

SISTEMA RADIOBAND 2G

• INTRODUCTION

DESCRIPTION

The RadioBand system is designed of Industrial, Commercial and Domestic door and gate applications where a safety edge is used. The system provides a wireless system replacing spiral cables or energy chain systems to provide the safety signal to the door or gate control panel. The receiver monitors the status of transmitters connected to it.

Up to three transmitters per output can be connected to the receiver. There are two outputs on each receiver. The system is compatible with 8K2 monitored safety edges, opto safety edges and volt free safety contacts. Two inputs available in the transmitter.

The system complies with EN 954-1 Category 2.

USE OF THE SYSTEM

This equipment is designed to be installed with a safety edge for door and gate installations. It is not guaranteed for directly activating equipment other than that specified.

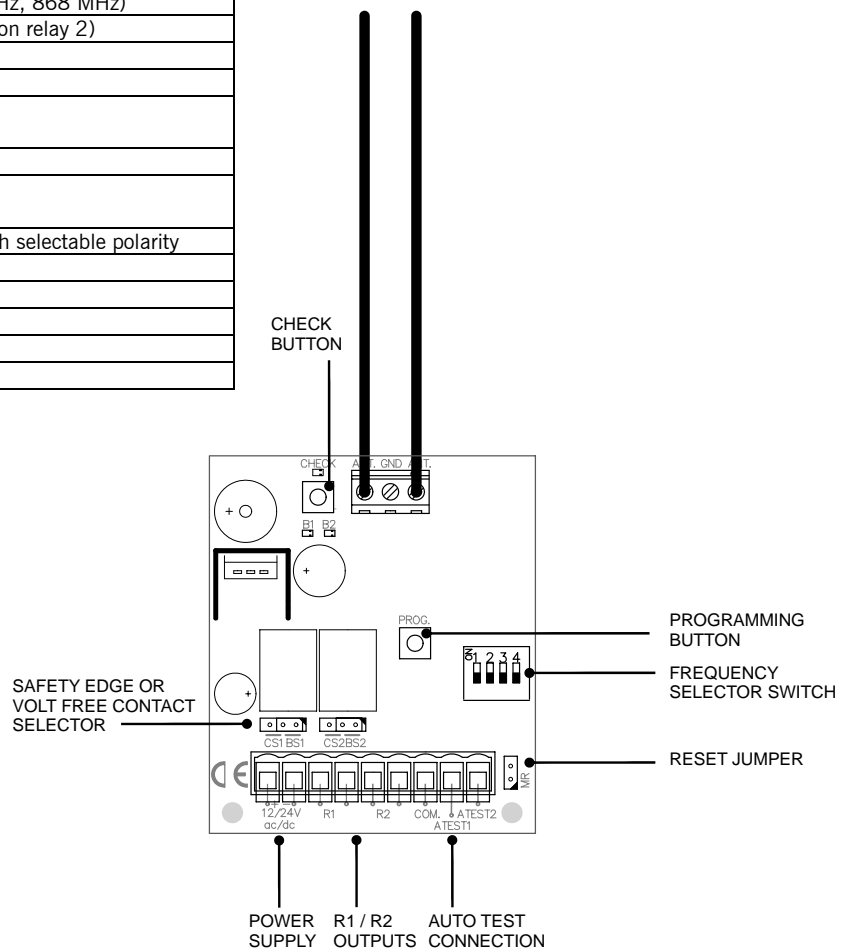
The manufacturer reserves the right to change the specification of the equipment without prior warning.

• RECEIVER RBAND/UM

RECEIVER TECHNICAL CHARACTERISTICS

System non compatible with RADIOBAND 1G.

