



Wireless Safety System

Sensors

WSM/WSS

Wireless Safety System

The Carlo Gavazzi Wireless Safety System for use with safety edges on industrial doors is designed to eliminate traditional spiral cables between the door controller and the door. Instead, the system utilizes a bi-directional radio communication with an operating frequency of 2.4 GHz making it less susceptible to common radio interference. Incorporating a test signal feature and enhanced battery efficiency, the system makes a highly reliable and safe solution for your wireless door application.

The WSM system is compatible with a large variety of safety edges on the market which reduces the need for new technology investments. Or it can be used with the Carlo Gavazzi low consumption photoelectric safety edge sensors. The subcontroller is connected to the safety edge and the main controller to the door or gate control panel safety input.

The application can consist of one main controller and up to four sub controllers which in their turn can control 2 safety edges - a total of 8 separate safety edges for each main controller. This wireless safety system is especially well suited to high speed doors with frequent traffic, tall doors and megadoors, doors in public areas - just to name a few applications.



Long Battery Life

The wireless sub controller is designed for exceptional battery performance, with a minimum of one year for one set of sensors. The number of batteries is optional from one to four, with a higher number corresponding to a longer battery life. With Carlo Gavazzi photoelectric safety edge, 4 batteries and 20 seconds of active time per open and close cycle and 800 cycles per day, the battery lifetime is more than one year.

Long Wireless Distance

The wireless distance of 10 meters between the main controller and the sub controller allows the control of very large doors, where spiral cables would not reach. Opening heights of up to 20 m can be controlled with the main module mounted at a height of 10 m.

Cross Talk

Since each submodule and the corresponding photoelectric sensor is synchronized and multiplexed, cross talk among individual sensors cannot occur.

Standards/Certifications

The Carlo Gavazzi wireless safety system complies with the safety standards EN13241-1, EN12445, EN12453, EN12978, Machinery Directive 2006/42/EC, amended by Directive 98/79/EC for Industrial Doors. Low voltage directive 2006/95/EC.

Fulfills the requirements for Radio Equipment and Telecommunication Terminal Equipment (R&TTE) Directive 1999/5/EC. Fulfills the requirements for America FCC part 15(C) 15.247 FCC ID: Y55WSS0001 as well for Canada IC RSS210.



Applications

High Speed Doors

In door applications where speed is important and door movements are frequent, the spiral cable between the moving door and the controller is susceptible to wear and breakage.

Our Solution

Carlo Gavazzi's Wireless Safety System replaces the cable, thus reducing difficult and costly repairs, and expensive downtime is avoided. Battery lifetime is high and the optional use of 1 to 4 batteries makes it flexible and customizable to fit the user's servicing cycle.



Photo: Nergeco 2010

Tall Doors and Megadoors

Where very large opening heights are required, for instance hangar doors, spiral cables will not stretch far enough.

Our Solution

Carlo Gavazzi's Wireless Safety System allows for opening heights up to 10 m, and even 20 m with the main module placed at a height of 10 m.



Doors in Public Areas

Door applications with spiral cables in public places such as car parks and business streets are often exposed to vandalism or accidental damage because of their easily accessible placing.

Our Solution

By removing the cables the applications are less exposed to damage and a continuous and reliable operation is secured.



Applications

Adjacent Doors

The Carlo Gavazzi Wireless Safety System uses 16 different channels in order to avoid cross-talk between adjacent doors.



Door in Door

In door-in-door applications the big door has to remain shut when the pedestrian door is open. This safety function is monitored by the sub controller's door-in-door limit switch input.



WSM - Main Controller



Name	Range	No. of Channels	Supply	Size
WSM 2 B A 2 D 24	10 m (wireless)	16	12-24 VAC/DC	75 x 125 x 35 mm

WSS - Subcontroller



WSS 2 BA 2 BAT	10 m (wireless)	16	1-4 lithium batteries 3.6 VDC size AA	22 x 45 x 214 mm
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PB11 - Emitter/Receiver



PB 11 CNT 15 WE	15 m		From subcontroller	Ø11 x 24.5 mm
PB 11 CNT 15 WR	15 m		From subcontroller	Ø11 x 24.5 mm

WSM2BA2D24



Main Controller

With its neutral IP 66 housing design for outdoor use and built-in antenna, the Carlo Gavazzi main controller makes a discreet contribution to the wireless installation. The controller has three SPST relay outputs; one normally closed (NC), one normally open (NO) 8.2 K Ω - and one normally closed output for low battery alarm. One main controller can control up to 4 sub controllers. A test input ensures verification of the sensor safety function and is also used for activating sub modules from battery save mode. Any loss of communication between the main and sub modules will immediately activate the safety output. The sub controllers' active time is adjustable by dip-switch on the main controller and can be set from 10 to 80 seconds. 16 channels are available to eliminate crosstalk.

WSS2BA2BAT



Subcontroller

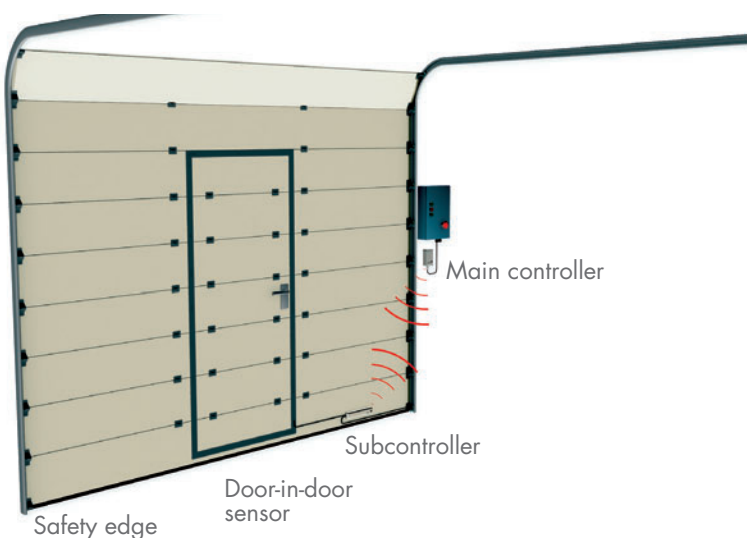
This flexible Carlo Gavazzi subcontroller can handle 2 safety edges and 1 door-in-door limit switch. It can control inputs from all standard NO 8.2 K Ω safety edges, all standard NC safety edges and the Carlo Gavazzi photoelectric sensors PB11CNT15WX. The optical safety edge distance is 15 m. The number of batteries is optional; one to four batteries (3.6 lithium AA) are applicable.

PB11CNT15WX



Safety Edge

The Carlo Gavazzi photoelectric safety edge is made of 11 mm rubber profiles. The photoelectric beam is adjusted at each wake up signal from the main controller to assure optimized detection performance.



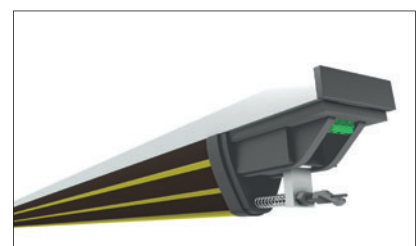
The battery powered subcontroller connects to the safety edge. The main controller connects to the door control panel. This affords a wireless link between the safety edge and the control panel that eliminates the need for a direct wire connection between the safety edge and the door controller.

Alternative Safety Edges

The Carlo Gavazzi wireless system is compatible with alternative safety edges, for instance:



Conductive rubber normally open safety edge 8.2 k Ω



Mechanical normally closed safety edge

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