

WSM, WSS

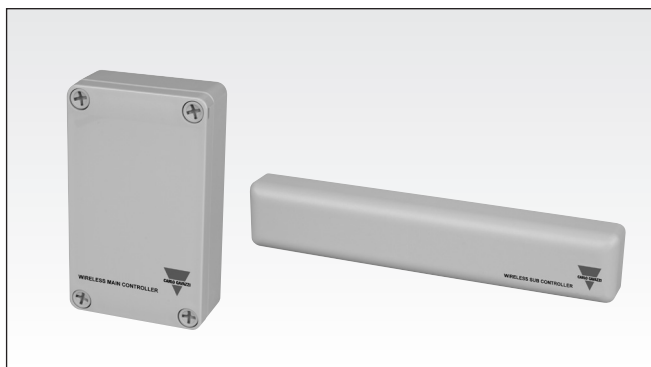
Технические характеристики

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Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	

Wireless Entrapment Protection Device For Industrial Doors ESPE Type WSM / WSS ...

CARLO GAVAZZI



- Wireless Entrapment Protection Device for Industrial Doors
- Input for two ESPE (electro-sensitive protective equipment)
- Replaces cable between Door controller and ESPE
- Input for door-in-door sensor
- Output ESPE: 1 x SPST NC, 1 x SPST NO (8,2kΩ)
- Output low battery: 1 x SPST NC contact
- 2,4 GHz duplex communication
- Built-in antenna
- IP66 ratings



Product Description

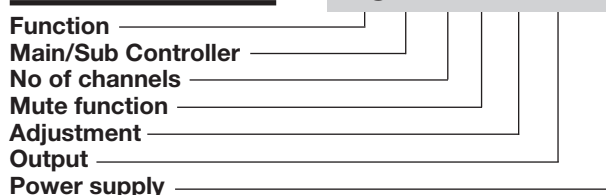
Wireless Entrapment Protection Device (EPD) for Industrial Doors. The system is designed to replace the connection cable between the ESPE (electro-sensitive protective equipment) and the door controller. The sub controller has input for either N.C. ESPE, N.O. 8.2 kΩ ESPE or the Carlo Gavazzi low consumption photoelectric ESPE N.C. contact. The system is designed for high reliability

using 2.4 GHz duplex communication between the main controller and sub controller. The main controller can handle up to 4 sub modules i.e. one system can handle 8 ESPEs.

The sub controller is activated by a test signal from the main controller and stays active during the period of time set at the main controller up to 80 seconds.

Ordering Key

WSM 2 B A 2 D24



Type Selection

Housing W x H x D	Range Wireless	Type	Ordering no.
75 x 125 x 35 mm	10 m	Main Controller	WSM 2 B A 2 D24
45 x 214 x 22 mm	10 m	Sub Controller	WSS 2 B A 2 BAT

Housing W x H x D	Range S _n	Cable length	Type	Ordering no.
Ø11 x 24.5 mm	15 m	2 m	Emitter	PB 11 CNT 15 WE
Ø11 x 24.5 mm	15 m	12 m	Receiver	PB 11 CNT 15 WR

Specifications Main Controller (WSM)

Rated operational volt. (U_B)	12 to 24 VAC/DC (-10 +15%)	Indications Main Controller	Green LED
Ripple (U_{rpp})	≤ 10%	Power supply	2 x yellow LEDs
Supply current	< 50 mA	ESPE 1 or 2 active	Red LED
Communication Frequency	2.4 GHz Duplex	Low Battery	Toggle red & green LED
Number of channels	16 selectable via DIP switch	Channels not synchronized	
Sub Controller live time	10 – 80 sec. Selectable via DIP-switches	Test input (active high or active low)	Selectable via DIP switch
Relay ESPE NC ESPE NO 8.2 kΩ Low Battery	SPST SPST SPST 1 A / 30 VDC 0,5 A / 30 VAC >100.000 AC11 or DC11	Active high	12-24 V
Protection	Reverse polarity, transients	Active low	0 V
		Test impulse time	
		Minimum pulse width	> 100 mS
		Maximum pulse width	< 2 sec
		Operating frequency	25 Hz per sub controller
		Response time	
		OFF-ON (t _{ON})	≤ 120 ms
		ON-OFF (t _{OFF})	≤ 120 ms

Specifications Main Controller (WSM) (cont.)

Environmental			IC RSS210, RSS GEN, RSS-102 IC-ID: 7188C-WSM0001
Installation category	III (IEC 60664/60664A; 60947-1)	CE-marking	EN12445, EN12453, EN12978 Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC Low Voltage Directive 2006/95/EC Electromagnetic Compatibility Directive 2004/108/EC Machinery Directive 2006/42/EC, amended by Directive 98/79/EC For industrial doors only See EN13241-1
Pollution degree	3 (IEC 60664/60664A; 60947-1)		
Degree of protection	IP66		
Rated insulation voltage	50 VDC		
Temperature			
Operating Temperature	-25° to +55°C (-13° to +131°F)		
Storage Temperature	-40° to +70°C (-40° to +158°F)		
Size	75 x 35 x 125 mm		
Material			
Housing	Light Grey ABS		
Top	Light Grey ABS		
Weight	230 g		
Approvals	cULus UL508 FCC port 15 B,C FCC-ID: Y55WSM0001		

NOTE: Changes/modifications not approved by Carlo Gavazzi could void the user's authority to operate the equipment.

Specifications Sub Controller (WSS)

