INSTALLATION MANUAL

R-GWR SENSORS

R-GWR-S-1 / R-GWR-IP-1 / R-RWG-IP-2

PRELIMINARY WARNINGS

The word **WARNING** preceded by the symbol ⚠ indicates conditions or actions that put the user's safety at risk.
The word **ATTENTION** preceded by the symbol ⚠ indicates conditions or actions that might damage the instrument or the connected equipment. The warranty shall become null and void in the event of improper use or tampering with the module or devices supplied by the manufacturer as necessary for its correct operation, and if the instructions contained in this manual are not followed.

	**WARNING**: The full content of this manual must be read before any operation. The module must only be used by qualified electricians. Specific documentation is available via QR-CODE shown on page 1.
	The module must be repaired and damaged parts replaced by the Manufacturer. The product is sensitive to electrostatic discharges. Take appropriate measures during any operation.
	Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or its packaging shows the product must be surrendered to a collection centre authorized to recycle electrical and electronic waste.

DOCUMENTATION
R-GWR-S-1

DOCUMENTATION
R-GWR-IP1/2

CE SENECA

AZIENDA CON SISTEMA DI GESTIONE PER LA QUALITÀ CERTIFICATO
ISO 9001:2015

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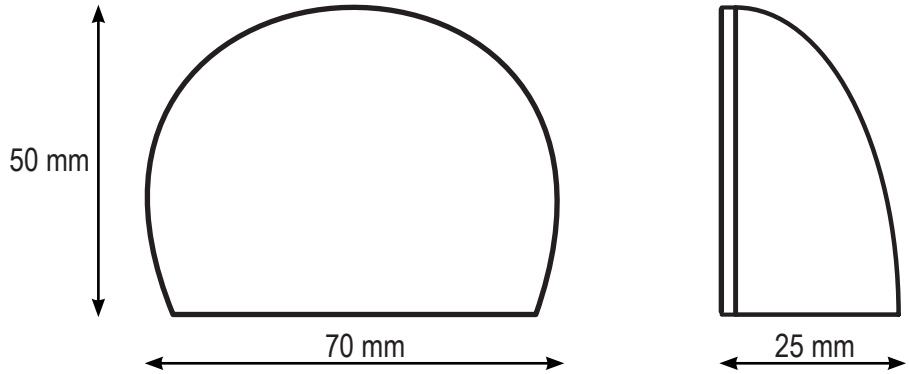
CONTACT INFORMATION

Technical support	support@seneca.it	Product information	sales@seneca.it

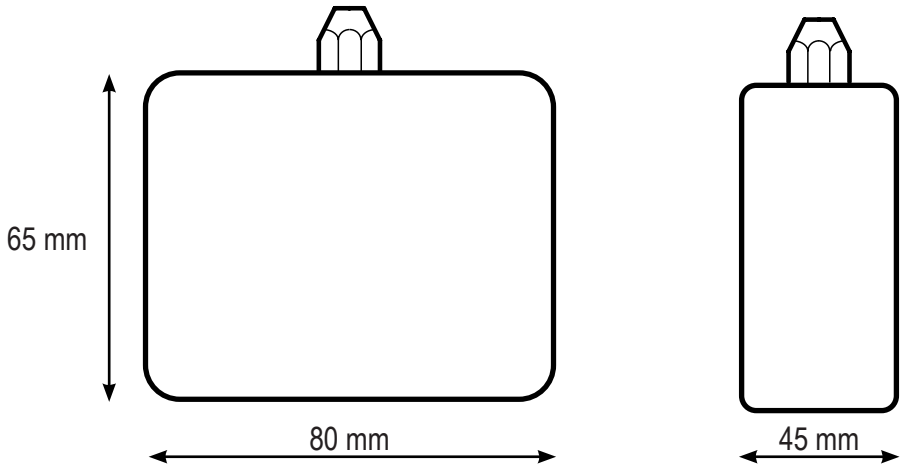
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MODULE LAYOUT



Dimensions (LxHxD)	70 x 50 x 25	**Weight**	45 g	**Case**	Self-extinguishing UL94-V0 PC / ABS material



Dimensions (LxHxD)	80 x 65 x 45	**Weight**	150 g	**Case**	Self-extinguishing UL94-V0 PC / ABS material

LED MEANING

LED	STATUS	LED meaning
Tx (Red)	Flashing	Transmission of radio packets to the R-GWR gateway
Rx (Green)	Flashing	Reception of radio packets from the R-GWR gateway

N.B: THE LEDS, IN BOTH SENSORS, ARE PLACED INSIDE THE BOX. THEY ARE NOT VISIBLE FROM THE OUTSIDE.

