



RADIOBAND3G

TÜV CERTIFICATE

Tested in accordance with:

EN ISO 13849-1:2008 Cat.2 PLd

EN 12978:2003+A1:2009, Clause 4.1 b)

Applications manual for the third-generation
RadioBand system

UNIVERSAL communication
system via radio for safety
edges, **compatible with all
control panels**



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**UNIVERSAL generation
for all control panels!**

**For any resistive safety
edges!**

**For any mechanical
safety edges!**

**For any low-power
optical safety edges!**

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System description

The RadioBand 3G system is compatible with all control panels.

This third-generation system meets the needs of today's market as a result of the following improvements:

2 operating modes, ensuring that, irrespective of the control panel and the optical sensors connected, the system will function with one mode or the other.

Smart adjustment of communication power between the receiver and the transmitter, providing a greater range than previous generations.

Automatic management of the communication channel between the receiver and the transmitter. (Up to 4 self-adjusting channels).

RB3 TGLA868 reference can be powered with alkaline batteries

Possibility of having the optical safety edge permanently activated without the need for a safety edge activation signal, in accordance with EN 13241-1.

With the receiver's selector switch 1, it is possible to choose the timing of transmitting the state of the transmitter to the receiver.

Transmitting time	Selector switch 1
Every 5 seconds	ON
Every 20 seconds	OFF

The RB3 T868 and RB3 TGL868 transmitters feature 2 independent inputs to enable the connection of 2 safety edges to the same transmitter. Depending on the position of the three selector switches, one or the other safety edge can be connected.

IN1	Selector switch 1	Selector switch 2
OSE-S 7502 optical safety edge	OFF	OFF
Standard low-power optical safety edge	ON	OFF
Resistive safety edge	OFF	ON
Contact safety edge	ON	ON

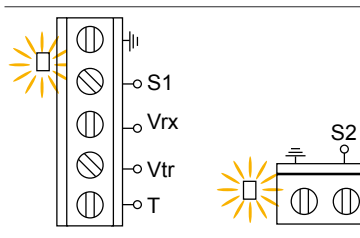
IN2	Selector switch 3
Resistive safety edge	OFF
Contact safety edge	ON



System description

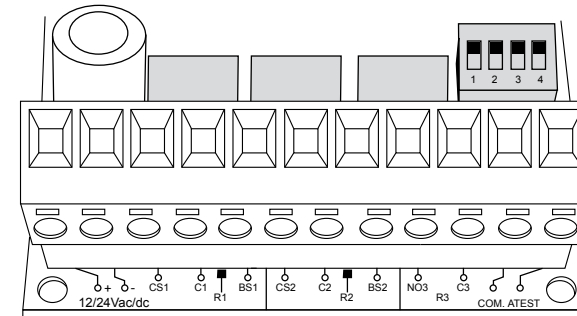
LED indicators show the state of the inputs for 5 minutes after installing the batteries. After 5 minutes, they turn off and only show the state of the inputs again:

- When the programming button is pressed.
- In CHECK mode.
- When the power is reset (i.e. the batteries are removed and then put back).

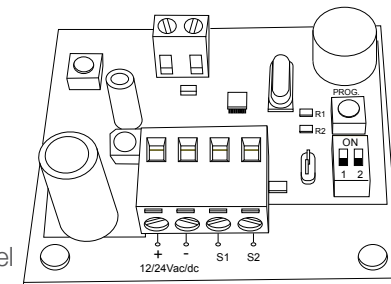


LED input state	
OFF	Correctly connected and properly functioning safety edge.
ON	Safety edge with pressure applied.
Flashing	Unprogrammed input or optical safety edge not connected.

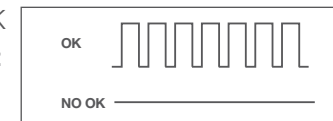
The **RB3 R868** receiver has up to three relay outputs, the third of which is used as a low battery or alarm signal.



The **RB3 OSE868** receiver has two outputs for the panels with a dedicated optical safety edge input.



