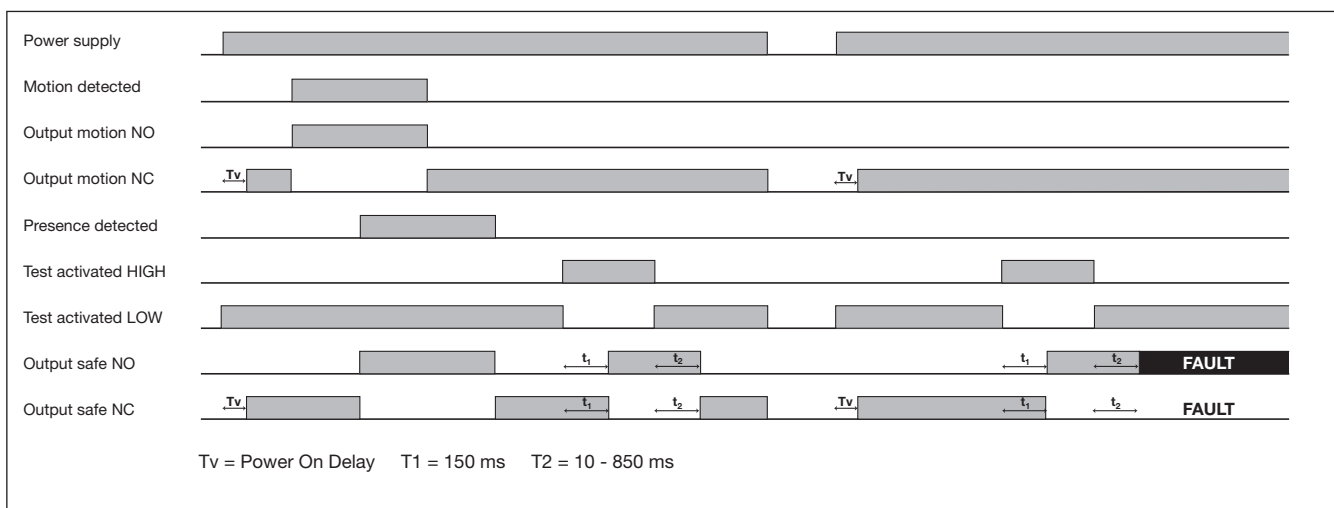
<b>Rated operational voltage (U<sub>e</sub>)</b>	12 - 24 VAC (12 - 24 VCA) RMS incl. ripple 50-60 Hz, ±15% tolerance 12 - 24 VDC (12 - 24 VCC) ±15% tolerance	<b>Active low:</b>	ON < 6 VAC/VDC OFF > 9 VAC/VDC															
<b>No load supply current (I<sub>e</sub>)</b>	<table border="1"> <thead> <tr> <th>Typical</th> <th>Max.</th> <th></th> </tr> </thead> <tbody> <tr> <td>192 mA</td> <td>230 mA</td> <td>@ 12V AC</td> </tr> <tr> <td>146 mA</td> <td>170 mA</td> <td>@ 12V DC</td> </tr> <tr> <td>103 mA</td> <td>120 mA</td> <td>@ 24V AC</td> </tr> <tr> <td>65 mA</td> <td>80 mA</td> <td>@ 24V DC</td> </tr> </tbody> </table>	Typical	Max.		192 mA	230 mA	@ 12V AC	146 mA	170 mA	@ 12V DC	103 mA	120 mA	@ 24V AC	65 mA	80 mA	@ 24V DC	<b>Sensitivity</b>	Adjusting in 7 steps
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<b>Technology</b>	Digital video camera technology	<b>Presence zone reaction time</b>	Reaction time: 210 ms (20% contrast, object speed 1 m/s, test body CA (DIN18650-1)) 500 ms															
<b>Power ON delay</b>	5 seconds	<b>Fall time:</b>	500 ms															
<b>Output function</b>	Relay – SPST 1A DC 30VDC 600.000 @ 0,5A, 50 VAC/ 30 VDC 100.000 @ 1A, 30 VDC	<b>Motion zone reaction time</b>	Reaction time: 1,2 s (20% contrast, object speed 1 m/s, test body CA (DIN18650-1)) 500 ms															
<b>Test input</b>	Max. input current 5 mA ON > 9 VAC/VDC OFF < 6 VAC/VDC	<b>Fall time:</b>	500 ms															
<b>Active high:</b>		<b>Presence time</b>	(Background relearn time) 7 step rotary switch 1 min, 5 min. Not in accordance with DIN18650 10 sec, 30 sec.															
		<b>Vibration</b>	10 to 150 Hz 0.5 mm/7.5g (IEC 60068-2-6)															
		<b>Shock</b>	2 x 1 m and 100 x 0.5 m (IEC 60068-2-32)															



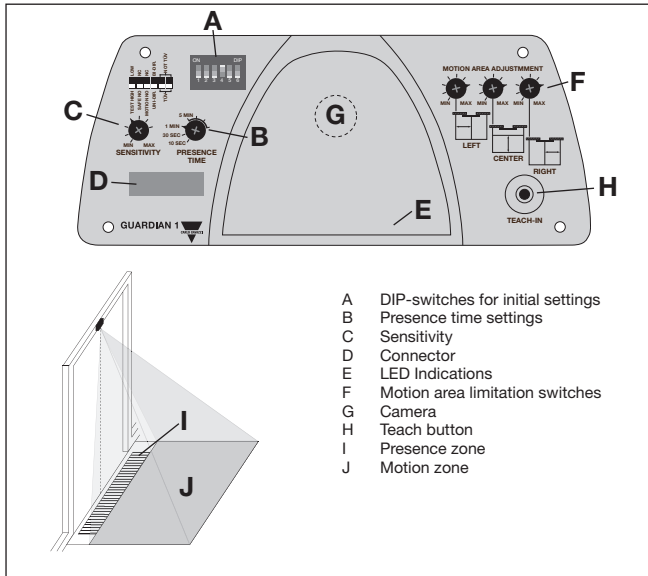
## Specifications (cont.)