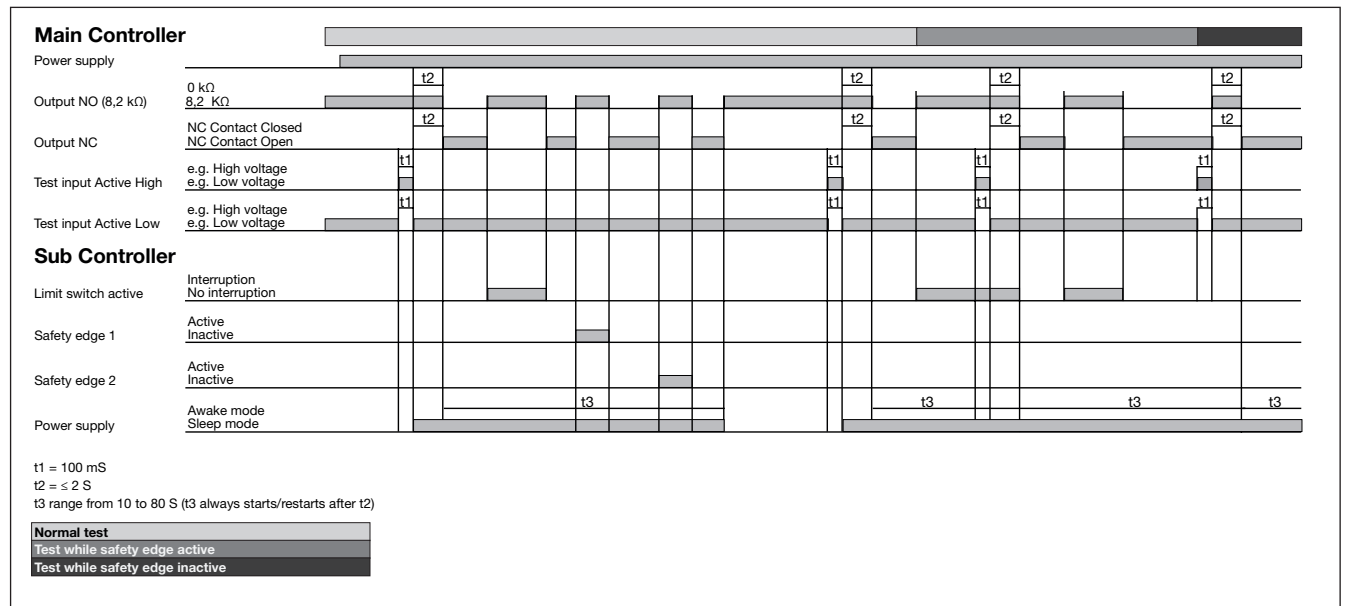
Rated operational volt. (U_B)	1 to 4 ER14505 3.6 VDC size AA Lithium batteries ≥ 2700 mAh	Environmental	
Supply current	< 40 mA	Installation category	III (IEC 60664/60664A; 60947-1)
Communication Frequency	2.4 GHz Duplex	Pollution degree	3 (IEC 60664/60664A; 60947-1)
Number of channels	16 selectable on DIP switch	Degree of protection	IP66
Sub Controller live time	10 – 80 Sec. Selectable on DIP-switches at the main controller	Rated insulation voltage	50 VDC
ESPE inputs		Temperature	
ESPE NC	Standard NC ESPE	Operating Temperature	-25° to +55°C (-13° to +131°F)
ESPE NO 8.2 kΩ	Standard NO, 8.2 kΩ	Storage Temperature	-40° to +70°C (-40° to +158°F)
Photoelectric ESPE	Carlo Gavazzi Low current ESPE PES for wireless applications	Size	22 x 45 x 214 mm
Door in door input	NC input from Limit Switch	Material	
Response time		Housing	Light Grey PC
OFF-ON (t _{ON})	≤ 120 mS	Bottom	Black PC
ON-OFF (t _{OFF})	≤ 120 mS	Weight	220 g
Wake time after sleep mode	≤ 400 mS	Approvals	cULus UL508 FCC port 15 B,C FCC-ID: Y55WSM0001 IC RSS210, RSS GEN, RSS-102 IC-ID: 7188C-WSM0001
Protection	Reverse polarity	CE-marking	EN12445, EN12453, EN12978 Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC Low Voltage Directive 2006/95/EC Electromagnetic Compatibility Directive 2004/108/EC Machinery Directive 2006/42/EC, amended by Directive 98/79/EC For industrial doors only See EN13241-1
Indications Sub Controller			
ESPE 1	Yellow LED		
ESPE 2	Yellow LED shines in 20 sec. after a short activation on the pushbutton		
Test input	The submodule wakes up after the test input of the main controller		
Antenna	Built in		

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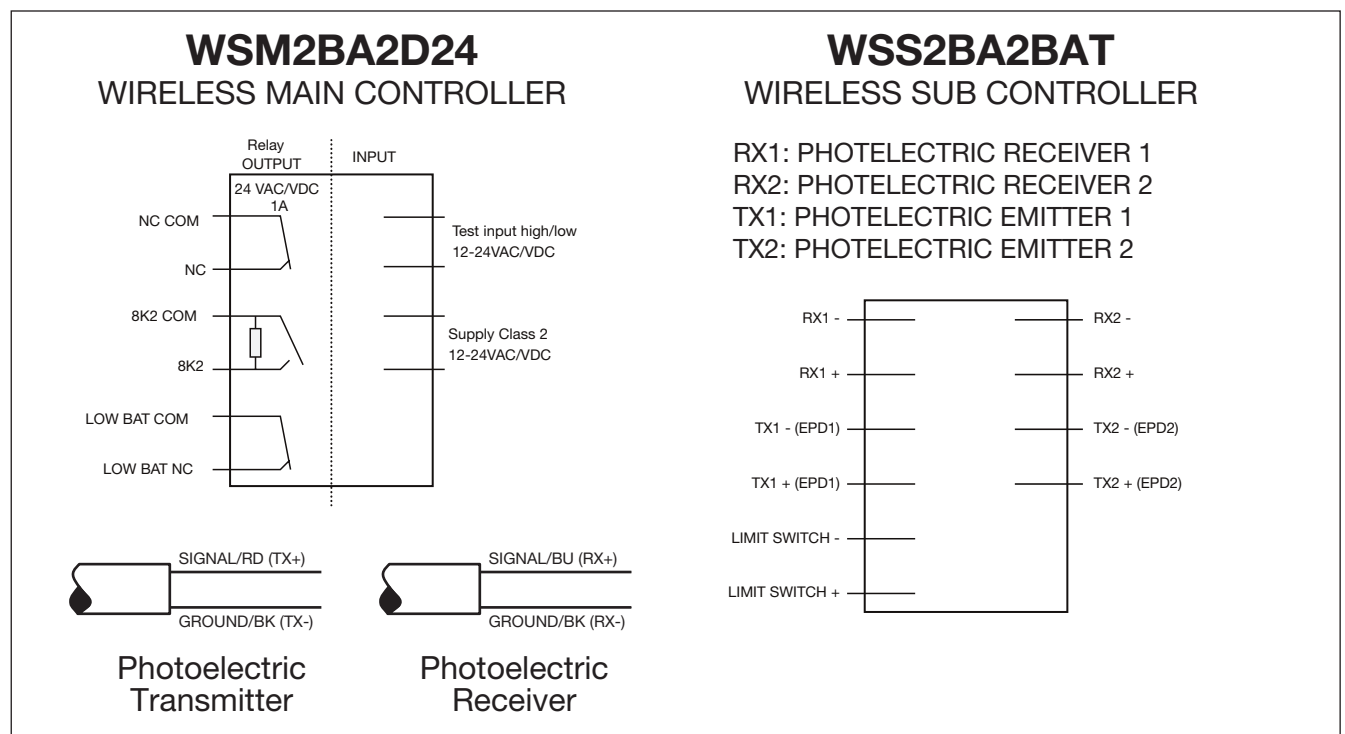
Specifications Photoelectric Sensors ESPE (PB11)

Rated operational volt. (U_B)	From Sub Controller	Degree of protection	IP67
Rated operational dist. (S_n)	15 m	Housing size	Ø11 x 24.5 mm
Light source	LED 880 nm	Housing Material	PA6 Glass reinforced
Light Type	Infrared Modulated	UL-Approvals	UL508
Ambient light	>20,000 lux	CE-marking	EN12978