The signal transmitted to the panel is in the form of a pulse train when the optical safety edge is OK as shown in the following diagram:



Regulatory requirements

The following products:

RB3 R868, RB3 OSE868, RB3 T868, RB3 TGL868

all comply with the provisions of **Article 3 of Radio and Telecommunications Terminal Equipment Directive 1999/5/EC**, and the basic requirements of Machinery Directive 2006/42/EC, Electromagnetic Compatibility **Directiva de máquinas 2006/42/CE**, así como con los de la **Directive 2004/108/EC** and **Low Voltage Directive 2006/95/EC**, provided that they are used according to instructions.

Some of the requirements of the harmonised standards are as follows:

- For permanently connected equipment, an easily accessible on/off switch must be incorporated into the wiring system.
- On installation, the equipment must be firmly fixed to the structure of the building.
- The equipment must only be handled by a specialist installer or a suitably qualified technician.
- The equipment's instructions for use must remain in the possession of the user.
- To connect the power cables, only terminals with a maximum cross-section of 3.8 mm² must be used.

The RadioBand system's main operating frequency does not interfere in any way with 868 MHz remote control systems.

Continuous interference at 868.9 MHz could however cause the system to go into safety mode or create an automatic change in the operating frequency.

Always connect the door structure and metal components to earth.

Ensure that the equipment and the signal do not share the same power supply.

The RadioBand system complies with **EN ISO 13849-1:2008, Category 2, PLc**.



The system

The third-generation RadioBand system is not compatible with previous generation RadioBand systems.

This system is the most advanced yet, as a result of the improvements that have been added with respect to previous generations.

2.1 Transmitters



RB3 T868

RB3 TGL868

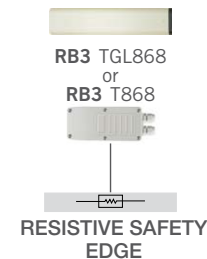
- 3G transmitter for optical, resistive and mechanical safety edges.
- Operating frequency: 868 MHz
- Multi-frequency system: 4 self-adjusting channels at 868 MHz
- It controls up to 2 safety edges in the same transmitter.
- No need for an activation signal for the optical safety edge, as it is permanently active.
- Approximate battery life of 2 years.
- Nominal range: 50m
- Power supply: two 3.6VDC ER14500 Li-SOCL batteries.
- Operating temperature: -20°C to +55°C.

RBAND3T

- Protection: IP65.
- Box dimensions: 151 x 60 x 23 mm.

RBAND3T GL

- Protection: IP42.
- Box dimensions: 194.5 x 40 x 20 mm.



The system

2.2 Receivers



RB3 R868

- Operating frequency: 868MHz.
- Memory: 6 transmitters (3 in relay 1, 3 in relay 2).
- Number of relays: 3.
- Power supply: 12/24VAC/DC.
- Power range: 12/24VAC/DC \pm 10%
- Relay contacts: 1A.
- Consumption: 255mA max.
- Autotest input: One input 0/12/24VAC/DC with selectable polarity.
- Radiated power: <25 mW.
- Operating temperature: -40°C to +85°C.
- Protection: IP54 (IP65 with gland seals).
- Box dimensions: 82 x 190 x 40 mm.
- Range: 100 m.



RB3 OSE868

- Operating frequency: 868 MHz
- Memory: 6 transmitters (3 in relay 1, 3 in relay 2).
- Number of outputs: 2 OSE outputs.
- Power supply: 12/24VAC/DC.
- Power range: 12/24VAC/DC \pm 10%.
- Consumption: 255mA max.
- Radiated power: <25 mW.
- Operating temperature: -40°C to +85°C.
- Protection: IP54 (IP65 with gland seals).
- Box dimensions: 82 x 190 x 40 mm.
- Range: 100 m.



RSEC3

- 3G receiver for VERSUS panels, for optical, resistive and mechanical safety edges.
- Operating consumption: Max 30mA.
- Power radiated <25mW.
- Power supply: 12Vdc from the control panel.