Frequency	Multifrequency system (433 MHz, 868 MHz)
Memory	6 transmitters (3 on relay 1, 3 on relay 2)
Relay numbers	2 relays
Power supply	12/24V ac/dc
Power supply range	9-35V dc 8-28V ac
Relay contacts	1A
Consumption standby/operating	Max 255mA
Autotest signal input	Two 0/12/24V ac/dc inputs with selectable polarity
Radiated power	< 25mW
Operating temperature	-40°C a +85°C
Seal	IP54 (with IP65 cable seals)
Box size	82 x 190 x 40mm
Range (guaranteed)	10 metres



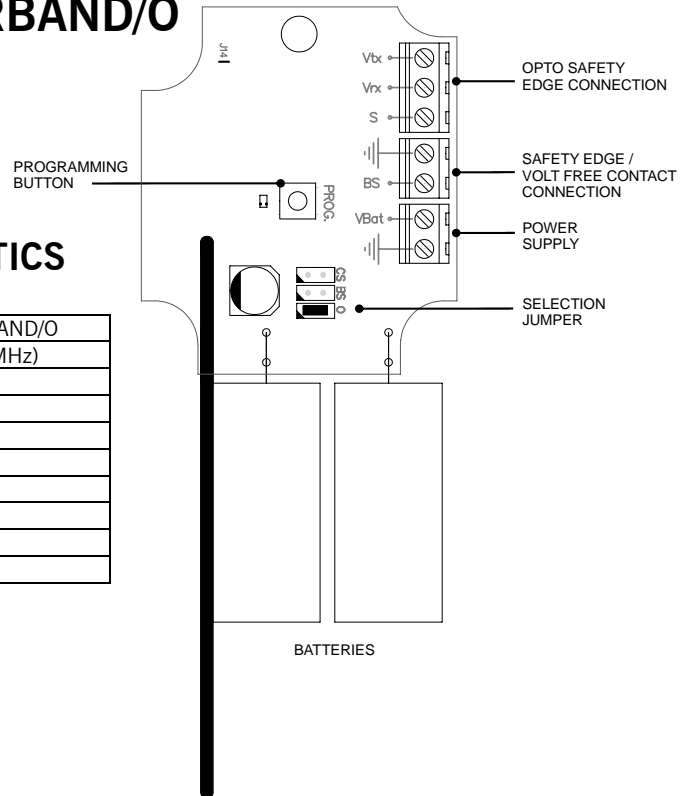
SISTEMA RADIOBAND 2G

• TRANSMITTER RBAND/B AND RBAND/O

TRANSMITTER TECHNICAL CHARACTERISTICS

System non compatible with RADIOBAND 1G.

	RBAND/B	RBAND/O
Frequency	Multifrequency system (433 MHz, 868 MHz)	
Power supply	3V DC (2 x 1.5V LR6 AA)	
Operating consumption	10mA	
Radiated power	< 25mW	
Operating temperature	-20°C - +85°C	
Watertightness	IP65	
Size	151x60x23mm	
Range (guaranteed)	10 metres	
Battery life (aprox)	2 years	



• INSTALLATION PROCEDURE AND BASIC WIRING

MECHANICAL INSTALLATION

TRANSMITTER

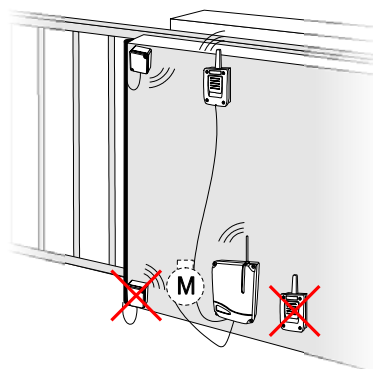
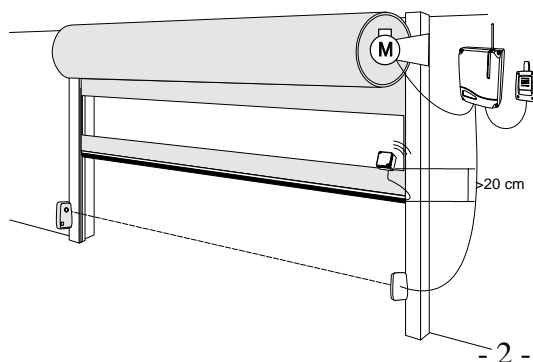
Fix the back of the box to the door. Install the transmitter following the technical manual and avoid placing metallic surfaces between the receiver and the transmitter. Pass the cables through the bottom of the transmitter. Connect the safety edge following the electrical connections clause and ensure that the safety edge keeps totally waterproof. Fix the front of the transmitter to the back with the screws supplied for the purpose.