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TECHNICAL SPECIFICATIONS

CERTIFICATIONS	CE https://www.seneca.it/products/r-gwr/doc/CE_declaration
POWER SUPPLY (R-GWR-S-1 / R-GWR-IP-1)	3V lithium battery; type: CR2: 900mAh (R-GWR-S-1 home automation sensor) CR123A: 1,650mAh (R-GWR-IP-1 industrial sensor) To check the battery life, see user manual.
POWER SUPPLY (ONLY R-GWR-IP-2)	Power supply: Rated voltage: 3.6V; Rated current: 4.4Ah Temperature range: from -55°C to +85°C Assembly: using EHR2 2-pole male connector To check the battery life, see user manual.
CONNECTIONS	2-way removable screw terminals, 3.5mm pitch (*) Anti-flood probe connector (only for R-GWR-S-1 sensor) (*) With 1.5 mm^2 max cable section
ENVIRONMENTAL CONDITIONS	Operating temperature: from -25°C to +70°C Humidity: 10% ÷ 90% non condensing. Storage temperature: from -40°C to +85°C Protection rating: IP20 (R-GWR-S-1 sensor) / IP40 (R-GWR-IP-1 and R-GWR-IP-2 sensors)
ASSEMBLY	Wall using screws or double-sided tape
RADIO TECHNOLOGY	LoRa ®; Data encrypted according to AES 128-bit standard
FREQUENCY BAND	Frequency band: 863÷865MHz, Rated frequency: 863.11MHz, Bandwidth 25KHz,
RANGE OF ANTENNAS	500m open field with supplied antenna (R-GWR-IP-1 / R-GWR-IP-2) 300m open field with internal antenna (R-GWR-S-1)
SENSITIVITY	Up to -146dBm
MAX RF POWER	+ 14dBm
SENSOR PAIRING	Maximum number of sensors that can be paired: 32
DIGITAL INPUT / ANALOGUE INPUT / COUNTERS	
DIGITAL INPUT	For potential-free contact
ANALOGUE INPUT	Input: 0 ÷ 30V, precision: 0.5%
COUNTERS:	No. of counters: 1; Maximum frequency: 1Hz
SENSOR FUNCTIONS	
INDUSTRIAL SENSOR R-GWR-IP-1 R-GWR-IP-2	Temperature detection: -25 ÷ 70°C, Precision: 0.5°C between 5 ÷ 60°C Moisture percentage detection: 0 ÷ 100%, Precision: 3% between 20 ÷ 80% R.H. 1 analogue/digital input Analogue input: measurement range 0-30V; Precision: +/- 0.15 V
HOME AUTOMATION SENSOR R-GWR-S-1	Temperature detection: -25 ÷ 70°C, Precision: 0.5°C between 5 ÷ 60°C Moisture percentage detection: 0 ÷ 100%, Precision: 3% between 20 ÷ 80% R.H. Anti-tamper button 1 analogue/digital input Analogue input: measurement range 0-30V; Precision: +/- 0.15 V 1 reed relay (to control the opening of compartments and rooms) 1 anti-flooding probe (optional)

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PAIRING PROCEDURE

⚠ CAUTION

Before using a sensor, the configuration must be set up via the “SETUP” button via webserver.
The complete pairing procedure is shown below:

The R-GWR device can be paired with a maximum of 32 sensors.
A paired sensor is enabled for data exchange with the Gateway.
To pair one or more new sensors it is necessary to follow the procedure below:

1. Power up the R-GWR gateway and the radio sensor
2. In the gateway press the “START NEW SENSOR PAIRING” button in the “Status” section of the web server.
3. The STS LED of the gateway will start flashing.
4. In the sensor you want to pair, press and hold the pairing button until the red LED lights up (transmission).
5. If the green LED of the radio sensor (radio reception) lights up, the association was successful and the new sensor with its data will appear in the “Status” section of the R-GWR gateway web server.
6. Press the pairing buttons of each sensor you want to pair as in the previous point
7. Once all the sensors have been paired, press the “STOP NEW SENSOR PAIRING” button in the R-GWR web server “status” section.
8. The STS LED of the R-GWR gateway stops flashing.

The procedure for replacing a sensor is given in the user manual.