The system

2.3 OSE-S 7502 optical safety edge

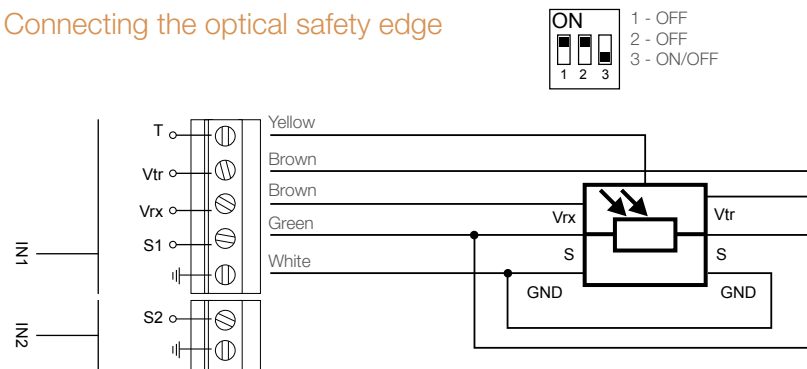
Optical safety edge that remains permanently active.

Due to the ability to control the transmission of the light beam between the optical sensor's transmitter and receiver, power consumption can be reduced by up to 20 times and, as a result, a signal is not necessary to turn the safety edge on and off.

An additional cable has been added to the optical sensors to enable control of the light beam transmission.



Connecting the optical safety edge



Operating modes

Selector switch 2 on the **RB3** R868 is used to select the **Radio-Band** 3G system's operating mode. If the selector switch is in the **ON**, position, the system will operate in **Modo ON**. If it is in the **OFF**, position, the system will operate in **WORK mode**.

Modo	Selector switch 2
ON	ON
WORK	OFF

All of the **RB3** T868 units connected to the system must use the same operating mode. To change the mode, it is necessary to carry out a complete reset of the receiver's **RB3** T868 units and change the selector switch in the programming state before programming them again.

To comply with the regulations, it is necessary to check the state of the entire system. In the two modes, the ATEST signal is used to check the state of the receiver relay and, every 7 to 30 seconds (depending on the state of the receiver's selector switch 1), the state of the transmitter.

The new generation RadioBand complies with these regulations.

ON mode

The OSE-S 7502's special optical sensor mode.

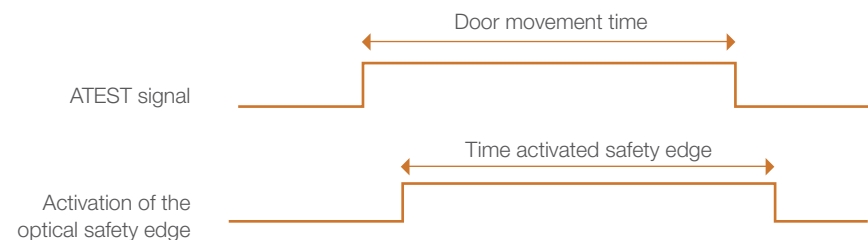
In this mode, only the **RB3** R868 is tested with the ATEST signal. The system needs only 150 ms to be tested. The different **RB3** T868 units are verified at regular intervals, as the safety sensor is permanently active.

WORK mode

Mode for the two types of safety edge: the low consumption optical safety edge and the OSE-S 7502 special optical safety edge.

In this operating mode, the ATEST signal tests output, changing the state of the safety edge's optical sensors. This test is very fast and only needs 300 ms, twice that required for ON mode, because the optical sensors must be activated for testing. Also, while the ATEST signal is activated, the optical sensors are active and the door can move. When the ATEST signal is deactivated, the optical sensors turn off and the movement of the door is blocked.

In this mode, battery life is maximised.