RECEIVER

Fix the back of the box to the wall, using the wall plugs and screws supplied. Install the receiver, close to the door and avoid metal surfaces between the receiver and the transmitter. Pass the cables through the bottom of the receiver. Connect the power cables to the terminals of the printed circuit, following the indications of the connections diagram. Store transmitters. Fix the front of the receiver to the back with the screws supplied for the purpose.

INSTALLATION ADVISES

Use the cable entry at the bottom of the receiver for the power supply and control connections. The transmitter and receiver antenna must be parallel to each other for optimum signal reception. Fit the batteries ensuring the correct polarity. After programming the transmitter re-fit the front cover of the transmitter and the receiver.



SISTEMA RADIOBAND 2G

• ELECTRICAL CONNECTIONS

RECEIVER

OPTIONS SELECTOR

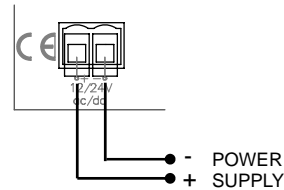
Option No	ON	OFF
1 – Channel selection	See table Multifrequency system	See table Multifrequency system
2 – Channel selection	See table Multifrequency system	See table Multifrequency system
3 – Autotest polarity	Negative polarity	Positive polarity
4 – Relay 2 function	Low battery indicator	Normal function

POWER SUPPLY

Connect a 12/24V ac/dc power supply to the receiver as shown.

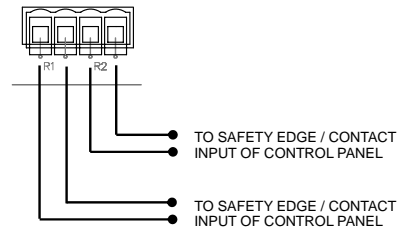
Ensure that the batteries are fitted to the transmitter.

Note: Ensure the polarity of the power supply for the receiver is correct.



CONTROL OUTPUTS

There are two outputs R1 and R2 that can be used independently, and connected to the safety edge inputs of the door or gate control panel.



The outputs can be configured to act an 8k2 or as a N/C Contact.

- The relay jumper in position **BS** the output is 8K2.
- The relay jumper in position **CS** the output is N/C Contact.

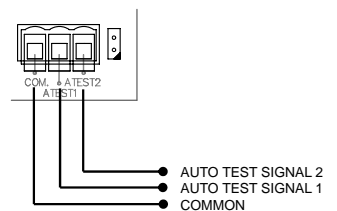


AUTOTEST SIGNAL

Whilst the RadioBand receiver monitors the RadioBand transmitter every 20 seconds, the system must be tested at the exact time when the door/gate receives a signal to move. This test is done with the auto test signal.

The auto test signal ensures that all of the parts of the safety edge system are ok before the door/gate can operate.

The auto test signal is sent from the door/gate control panel and activates the output from the RadioBand receiver. When the door/gate control panel receives this output it allows the door/gate to start.



The RadioBand receiver will accept two types of auto test signal. The function selector switch must be put in the correct position for the auto test signal.

1- Positive autotest: A 0V signal which switches to 12/24V ac/dc for the auto test.



2- Negative autotest: A 12/24V ac/dc signal which switches to 0V for the auto test. Both autotest inputs must be connected although one of them is not used.



The auto-test signal from the control panel must only remain activated for up to 3 seconds.