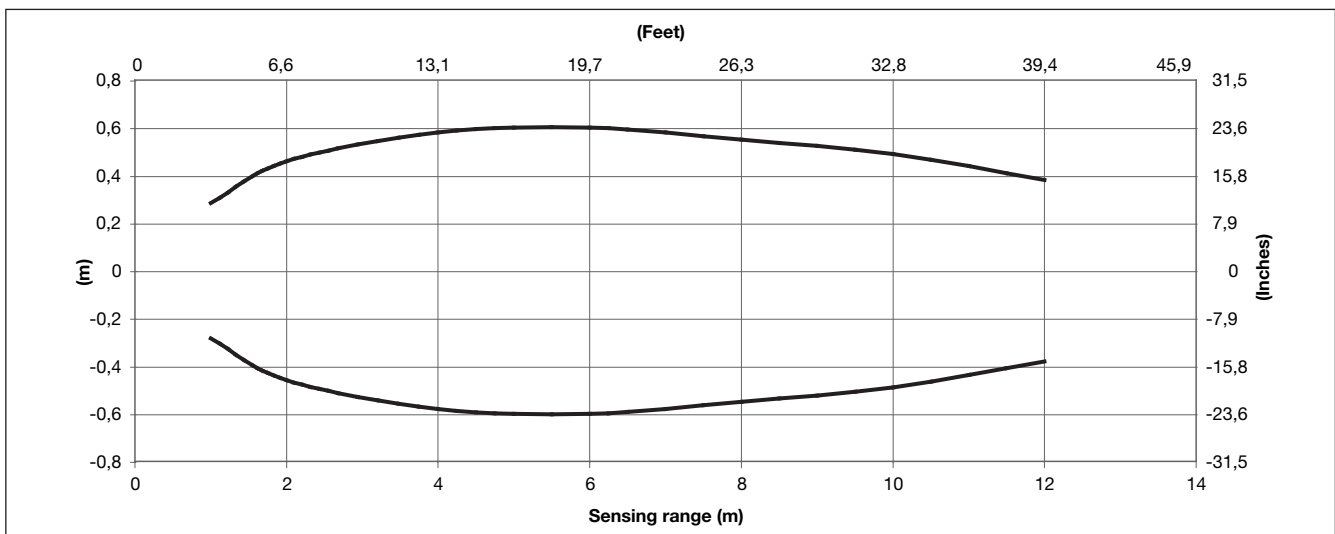
Operation Diagram



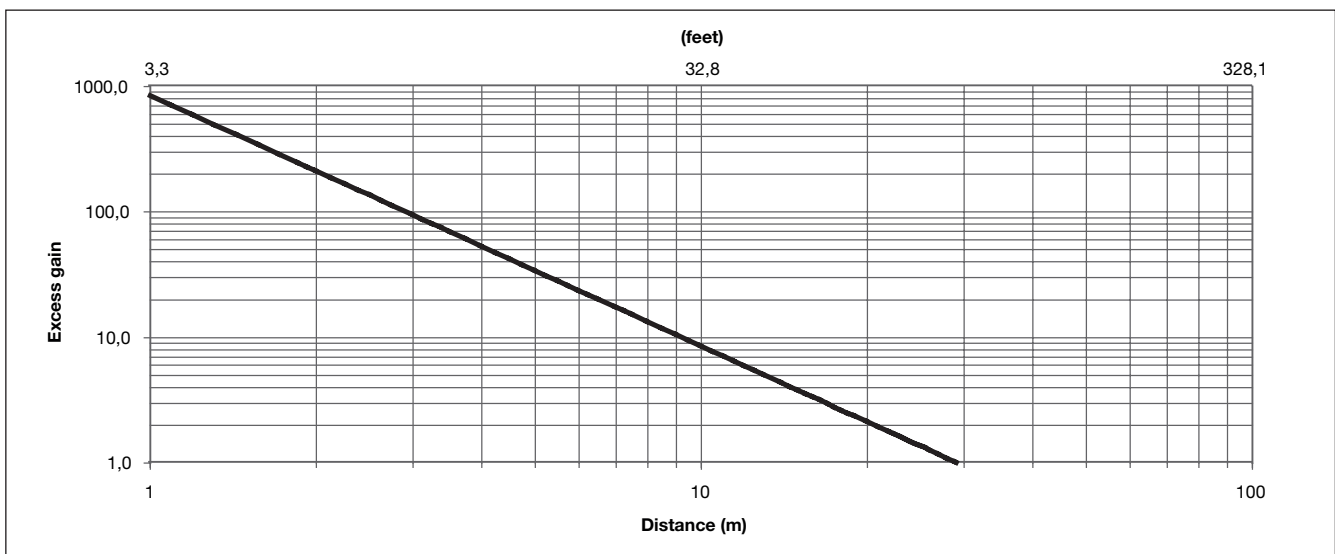
Wiring Diagrams



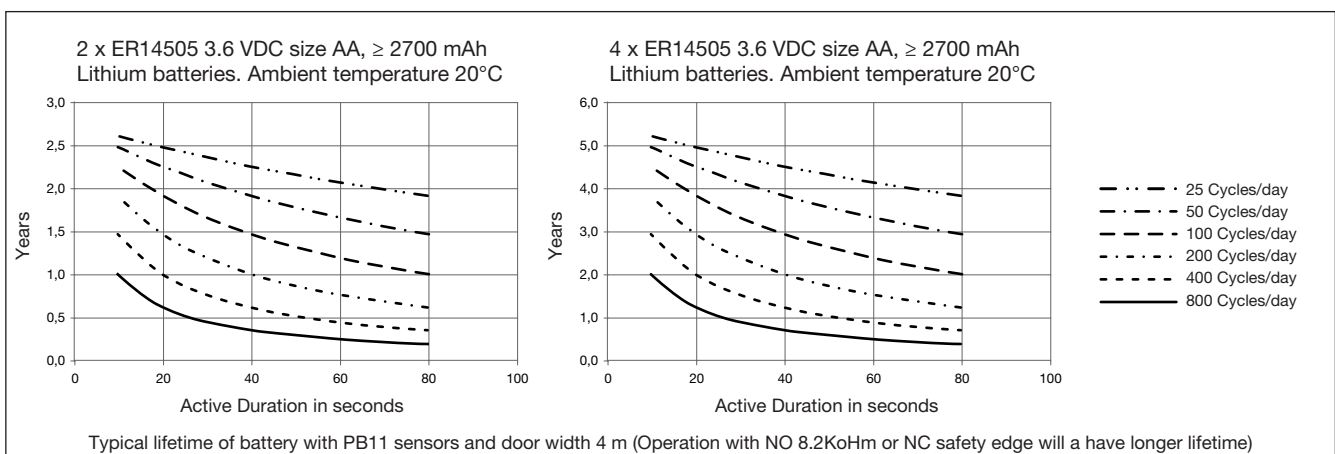
Detection Diagram



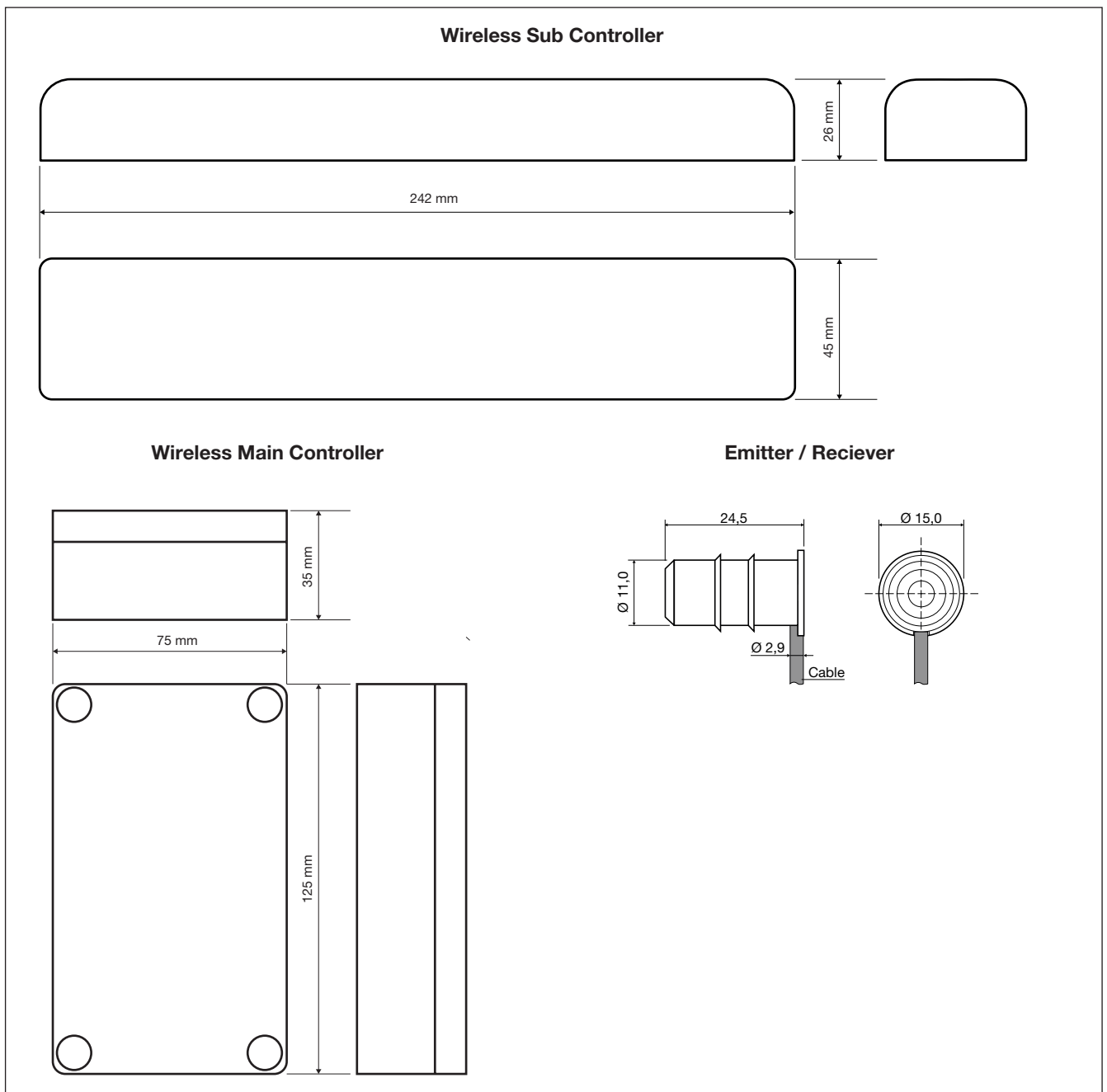
Excess Gain



Battery Lifetime



Dimensions



Delivery Contents Main Controller

- Wireless Main Controller: WSM2BA2D24
- Manual
- 4 x SCREW M4.5X45 MM BOSSARD BN615
- 4 x RAWLPLUG SX8 NYLON
- **Packaging:** Cardboard box

Delivery Contents Receiver

- Receiver: PB11CNT15WR
- **Packaging:** Plastic bag

Delivery Contents Sub Controller

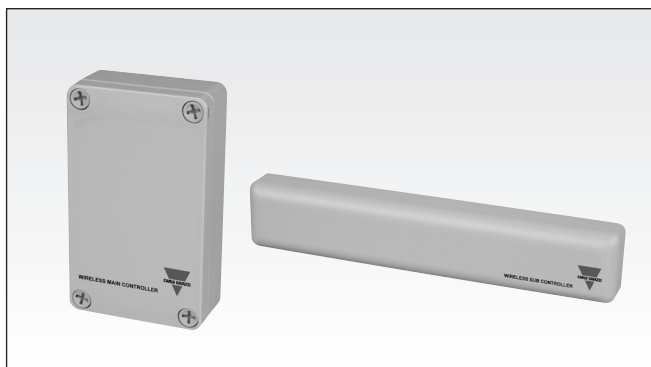
- Wireless Sub Controller: WSS2BA2BAT
- Manual
- 2 x ER14505 3.6 VDC size AA \geq 2700 mAh Lithium batteries
- 4 x SCREW M4X10 MM BOSSARD BN1023
- **Packaging:** Cardboard box

Delivery Contents Emitter

- Emitter: PB11CNT15WE
- **Packaging:** Plastic bag

Wireless Entrapment Protection Device For Industrial Gates ESPE Type WSM / WSS ...

CARLO GAVAZZI



- Wireless Entrapment Protection Device for Industrial Gates
- Input for two ESPE (electro-sensitive protective equipment)
- Replaces cable between Gate controller and ESPE
- Output ESPE: 2 x SPST NC or 2 x SPST NO (8,2kΩ) or 2 x Photoelectric sensors
- Output low battery: 1 x SPST NC or NO
- 2,4 GHz duplex communication
- Built-in antenna
- IP66 ratings



Product Description

Wireless Entrapment Protection Device (EPD) for Industrial Gates. The system is designed to replace the connection cable between the ESPE (electro-sensitive protective equipment) and the gate controller. The sub-controller has input for either N.C. ESPE, N.O. 8.2 kΩ ESPE or the Carlo Gavazzi low consumption photoelectric ESPE N.C. contact. The system is designed for high reliability

using 2.4 GHz duplex communication between the main controller and sub controller. The main controller can handle up to 6 sub controllers i.e. one system can handle 12 ESPEs. The active time is initiated with a test signal applied on the main controller. The duration of this can be fixed or defined by the length of the test signal.