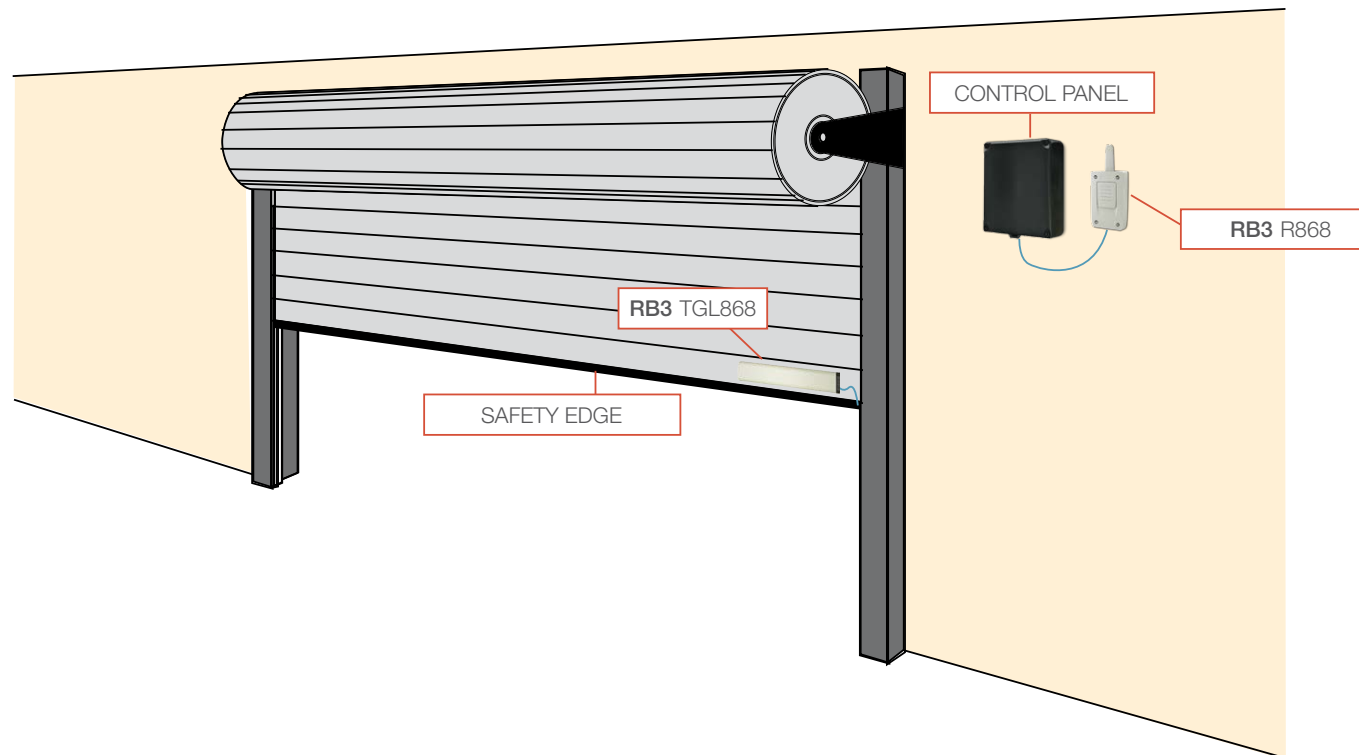


The polarity of the ATEST signal can be changed with a selector switch on the receiver. This signal is produced when the polarity is negative (selector switch in the ON position).



