

**CARLO GAVAZZI**  
Automation Components



*Guardian*

*Combined Motion and Presence  
Detection Sensor for Automatic  
Sliding Doors*



Sense





## Guardian, the Safe Choice

The Guardian sensor is a unique motion and presence detector that provides maximum safety and protection in pedestrian sliding door installations. Equipped with the latest digital video camera technology, Guardian watches over the entrance and exit area safeguarding people within, while at the same time controlling the doors.

Guardian is able to ignore cross traffic, and it has a brilliant capability of self-adjusting to changes in the environment and weather conditions.

Combining door automation and safety, Guardian is the most advanced stand alone door sensor on the market today.



**Simplified Setup**



**User Friendly**



**Time Saving**



**Diagnostic Warning**



### ***Motion and Presence Detector in One***

Guardian is an overhead sensor for pedestrian sliding doors. It operates with a motion zone and a presence zone. In the motion zone only moving objects are detected, while both moving and static objects are detected in the presence zone.

### ***Clearly Defined Detection Area***

The sensor has a large and well-defined detection zone. In addition, its motion zone can easily be reduced (blanked) in three directions in order to obtain the ideal detection zone.

### ***Easy and Quick to Set Up***

The sensor can be adjusted using only a screwdriver and fine-tuned by the press of a button.

The presence zone is easily set up by means of test targets and a simple teach procedure.

### ***Digital Video Camera Technology***

Due to its vision-based detection principle, Guardian is a passive unit. Therefore, it is immune to crosstalk from infrared or radar devices, just as it will not interfere with sensitive devices in the environment.

### ***Safety First***

Guardian has an advanced self-diagnostic system that checks for internal faults and faults coming from the surroundings. For instance, in case of malfunction, the sensor will keep the doors open and warn about the fault condition using the built-in LEDs.

### ***Approvals***

TÜV-certified according to DIN 18650-1 (prEN 16005).

UL-certified according to UL325



# Guardian - The Vision Sensor for Doors

## Advanced Technology - Simple and Easy

### Camera - VGA 480 x 600 pixels

Guardian is the first stand alone sensor based on passive CMOS (complementary metal-oxide semiconductor) camera technology.

The detection is determined by means of an advanced image processing unit. Its 1/4" lens involves a wide angle ensuring a large detection area.

### No Interference:

Since no electronic signals are emitted from the sensor, no mutual disturbance will occur between sensors placed close to or next to each other.

The sensor does not disturb sensitive devices in its surroundings such as medical equipment, alarm systems etc.

### Environmental Adaptation:

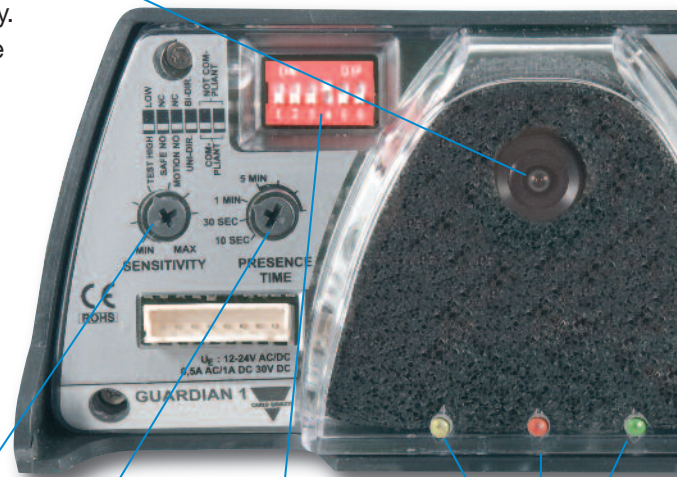
Guardian automatically adjusts itself to changes in the environment - such as store displays placed in the presence zone, sunrise and seasonal changes, such as leaves, snow etc.

### Sensitivity Settings

The sensitivity rotary switch allows settings in 7 steps for the right compromise between sensitivity and immunity.

### Presence Time Settings

The presence time defines the duration of time in which the door is kept open when an object is present and not moving in the presence zone. If there has been no movement when the presence time expires, the object will be stored as part of the background. The presence time can be set on the rotary switch for 10 seconds, 30 seconds, 1 minute or 5 minutes.