Ordering Key

WSM 6 G A 00 D24

Function	_____
Main/Sub Controller	_____
No. of submodules	_____
Function: Gate version	_____
Adjustment	_____
Main: NO 8K2 or NC output	_____
Sub: No. of Safety edges	_____
Main: Low bat. output NO or NC	_____
Sub: Not used	_____
Power supply	_____

Type Selection

Housing W x H x D	Range Wireless	Output	Type	Ordering no.
75 x 125 x 35 mm	15 m	NO 8K2	Main Controller	WSM6GAOOD24
75 x 125 x 35 mm	15 m	NC	Main Controller	WSM6GACCD24
45 x 214 x 22 mm	15 m	-	Sub Controller	WSS2GA2BAT
Housing W x H x D	Range S _n	Cable length	Type Photoelectric Sensor	Ordering no.
Ø11 x 24.5 mm	2.5 m	2 m	Emitter	PB 11 CNT 15 WE
Ø11 x 24.5 mm	2.5 m	12 m	Receiver	PB 11 CNT 15 WR

Specifications Main Controller (WSM)

Rated operational volt. (U_B)	12 to 24 VAC/DC (-10 +15%)	Low Battery	SPST 1 A / 30 VDC 0.5 A / 30 VAC >100,000 AC11 or DC11
Ripple (U_{ripple})	≤ 10%	Protection	Reverse polarity, transients
Supply current	< 50 mA	Indications Main Controller	Green LED 2 x yellow LEDs Red LED Toggle red & green LED
Communication Frequency	2.4 GHz Duplex	Power supply	
Channel number	16 selectable via DIP switch	ESPE 1 or 2 active	
Active time	15 – 105 s, fixed time or manually set	Low Battery	
Relay		Channels not synchronized	
2 x ESPE NC or	SPST	Test input	Selectable via DIP switch
2 x ESPE NO 8.2 kΩ	SPST	(active high or active low)	12-24 V
		Active high	0 V
		Active low	



Specifications Main Controller (WSM) (cont.)

Test impulse time		Size	75 x 35 x 125 mm
Minimum pulse width	> 100 ms	Material	
Maximum pulse width	< 2 s	Housing	Light Grey ABS
Response time		Top	Light Grey ABS
t _{OFF} Fast mode	< 15 ms	Weight	230 g
t _{OFF} Normal mode (1 sub)	< 42 ms	Approvals	cULus cURus FCC IC
t _{OFF} Normal mode (2 sub)	< 42 ms	UL508	
t _{OFF} Normal mode (3 sub)	< 56 ms	UL325	
t _{OFF} Normal mode (4 sub)	< 70 ms	port 15 B,C	
t _{OFF} Normal mode (5 sub)	< 85 ms	FCC-ID: Y55WSM0001	
t _{OFF} Normal mode (6 sub)	< 100 ms	RSS210, RSS GEN,	
t _{OFF} Idle mode	< 5000 ms	RSS-102	
t _{ON}	> 250 ms	IC-ID: 7188C-WSM0001	
Safe state reaction time (In case of Sub module failure)		CE-marking	EN12445, EN12453, EN12978 Radio Equipment and Telecommunications Terminal Equipment
Fast mode	< 16 ms		(R&TTE) Directive 1999/5/EC
Normal mode	Same as response time		Low Voltage Directive 2006/95/EC
Idle mode	Same as response time		Electromagnetic Compatibility Directive 2004/108/EC
Power ON delay (t_v)	≤ 500 ms		Machinery Directive 2006/42/EC, amended by Directive 98/79/EC
Environmental			For industrial doors only See EN13241-1
Installation category	III (IEC 60664/60664A; 60947-1)		
Pollution degree	3 (IEC 60664/60664A; 60947-1)		
Degree of protection	IP66		
Rated insulation voltage	50 VDC		
Temperature			
Operating Temperature	-25° to +55°C (-13° to +131°F)		
Storage Temperature	-40° to +70°C (-40° to +158°F)		

NOTE: Changes/modifications not approved by Carlo Gavazzi could void the user's authority to operate the equipment.

Specifications Sub Controller (WSS)

Rated operational volt. (U_B)	1 to 4 ER14505 3.6 VDC size AA, ≥ 2700 mAh Lithium batteries (Supplied with 2 batteries)	Indications Sub Controller	
Supply current	< 40 mA	ESPE 1	Yellow LED
Communication Frequency	2.4 GHz Duplex	ESPE 2	Yellow LED
Channel number	16 selectable on DIP switch		Active in 30 sec. after a short activation on the push button
Power ON delay (t_v)	3 s	Environmental	
ESPE inputs		Installation category	III (IEC 60664/60664A; 60947-1)
ESPE NC	Standard NC ESPE	Pollution degree	3 (IEC 60664/60664A; 60947-1)
ESPE NO 8.2 kΩ	Standard NO, 8.2 kΩ	Degree of protection	IP66
Photoelectric ESPE	Carlo Gavazzi Low current ESPE PES for wireless applications	Rated insulation voltage	50 VDC
Normal/Fast mode		Temperature	
Normal mode	Connection between the two "LIMIT SWITCH" ter- minals (factory setting)	Operating Temperature	-25° to +55°C (-13° to +131°F)
Fast mode	No connection between the two "LIMIT SWITCH" termi- nals	Storage Temperature	-40° to +70°C (-40° to +158°F)
Protection	Reverse polarity	Size	22 x 45 x 214 mm
		Material	
		Housing	Light Grey PC
		Bottom	Black PC
		Weight	220 g



Specifications Sub Controller (WSS) (cont.)