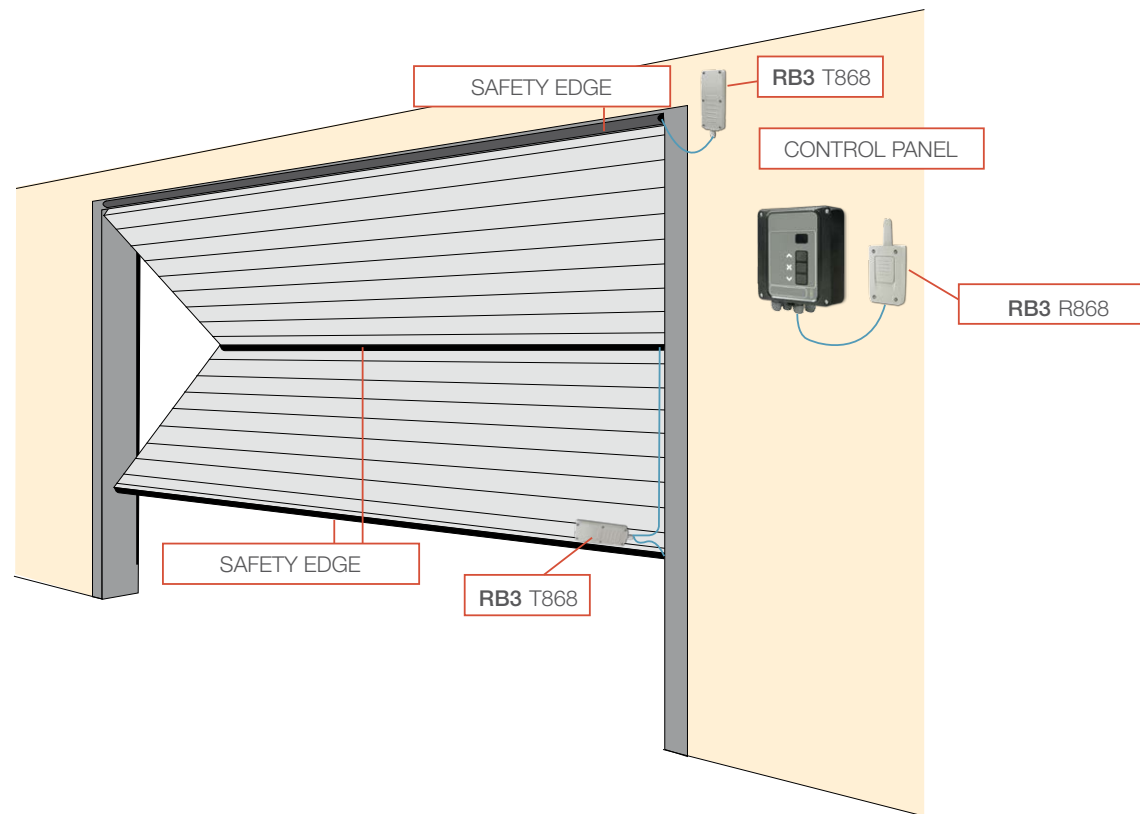
RadioBand 3G system installation recommendations

Roller shutter with control panel, **RB3 R868** and **RB3 TGL868** installed.



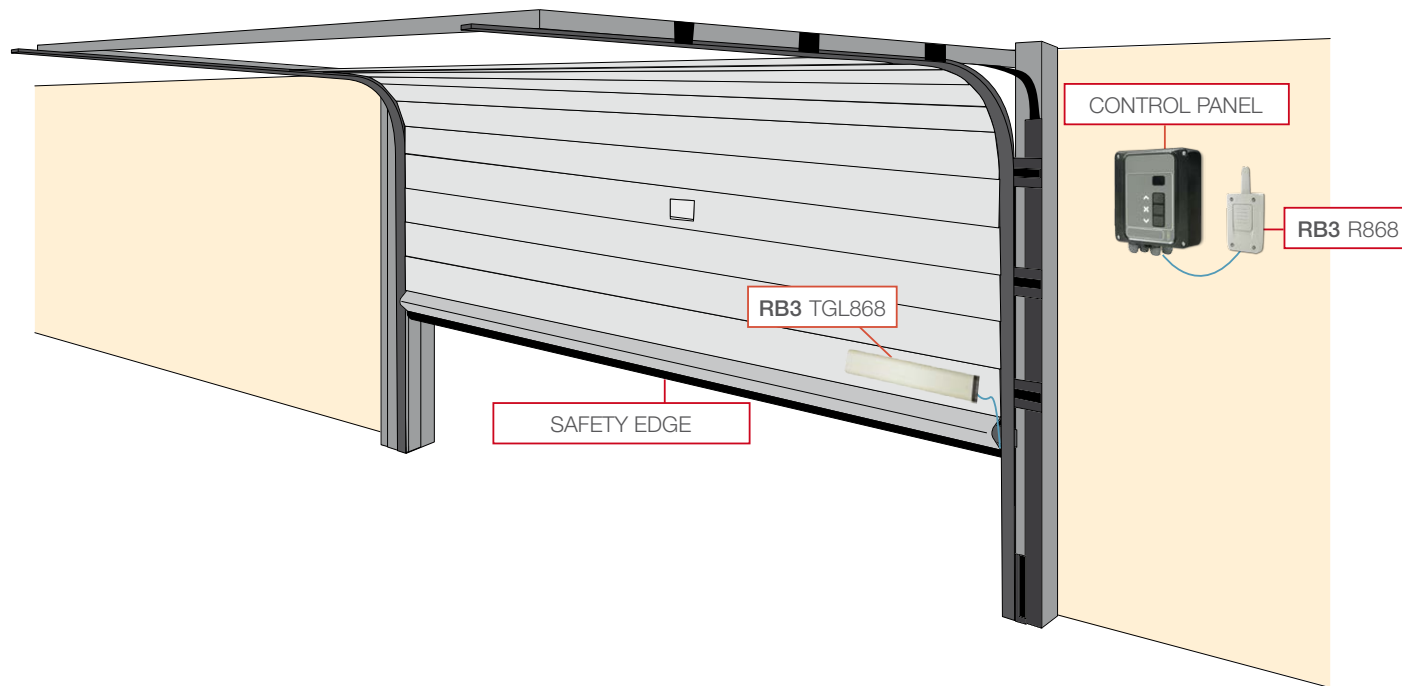
RadioBand 3G system installation recommendations