LED Indications

### DIP-switches for Initial Settings

- Test input high or low
- Safe output - normally open or closed
- Motion output - normally open or closed
- Uni- or bi-directional selection
- Accordance with DIN 18650



# Adjustment Within Seconds

## Flexible Motion Zone

Guardian offers a large motion area covering up to 3x3 m.

The motion zone is easily reduced - "blanked" - in three directions using the 7 step rotary switches "Left", "Center" or "Right".



## Housing Material

Robust housing in transparent polycarbonate and black ABS.

## Teach-in

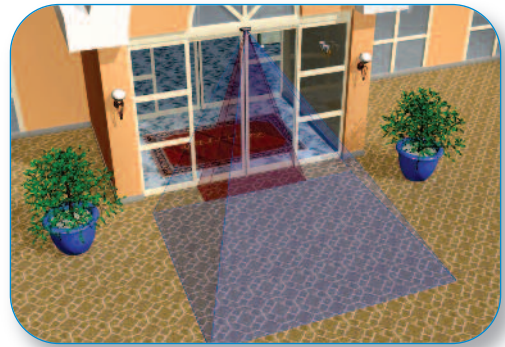
The presence zone is easily set up within seconds by means of a simple "Teach" procedure.

## Bi- and Uni-directional

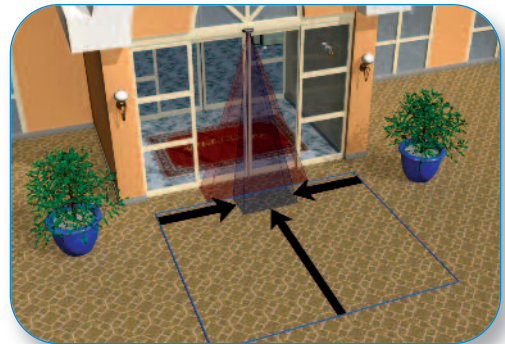
Guardian offers two operating modes:

- **Bi-direction:** any movement in the motion or presence zone will open the door.
- **Smart Uni-direction with Cross-walk Prevention:** The sensor recognizes movement and will open the door only when registering traffic towards it. Cross-traffic passing the door is ignored. This feature minimizes unnecessary door activity, reducing costs and energy consumption.