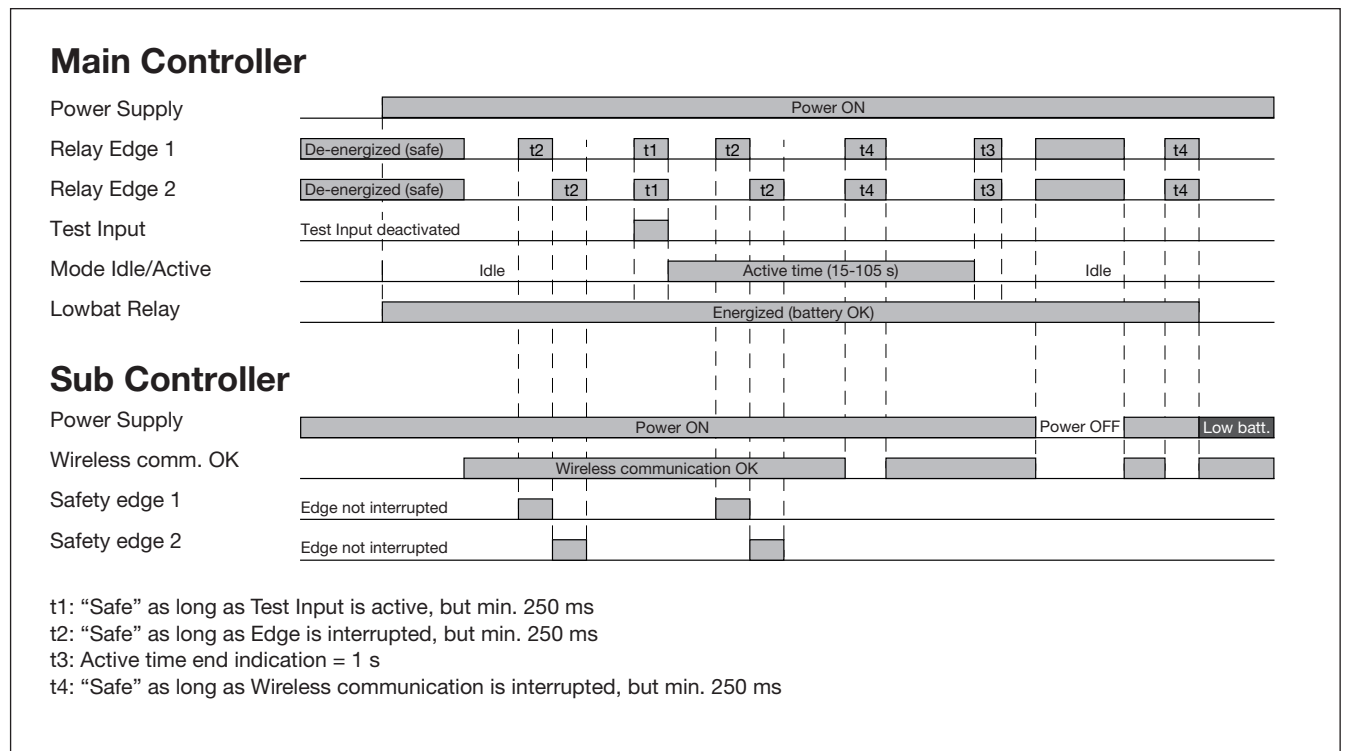
Approvals	cULus UL508 cURus UL325 FCC port 15 B,C FCC-ID: Y55WSM0001 IC RSS210, RSS GEN, RSS-102 IC-ID: 7188C-WSM0001	(R&TTE) Directive 1999/5/EC Low Voltage Directive 2006/95/EC Electromagnetic Compatibility Directive 2004/108/EC Machinery Directive 2006/42/EC, amended by Directive 98/79/EC For industrial doors only See EN13241-1
CE-marking	EN12445, EN12453, EN12978 Radio Equipment and Telecommunications Terminal Equipment	

NOTE: Changes/modifications not approved by Carlo Gavazzi could void the user's authority to operate the equipment.

Specifications Photoelectric Sensors ESPE (PB11)

Rated operational volt. (U_B)	From Sub Controller	Degree of protection	IP67
Rated operational dist. (S_n)	2.5 m	Housing size	Ø11 x 24.5 mm
Light source	LED 880 nm	Housing Material	PA6 Glass reinforced
Light Type	Infrared Modulated	UL-Approvals	UL508
Ambient light	< 20,000 lux	CE-marking	EN12978

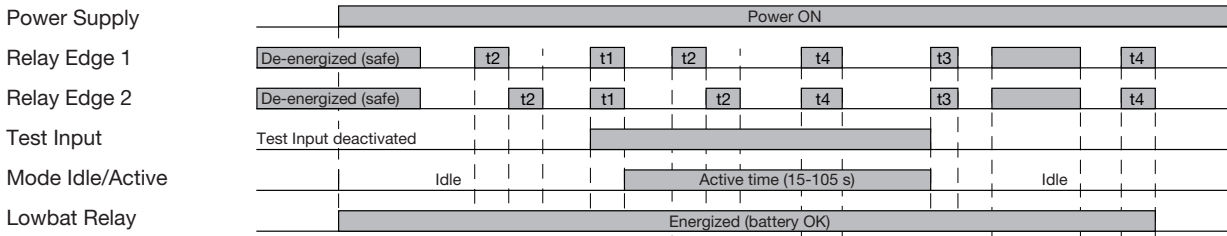
Operation Diagram: Fixed Active Time



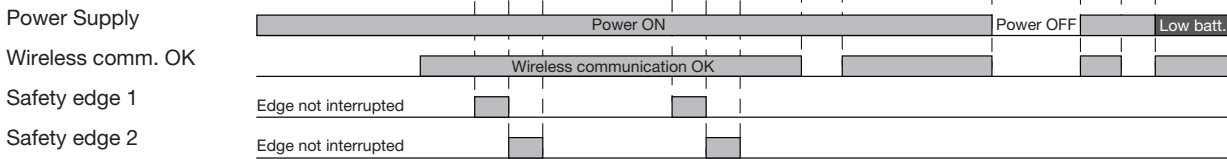


Operation Diagram: Manual Active Time

Main Controller

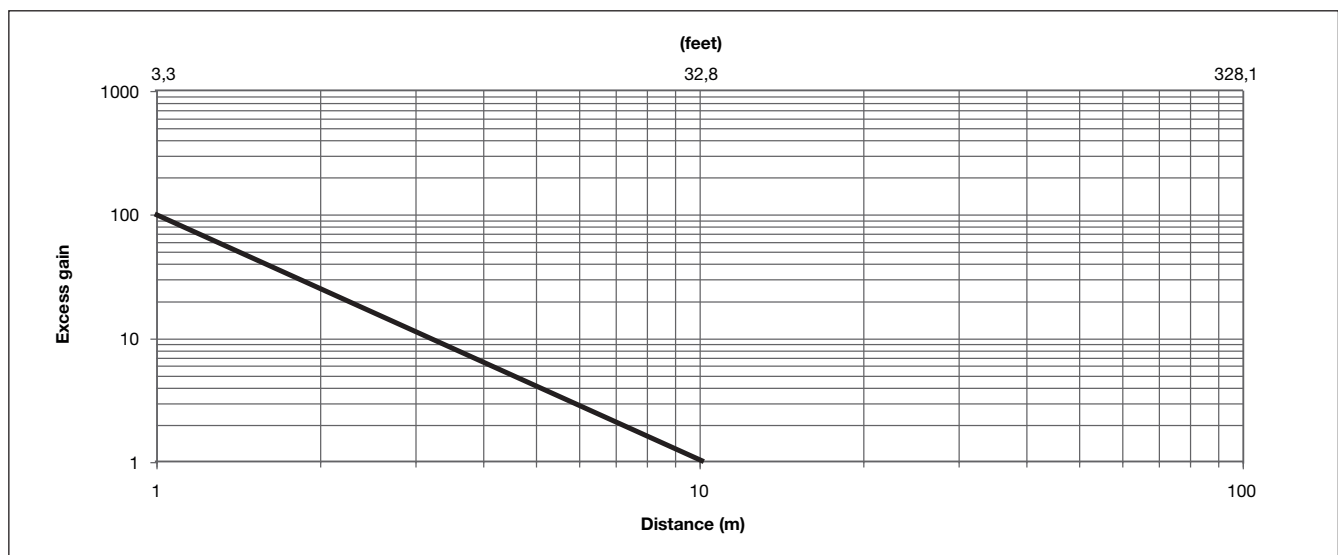


Sub Controller



- t1: "Safe" as long as Test Input is active, but min. 250 ms
- t2: "Safe" as long as Edge is interrupted, but min. 250 ms
- t3: Active time end indication = 1 s
- t4: "Safe" as long as Wireless communication is interrupted, but min. 250 ms