Bi-fold door with control panel, **RB3 R868** and **RB3 T868** installed



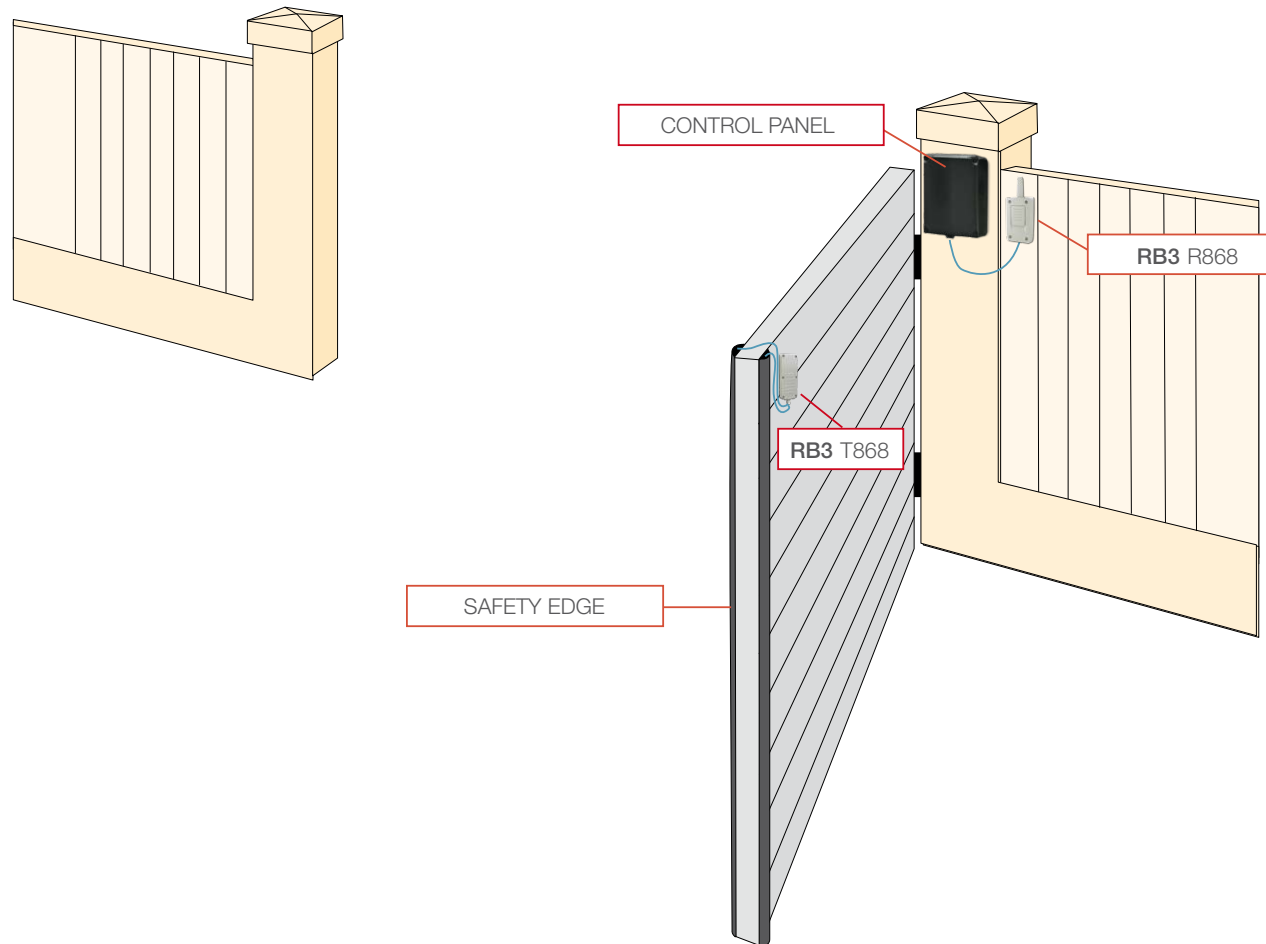
RadioBand 3G system installation recommendations