SISTEMA RADIOBAND 2G

TRANSMITTER

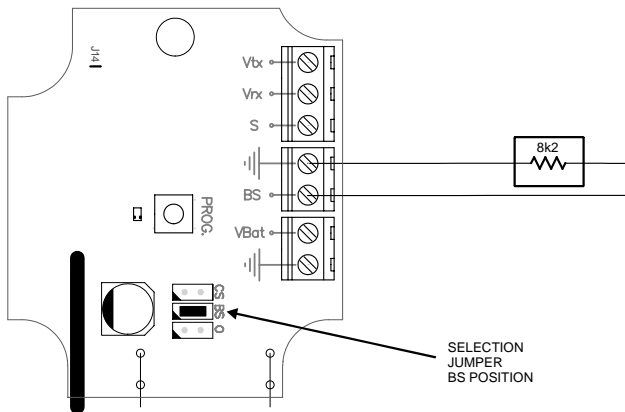
SELECTOR JUMPERS

Allow selecting the type of the security element which is connected.

Jumper selector	Function
CS	Voltage free safety contact
BS	8k2 monitored safety edge
O	Opto safety edge

8k2 MONITORED SAFETY EDGE

Ensure the safety edge selection jumper is fitted in the **BS** position.



OPTO SAFETY EDGES (RBAND/O)

Ensure the safety edge selection jumper is fitted in the **O** position.

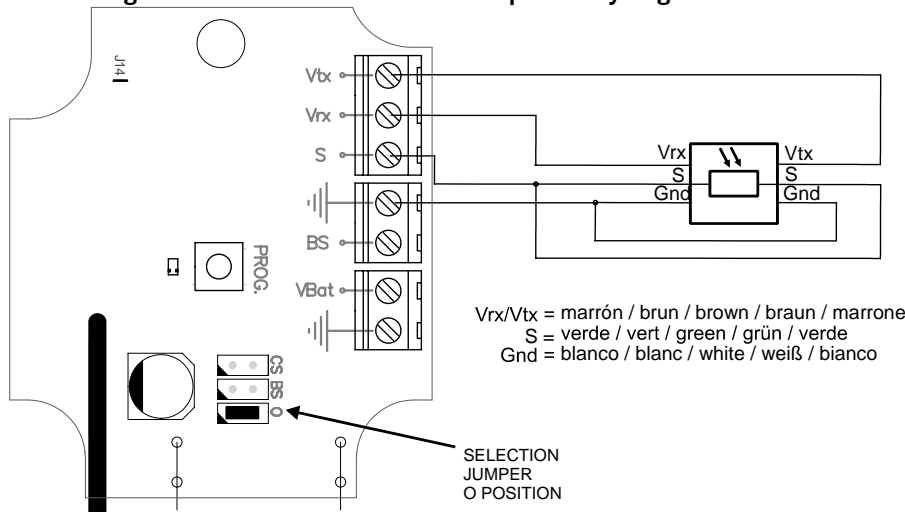
The system is only compatible with low power opto transmitter/receiver (3Vdc / 3mA).

The opto safety edge remains in standby mode (non functioning) until it receives an activation signal from the receiver. The activation signal is sent during the auto-test and it enables the opto safety edge for 60 seconds (by default) to allow the full travel of the door/gate.

The activation time of the opto safety edge can be modified. Before doing this operation it is necessary to know the door travel time.

1. Press the receiver **PROG** and **CHECK** buttons simultaneously until the three **CHECK, B1** and **B2** leds go light on.
2. Press the **PROG** button to begin the memorisation of the time the opto safety edge will be activated. You will hear a beep each second, to count the time easier.
3. Press the **PROG** button another time to memorise the total time the opto safety edge will be activated.

The auto-test signal is needed to work with the opto safety edge.

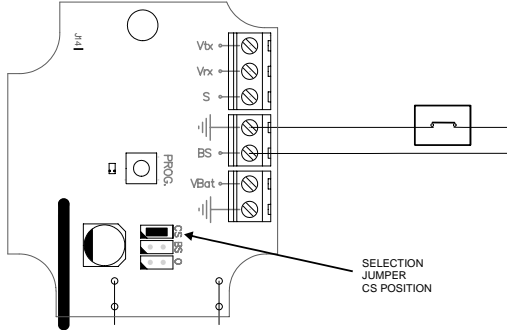


SISTEMA RADIOBAND 2G

VOLTAGE FREE SAFETY CONTACT

Ensure the safety edge selection jumper is fitted in the **CS** position. The voltage free safety contact connected must be normally closed.