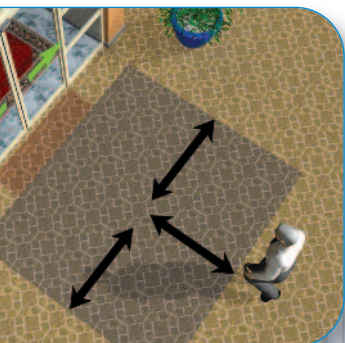
Maximum motion zone



Minimum motion zone



Bi-directional



Uni-directional;  
Doors remain closed on cross-traffic



Uni-directional;  
Doors open only on approach



# Guardian - The Vision Sensor for Doors



## Technical Specifications

<b>Rated operational voltage</b>	12-24 V AC/DC	
<b>No load supply current</b>	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>Technology</b>	Digital video camera technology	
<b>Power ON delay</b>	5 seconds	
<b>Output function</b>	Safety and Motion Zone	Relay – SPST
	Common relay data	1A DC 30VDC
	Operations minimum	600,000 @ 0.5A, 50 VAC/30 VDC
	Operations minimum	100,000 @ 1A, 30 VDC
<b>Test input</b>	Max. input current 5 mA	
	Active high	ON > 9 VAC/VDC OFF < 6 VAC/VDC
	Active low	ON < 6 VAC/VDC OFF > 9 VAC/VDC
<b>Sensitivity</b>	Adjustment in 7 steps	
<b>Presence zone reaction time</b>	Reaction time	210 ms (20% contrast, object speed 1 m/s, test body CA (DIN18650-1))
	Fall time:	500 ms
<b>Motion zone reaction time</b>	Reaction time	1.2 s (20% contrast, object speed 1 m/s, test body CA (DIN18650-1))
	Fall time	500 ms
<b>Presence time</b>	(Background relearn time)	7 step rotary switch
	In accordance with DIN18650	1 min, 5 min
	Not in accordance with DIN18650	10 sec, 30 sec
<b>Ambient temperature range</b>	Operating	-25° to +55°C (-13° to +131°F)
	Store	-25° to +80°C (-13° to +176°F)
<b>Ambient light</b>	10 lux - 50,000 lux 40 lux - 50,000 lux, TÜV approved, measured at the sensor surface	
<b>Contrast</b>	Min. 20% contrast between the floor and object	
<b>Motion zone sensing area (W x D)</b>	Height 180 cm	246 x 204 cm
	Height 220 cm	300 x 249 cm
	Height 300 cm	410 x 340 cm
<b>Presence zone sensing area</b>	Height 180 cm	42 cm x door width, max 246 cm
	Height 220 cm	51 cm x door width, max 300 cm
	Height 300 cm	70 cm x door width, max 410 cm
<b>Mounting height</b>	1.8 m to 3.0 m	
<b>Material</b>	Housing and cover	ABS Black
	Front glass	Clear transparent polycarbonate
<b>Connection cable</b>	3 m 8 x 0.14 mm <sup>2</sup> LIYY grey Max. cable length: 10 m	
<b>Environment protection</b>	IP64 (EN 60529, 60947-1)	
<b>Type of ESPE</b>	Type 2	
<b>LED indications</b>	Green LED	Power ON
	Yellow LED	Motion detected
	Red LED	Presence detected
<b>Electromagnetic compatibility</b>	In acc. with EMC directive 2004/108/EG Immunity in acc. with EN61326-1 and EN61326-3-1	

## OUR SALES NETWORK IN EUROPE

**AUSTRIA** - Carlo Gavazzi GmbH  
Ketzergrasse 374, A-1230 Wien  
Tel: +43 1 888 4112  
Fax: +43 1 889 10 53  
office@carlogavazzi.at

**BELGIUM** - Carlo Gavazzi NV/SA  
Schaarbeeklei 213/3, B-1800 Vilvoorde  
Tel: +32 2 257 4120  
Fax: +32 2 257 41 25  
sales@carlogavazzi.be

**DENMARK** - Carlo Gavazzi Handel A/S  
Over Hadstenvej 40, DK-8370 Hadsten  
Tel: +45 89 60 6100  
Fax: +45 86 98 15 30  
handel@gavazzi.dk

**FINLAND** - Carlo Gavazzi OY AB  
Petaksentie 2-4, FI-00661 Helsinki  
Tel: +358 9 756 2000  
Fax: +358 9 756 20010  
myynti@carlogavazzi.fi

**FRANCE** - Carlo Gavazzi Sarl  
Zac de Paris Nord II, 69, rue de la Belle  
Etoile, F-95956 Roissy CDG Cedex  
Tel: +33 1 49 38 98 60  
Fax: +33 1 48 63 27 43  
french.team@carlogavazzi.fr

**GERMANY** - Carlo Gavazzi GmbH  
Rudolf-Diesel-Strasse 23,  
D-64331 Weiterstadt  
Tel: +49 6151 81000  
Fax: +49 6151 81 00 40  
info@gavazzi.de

**GREAT BRITAIN** - Carlo Gavazzi UK Ltd  
7 Springlakes Industrial Estate,  
Deadbrook Lane, Hants GU12 4UH,  
GB-Aldershot  
Tel: +44 1 252 339600  
Fax: +44 1 252 326 799  
sales@carlogavazzi.co.uk

**ITALY** - Carlo Gavazzi SpA  
Via Milano 13, I-20020 Lainate  
Tel: +39 02 931 761  
Fax: +39 02 931 763 01  
info@gavazziacbu.it

**NETHERLANDS** - Carlo Gavazzi BV  
Wijkermeerweg 23,  
NL-1948 NT Beverwijk  
Tel: +31 251 22 9345  
Fax: +31 251 22 60 55  
info@carlogavazzi.nl

**NORWAY** - Carlo Gavazzi AS  
Melkeveien 13, N-3919 Porsgrunn  
Tel: +47 35 93 0800  
Fax: +47 35 93 08 01  
gavazzi@carlogavazzi.no

**PORTUGAL** - Carlo Gavazzi Lda  
Rua dos Jerónimos 38-B,  
P-1400-212 Lisboa  
Tel: +351 21 361 7060  
Fax: +351 21 362 13 73  
carlogavazzi@carlogavazzi.pt