Sectional door with control panel, **RB3 R868** and **RB3 TGL868** installed.



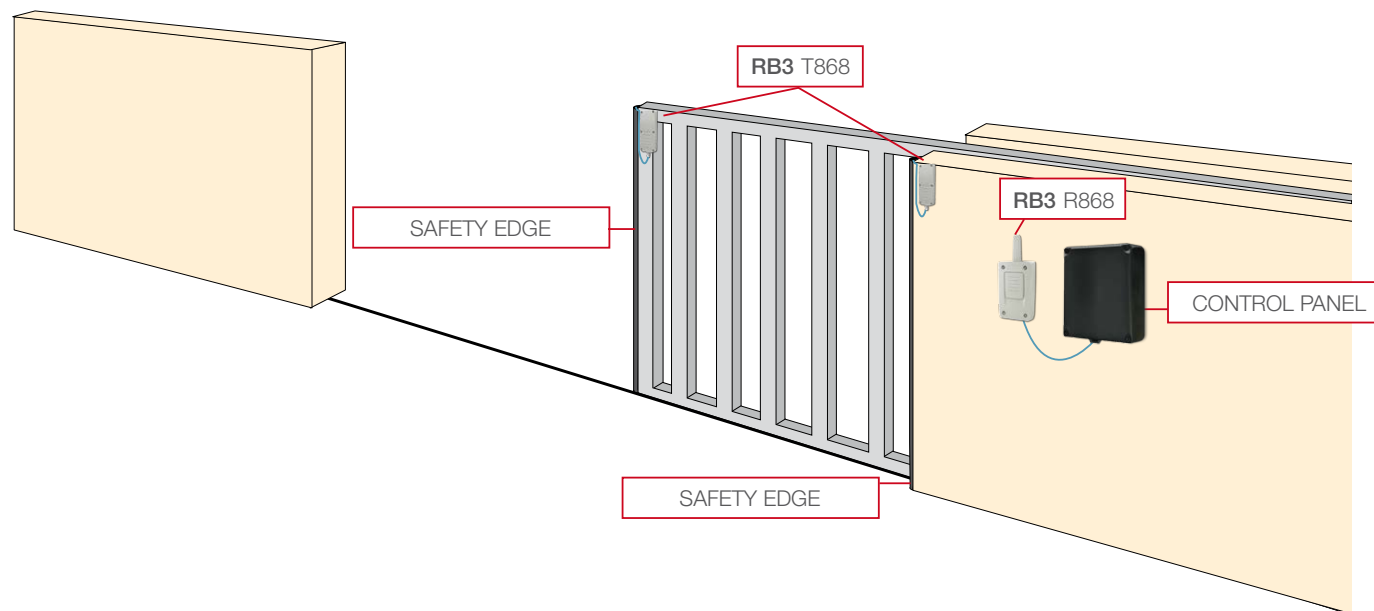
RadioBand 3G system installation recommendations