Note: This application does not comply with the motorised garage door safety use standard EN 12453, as the connection between the voltage free safety contact and the transmitter is not guaranteed.

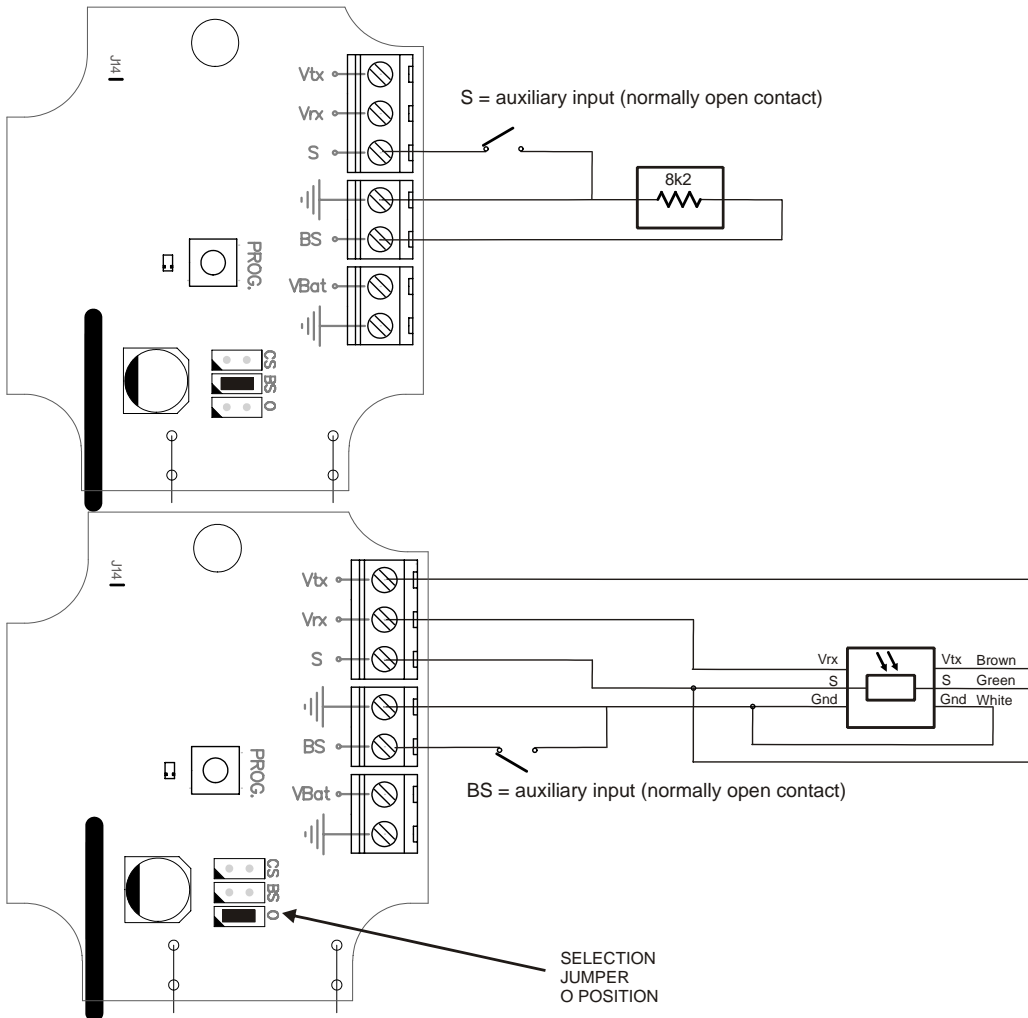


CONNECTING AN AUXILIARY INPUT

When programming in the receiver the Mode 4 (See PROGRAMMATION clause), an auxiliary input turns available on the transmitter. This auxiliary input is a normally open contact and it will be programmed always in the relay 2 of the receiver.

In case of using an 8k2 monitored safety edge or a voltage free safety contact, this auxiliary input will be on the **S** terminal.