**SPAIN** - Carlo Gavazzi SA  
Avda. Iparraguirre, 80-82,  
E-48940 Leioa (Bizkaia)  
Tel: +34 94 480 4037  
Fax: +34 94 480 10 61  
gavazzi@gavazzi.es

**SWEDEN** - Carlo Gavazzi AB  
V:a Kyrkogatan 1,  
S-652 24 Karlstad  
Tel: +46 54 85 1125  
Fax: +46 54 85 11 77  
info@carlogavazzi.se

**SWITZERLAND** - Carlo Gavazzi AG  
Verkauf Schweiz/Vente Suisse  
Sumpfstrasse 32,  
CH-632 Steinhausen  
Tel: +41 41 747 4535  
Fax: +41 41 740 45 40  
info@carlogavazzi.ch

## OUR SALES NETWORK IN NORTH AMERICA

**USA** - Carlo Gavazzi Inc.  
750 Hastings Lane,  
USA-Buffalo Grove, IL 60089,  
Tel: +1 847 465 6100  
Fax: +1 847 465 7373  
sales@carlogavazzi.com

**CANADA** - Carlo Gavazzi Inc.  
2660 Meadowvale Boulevard,  
CDN-Mississauga Ontario L5N 6M6,  
Tel: +1 905 542 0979  
Fax: +1 905 542 22 48  
gavazzi@carlogavazzi.com

**MEXICO** - Carlo Gavazzi Mexico S.A. de C.V.  
Calle La Montaña no. 18, Fracc. Los Pastores  
Naucaupan de Juárez, EDOMEX CP 53340  
Tel & Fax: +52.55.5373.7042  
gavazzi@carlogavazzi.com

## OUR SALES NETWORK IN ASIA AND PACIFIC

**SINGAPORE** - Carlo Gavazzi Automation  
Singapore Pte. Ltd.  
61 Tai Seng Avenue #05-06  
UE Print Media Hub  
Singapore 534167  
Tel: +65 67 466 990  
Fax: +65 67 461 980

**MALAYSIA** - Carlo Gavazzi Automation  
(M) SDN. BHD.  
D12-06G, Block D12,  
Pusat Perdagangan Dana 1,  
Jalan PJU 1A/46, 47301 Petaling Jaya,  
Selangor, Malaysia.  
Tel: +60 3 7842 7299  
Fax: +60 3 7842 7399

**CHINA** - Carlo Gavazzi Automation  
(China) Co. Ltd.  
Rm. 2308 - 2310, 23/F.,  
News Building, Block 1,  
1002 Shennan Zhong Road,  
Shenzhen, China  
Tel: +86 755 83699500  
Fax: +86 755 83699300

**HONG KONG** - Carlo Gavazzi  
Automation Hong Kong Ltd.  
Unit 3 12/F Crown Industrial Bldg.,  
106 How Ming St., Kowloon,  
Hong Kong  
Tel: +852 23041228  
Fax: +852 23443689

## OUR COMPETENCE CENTRES & PRODUCTION SITES

Carlo Gavazzi Industri A/S  
Hadsten - **DENMARK**

Carlo Gavazzi Ltd  
Zejtun - **MALTA**

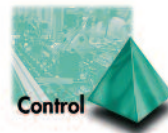
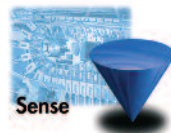
Carlo Gavazzi Controls SpA  
Belluno - **ITALY**

Uab Carlo Gavazzi Industri Kaunas  
Kaunas - **LITHUANIA**

Carlo Gavazzi Automation  
(Kunshan) Co., Ltd.  
Kunshan - **CHINA**

## HEADQUARTERS

Carlo Gavazzi Automation SpA  
Via Milano, 13 - I-20020  
Lainate (MI) - **ITALY**  
Tel: +39 02 931 761  
info@gavazzi-automation.com



**CARLO GAVAZZI**  
Automation Components

Further information on  
[www.gavazziautomation.com](http://www.gavazziautomation.com) - [www.carlogavazzi.com](http://www.carlogavazzi.com)

**CARLO GAVAZZI**