<b>Ambient temperature range</b> Operating Store	-25° to +55°C (-13° to +131°F) -25° to +80°C (-13° to +176°F)	<b>Pollution degree</b>	3 (IEC 60664 / 60664A / EN 60947-1)
<b>Ambient light</b>	10 lux - 50.000 lux 40 lux - 50.000 lux, TÜV approved, measured at the sensor surface	<b>Humidity</b>	0 % to 90 % relative, non condensing
<b>Contrast</b>	Min. 20% contrast between the floor and object	<b>Type of ESPE</b> Type 2	The sensing functions have to be tested for each door cycle by applying a test signal to the terminals 2+3. See test input.
<b>Motion zone sensing area</b> Height 180 cm Height 220 cm Height 300 cm	(W x D) 246 x 204 cm 300 x 249 cm 410 x 340 cm The motion area can be blanked from left, right and front in 7 steps on three rotary switches	<b>LED indications</b> Green LED Yellow LED Red LED	Power ON Motion detected Presence detected For special LED functions see page 3
<b>Presence zone sensing area</b> Height 180 cm Height 220 cm Height 300 cm	(W x D) 42 cm x door width 51 cm x door width 70 cm x door width	<b>Rated Insulation voltage</b>	50 VDC
<b>Mounting height</b>	1.8 m to 3.0 m	<b>Weight</b>	460 g
<b>Placement of sensor</b> Horizontal distance from door  Vertical distance from door	max 50 cm in front of the door. The sensor must be able to see the door opening.  10 cm from the top of the door opening	<b>Electromagnetic compatibility</b>	In acc. with EMC directive 2004/108/EG Immunity in acc. with EN61326-1 and EN61326-3-1
<b>Material</b> Housing and cover Front glass	ABS Black Clear transparent, polycarbonate.	<b>Marking</b>	CE
<b>Connection cable</b>	3 m 8 x 0,14 mm <sup>2</sup> LIYY grey Max. cable length: 10 m.	<b>TÜV-Approval</b>  Baumuster geprüft	In acc. with machinery directive 2006/42/EC, annex I DIN 18650-1 § 5.7.4, edition 2005 (prEN16005), EN13241-1, EN 12978, edition 2003, EN61508, edition 2001, ENISO13849-1: 2008 cat.2 pl. c for presence detection
<b>Environment protection</b>	IP64 (EN 60529, 60947-1)	<b>UL-Approval</b>	cULus
<b>Installation category</b>	III (IEC 60664 / 60664A / EN 60947-1)		UL325, CSA-C22.2 No.247

## Operation Diagram

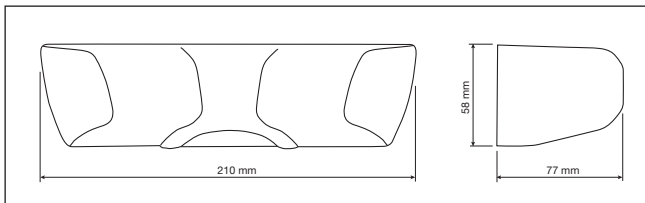


## Component Guide



- A DIP-switches for initial settings
- B Presence time settings
- C Sensitivity
- D Connector
- E LED Indications
- F Motion area limitation switches
- G Camera
- H Teach button
- I Presence zone
- J Motion zone

## Dimensions



## LED Indications

Situation / LED	Yellow	Red	Green
Normal	Motion detected	Presence detected	Power On
No presence zone stored	Running light on all LED's		
Teach mode	Flashing simultaneously		
Background stored	Off	Off	Flashing
Not allowed DIN18650	Off	Flashing	On
Self test failed	Flashing simultaneously		On
Sensor error Contact installer	On	On	Off

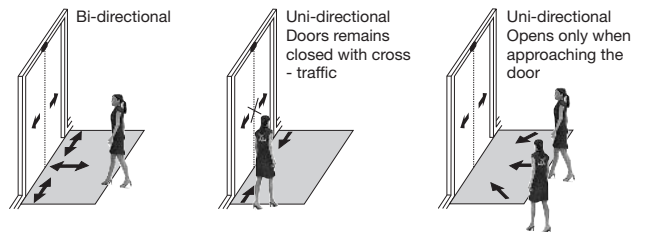
## Delivery Contents

- GUARDIAN1 door sensor
- User Manual
- Drilling template
- 3 m connection cable with connector
- **Packaging:** Cardboard box

## DIP-Switch Settings

Set up the DIP-switches to match the door controller.

- DIP-switch 1 - Sensor test input**
  - Test input Active Low
  - Test input Active High
- DIP-switch 2 - Safety output**
  - Normally closed (NC)
  - Normally open (NO)
- DIP-switch 3 - Motion output**
  - Normally closed (NC)
  - Normally open (NO)
- DIP-switch 4 - Direction recognition**
  - Bi-directional mode
  - Uni-directional mode)



- DIP-switch 5 and 6**
  - Not in accordance with DIN18650-1 (prEN16005)
  - In accordance with DIN18650-1 (prEN16005)
  - Not valid (red LED flashes and output relays is set in safe mode)

## Wiring Diagram