In case of using an opto safety edge, this auxiliary input will be on the **BS** terminal.



SISTEMA RADIOBAND 2G

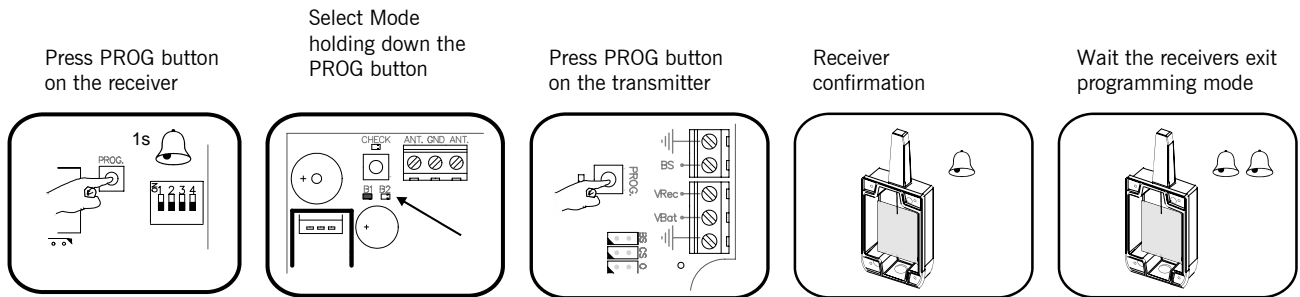
● PROGRAMMATION

Each safety edge transmitter must be learnt into the appropriate channel of the safety edge receiver.

Mode	Configuration of transmitter programming in the receiver.	Led R1	Led R2
1	By pressing any transmitter channel, relay 1 on the receiver will be activated	ON	OFF
2	By pressing any transmitter channel, relay 2 on the receiver will be activated	OFF	ON
3	By pressing any transmitter channel, the two relays will be activated at the same time	ON	ON
4	The relays are activated 1st relay by channel 1 (operate as normal operation for connecting a safety element) and 2nd relay by channel 2 (operates as a normally open contact for connecting an auxiliary input)	Flashing	Flashing

Notes:

- Modes 1, 2 and 3: Up to 6 transmitters (3 on output **R1** and 3 on output **R2**) can be connected to the receiver in modes 1, 2 and 3.
- Mode 4: In this mode only 3 transmitters can be connected to the receiver. The second relay cannot make the function of indicating low battery.
- Each transmitter can be configured independently on the receiver.
- A Transmitter should only be connected to one receiver.



If 10 seconds pass without programming a transmitter, the receiver will exit the programming mode. If when programming a transmitter the receiver's memory is full then it will emit 7 beeps of 0.5 sec and exit the programming mode.

MULTIFREQUENCY CHANNEL

For a better communication between the devices of the system and to avoid possible interferences, the system incorporates 4 communication channels selectable by the users. Moreover, it incorporates a security channel that will be used for guarantee the functioning in front of possible communications failures on the selected channel.

Channels	Frequency bands (MHz)	Switch 1	Switch 2
Channel 1 (*)	868,700 – 869,200	OFF	OFF
Channel 2	868,000 – 868,600	ON	OFF
Channel 3	869,400 – 890,650	OFF	ON
Channel 4	869,700 – 870,000	ON	ON
Security channel	433,050 – 434,790	---	---

(*) Default recommended channel

In front of low levels of signal (see function **CHECK**) or interferences on the selected channel, it could be possible to select another communication channel, being necessary to program again all the transmitters.

SISTEMA RADIOBAND 2G

● MAINTENANCE

SYSTEM CHECK

This function has to be used to check the operation and range of all the devices once the installation has been carried out.

Press the receiver's **CHECK** button for at least 1 second to enter check mode. The indicator light will come on and four beeps will be heard.

Perform a complete door opening and closing manoeuvre. During the system check a beep will be heard every 1,5 seconds.