One-leaf swing gate with control panel, **RB3 R868** and **RB3 T868** installed



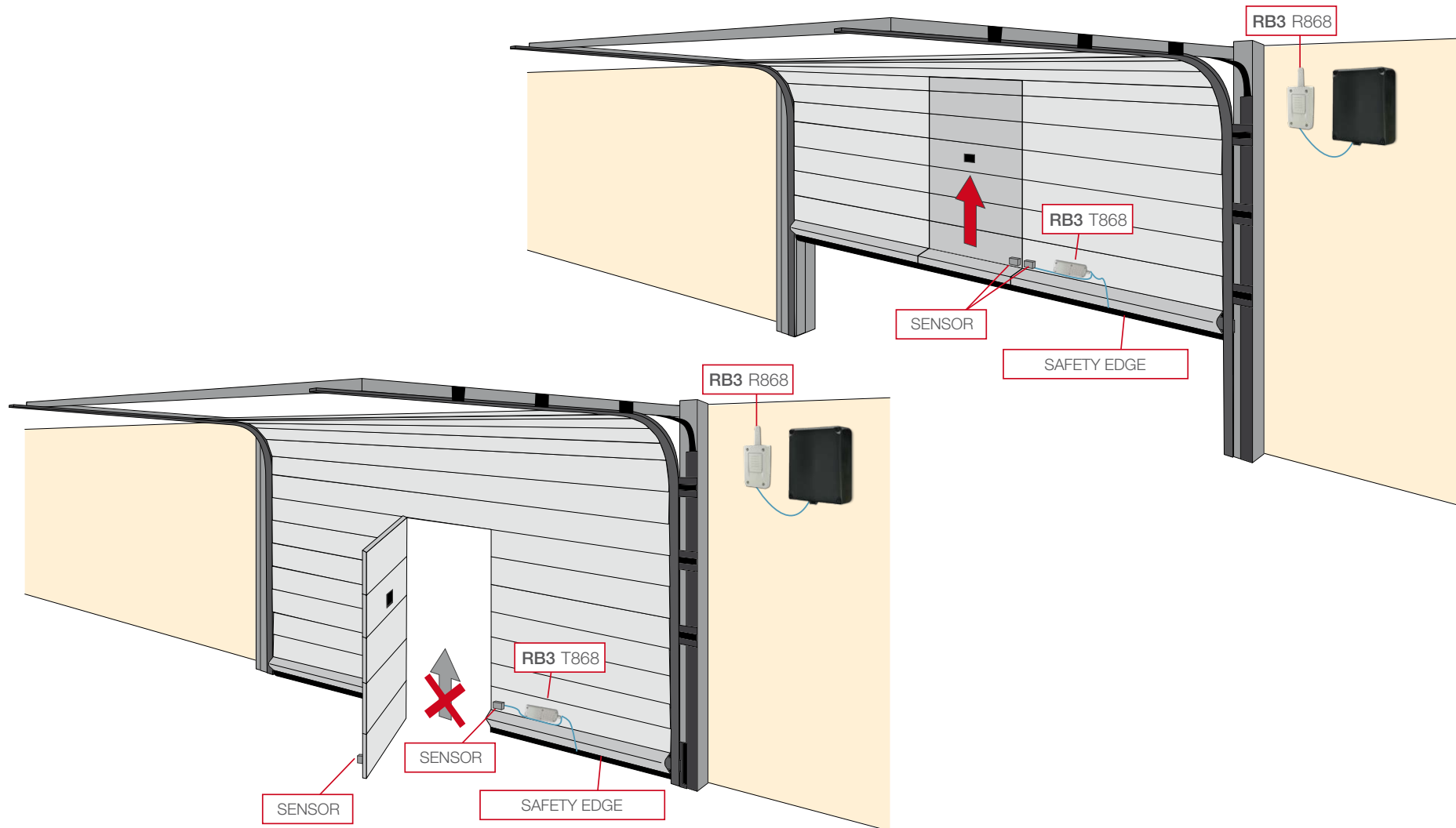
RadioBand 3G system installation recommendations

Sliding gate with control panel and card connector, plug-in **RB3 R868** and **RB3 T868** installed.



RadioBand 3G system installation recommendations

Installation in a pedestrian door located in a garage door. The operation will be blocked when the pedestrian door is open.





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