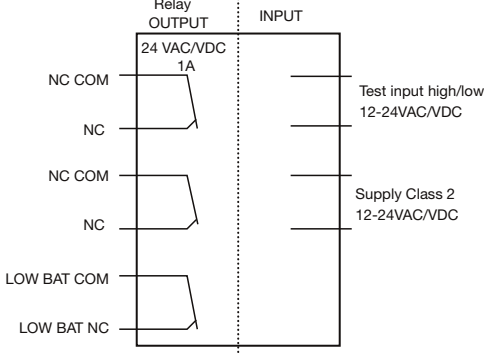
Excess Gain PB11



Wiring Diagrams

WSM6GACCD24

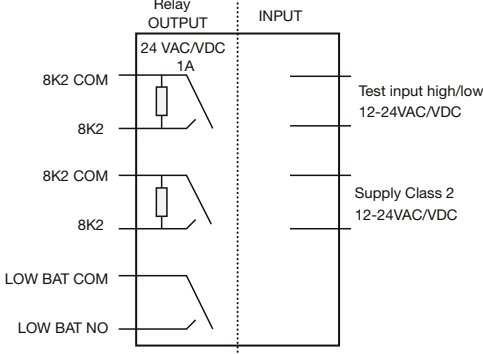
WIRELESS MAIN CONTROLLER



NB: Relays shown in operational state

WSM6GAOOD24

WIRELESS MAIN CONTROLLER

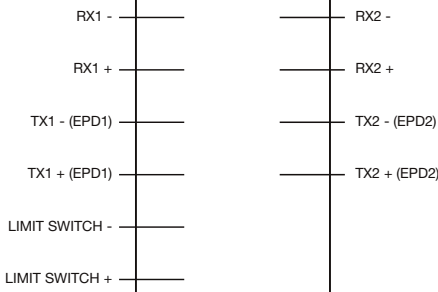


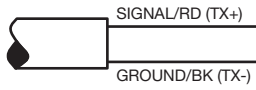
NB: Relays shown in operational state

WSS2GA2BAT

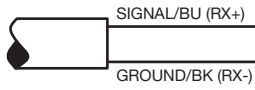
WIRELESS SUB CONTROLLER

RX1: PHOTELECTRIC RECEIVER 1
 RX2: PHOTELECTRIC RECEIVER 2
 TX1: PHOTELECTRIC EMITTER 1
 TX2: PHOTELECTRIC EMITTER 2



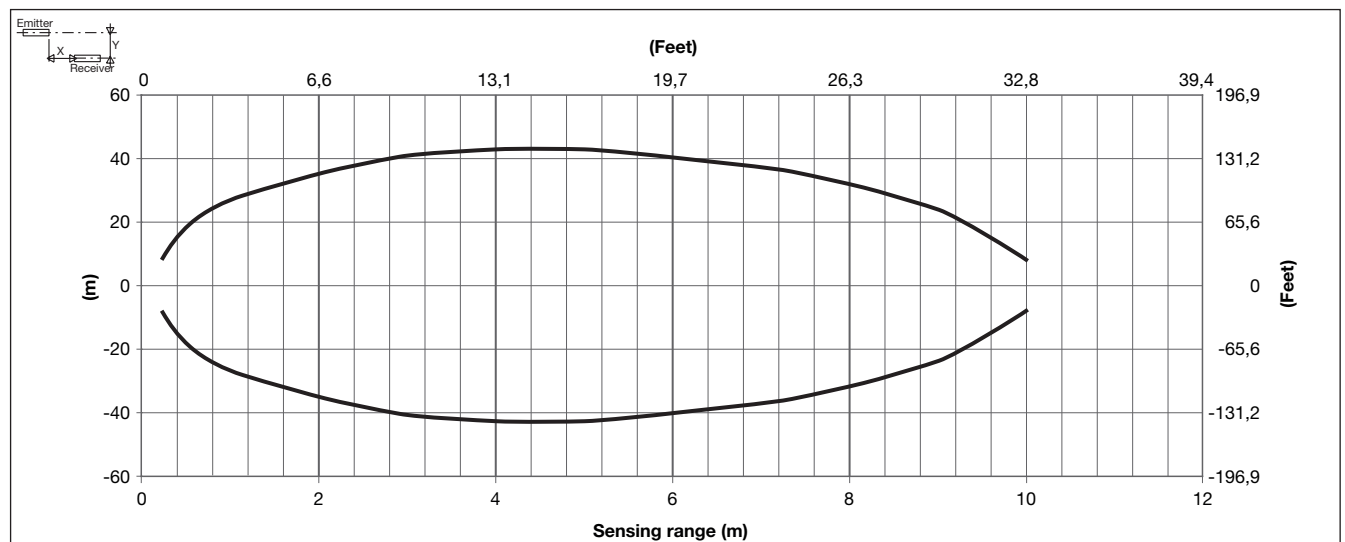


Photoelectric Transmitter



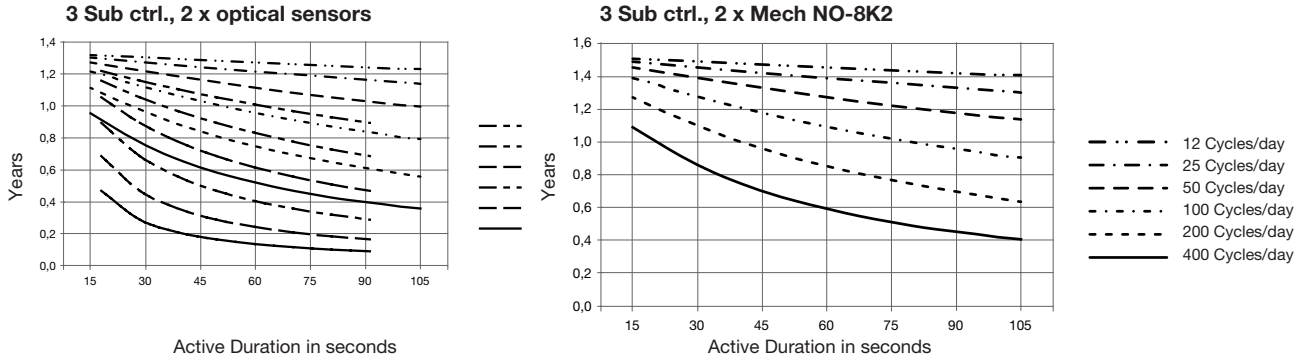
Photoelectric Receiver

Detection Diagram PB 1 1

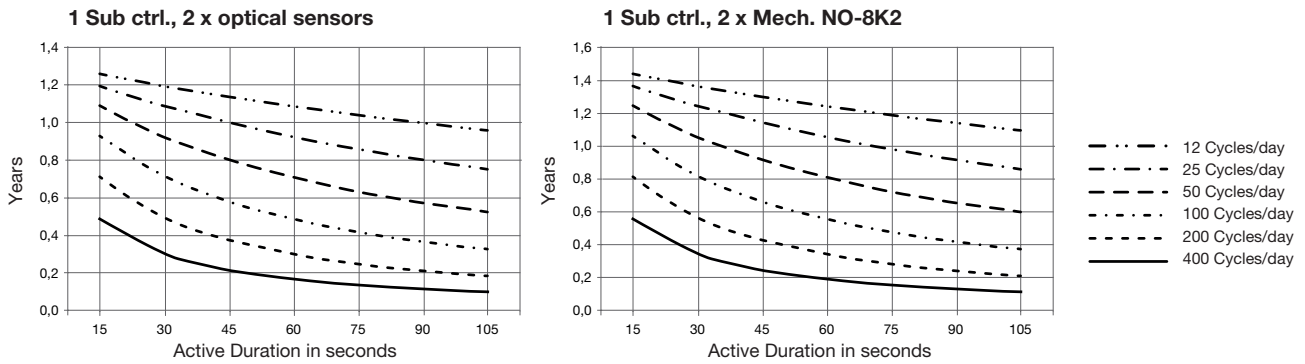


Lifetime of batteries

Normal speed

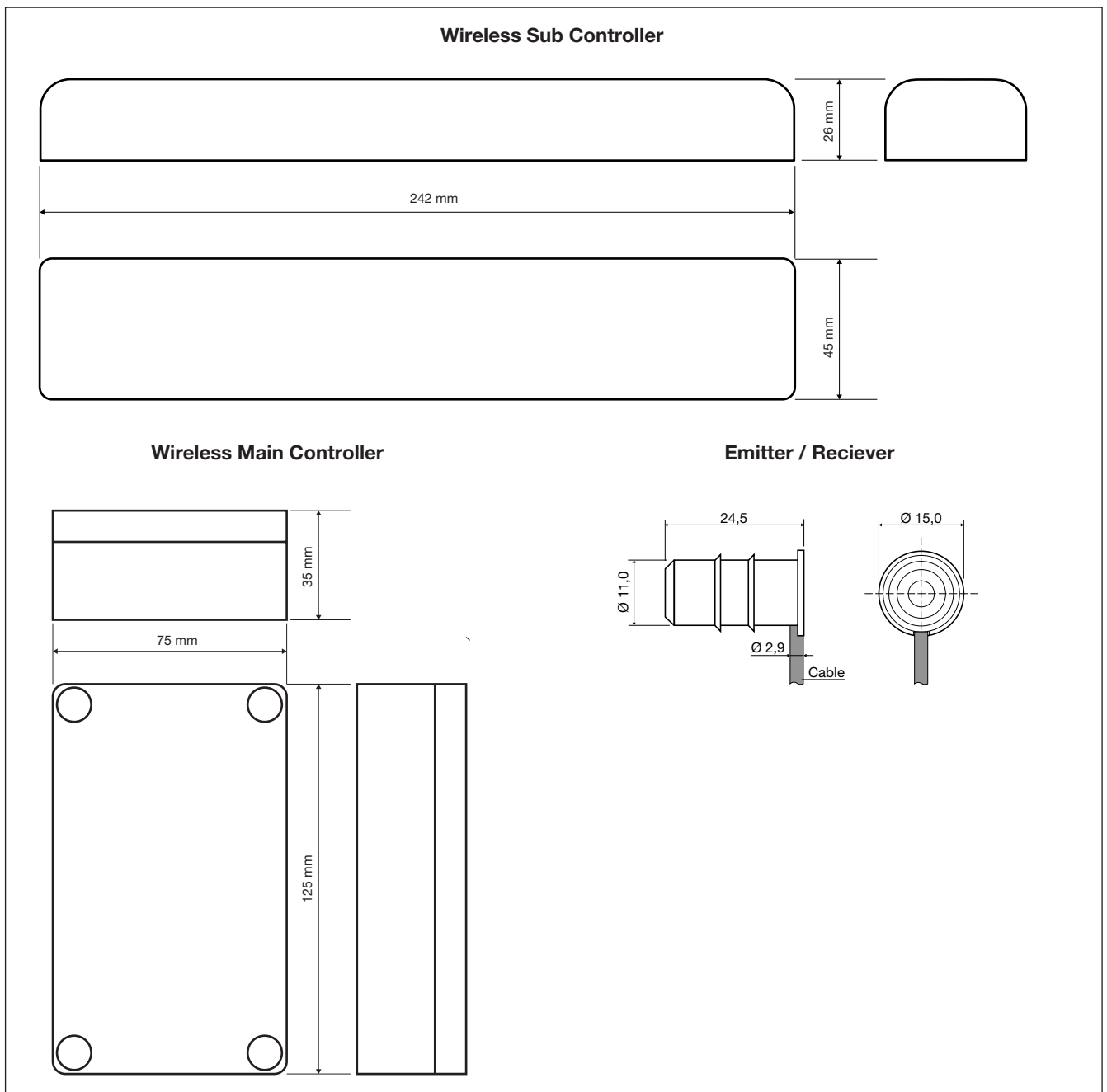


Fast speed



Conditions: 240 working days, ambient temperature 20°C, 85% battery efficiency. "Duration" is gate opening or closing time. One cycle is an opening AND closing cycle.
 4 x ER14505 3.6 VDC size AA, ≥ 2700 mAh Lithium batteries

Dimensions



Delivery Contents Main Controller

- Wireless Main Controller: WSM6GAOOD24 or WSM6GACCD24
- Manual
- 4 x SCREW M4.5X45 MM BOSSARD BN615
- 4 x RAWLPLUG SX8 NYLON
- **Packaging:** Cardboard box

Delivery Contents Receiver

- Receiver: PB11CNT15WR
- **Packaging:** Plastic bag

Delivery Contents Sub Controller

- Wireless Sub Controller: WSS2GA2BAT
- Manual
- 2 x ER14505 3.6 VDC size AA, ≥ 2700 mAh Lithium batteries
- 4 x SCREW M4X10 MM BOSSARD BN1023
- **Packaging:** Cardboard box

Delivery Contents Emitter

- Emitter: PB11CNT15WE
- **Packaging:** Plastic bag

По вопросам продаж и поддержки обращайтесь:

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Ижевск (3412)26-03-58
Иркутск (395)279-98-46
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