CORRECT OPERATION OF THE SYSTEM

If no other acoustic signal is heard on completing the manoeuvre, the system is operating correctly. Either press the **CHECK** button again or wait 5 minutes and the receiver will exit checking automatically, indicating with two beeps that the check has been correct. The check indicator light will go out.

DETECTION OF TRANSMISSION FAILURE

If the communication with a transmitter fails during checking, or the communication is deficient (for instance, too many communication retries or poor coverage), the receiver emits three consecutive beeps, indicating that an error has occurred. Halt the door manoeuvre and press the safety edges installed to detect what has failed.

- If a single beep is heard on pressing a safety edge, this means that the safety edge is correct.
- If three consecutive beeps are heard on pressing the safety edge, this means that the safety edge has failed. In this event, it is recommended changing the orientation of the transmitting-receiving aerials or installing an AED-868 or FLAT-868 outdoor aerial to ensure the desired range.

On exiting check mode, seven consecutive beeps will be heard and the indicator light will flash continuously. Perform another system check until the result is correct.

Signal coverage

After pressing one of the installed safety edges, continuous flashes, ranging from 1 to 5, indicate the signal coverage for this safety edge at the time it was pressed.

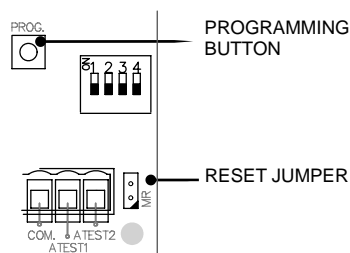
Number of check LED flashes	Coverage	Result of check
1	Very weak	Safety edge failure
2	Weak	OK
3	Normal	OK
4	Good	OK
5	Very good	OK

TOTAL RESET

In programming mode, keep the programming **PROG** button pressed down and make a bridge with the "MR" reset jumper for 3s. The receiver will emit 10 warning sound signals and then more at a faster frequency, indicating that the operation has been carried out. The receiver will stay in programming mode.

Wait for the receiver to exit the programming mode.

The receiver will exit the programming mode emitting two 1 sec beeps. If 10 seconds pass without programming a transmitter, the receiver will exit the programming mode.



SISTEMA RADIOBAND 2G

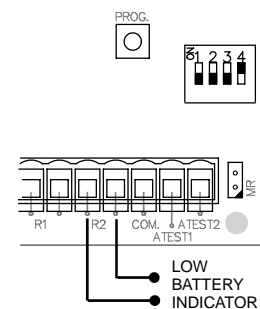
TRANSMITTER BATTERY LOW INDICATOR

In normal conditions the battery should operate for two years.

If the battery of a transmitter programmed into the receiver becomes low, the receiver will beep 4 times every 20 seconds. If there is more than one transmitter programmed, each safety edge should be activated to identify, hearing the 4 beeps, which transmitter has a low battery. If the battery power is low, replace it immediately.

When the second relay of the receiver is not used for a safety edge, it can be used as a battery low indicator. It will activate the output relay when a transmitter with low battery is detected. In this case the receiver will not indicate low battery with the beeps. Put dipswitch 4 on the function selector to **ON**.

Note: Only available in mode 1.



REPLACING THE TRANSMITTER BATTERY

Remove the box cover. Replace the two used batteries with new ones, taking into account the polarity indicated by the connector. **Check that the new batteries support the same temperature range as those they are replacing.**

REPLACING A TRANSMITTER

If a transmitter becomes damaged the whole system must be re-set and replacement and non-damaged transmitters must then be re-programmed into the receiver.

IMPORTANT ANNEX

Disconnect the power supply whenever you proceed to the installation or repair of the control panel.

In accordance with the European low voltage directive, you are informed of the following requirements:

- For permanently connected equipment, an easily accessible connection device must be incorporated into the cabling.
- This system must only be installed by a qualified person that has experience with automatic doors/gates and knowledge of the relevant EU standards.
- The instructions for use of this equipment must always remain in the possession of the user.
- Terminals with a maximum section of 3.8mm² must be used to connect the cables.
- The frequency of the RadioBand system does not interfere in any way with the 868 MHz remote control systems.