WALL MOUNTING

To fix the sensors to the wall follow the procedure below:

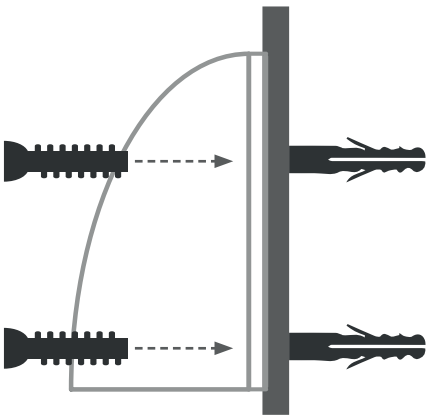
R-GWR-S-1 home automation sensor:

Use a Phillips screwdriver and remove the screws (reference 1 and 2 shown on page 5);
Use a Phillips screwdriver and remove the PCB fixing screw (if the battery is installed, remove the battery in order to reach the PCB fixing screw);
Remove the PCB, taking care not to damage it;
Use the holes on the bottom of the sensor as references to drill the support;
Insert the supplied dowels;
Fix the sensor base with the supplied screws;
Reposition the printed circuit and fix it with the previously removed screw;
Replace the cover and tighten the screws firmly all the way.

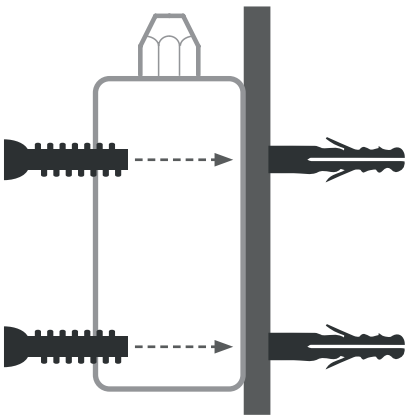
R-GWR-IP-1 industrial sensor:

Use a Phillips screwdriver and remove the screws (reference 1 and 2 shown on page 5);
Use the holes on the bottom of the sensor as references to drill the support;
Insert the supplied dowels;
Fix the sensor base with the supplied screws;
Replace the cover and tighten the screws firmly all the way.

R-GWR-S-1 home automation sensor:



R-GWR-IP-1 industrial sensor:



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BATTERY REPLACEMENT

Procedure for sensors R-GWR-S-1 and R-GWR-IP-1:

Use a Phillips screwdriver and remove the screws (reference 1 and 2).

Open the top cover, remove the battery and insert a new battery (CR123A type for the R-GWR-IP-1 sensor CR2 type for the R-GWR-S-1 sensor R-BT2 battery pack that can be ordered from the www.seneca.it website for the R-GWR-IP-2 sensor) with the correct polarity (see following image).

Replace the cover and tighten the screws firmly all the way.

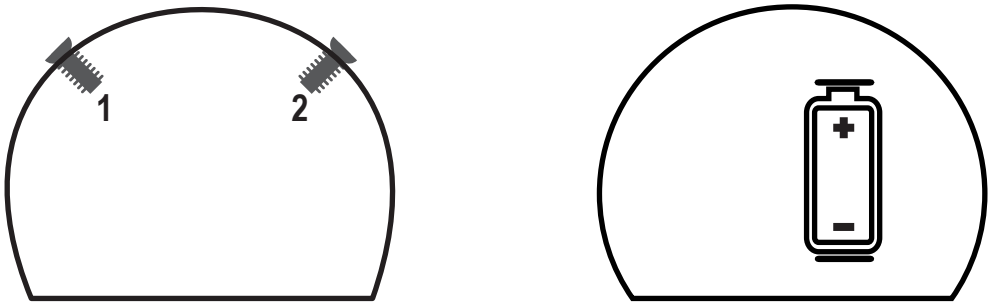
Do not overtighten the screws to avoid breaking the cover.

Pairing begins automatically and the Rx green led starts flashing.

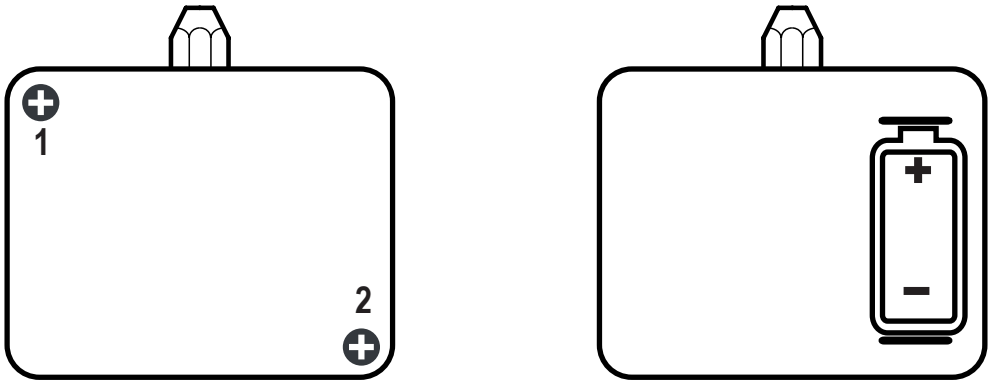
N.B:

- Do not lose the cover and screws.
- The battery supplied at the time of purchase may have a shorter life span, as it is installed at the factory to check performance

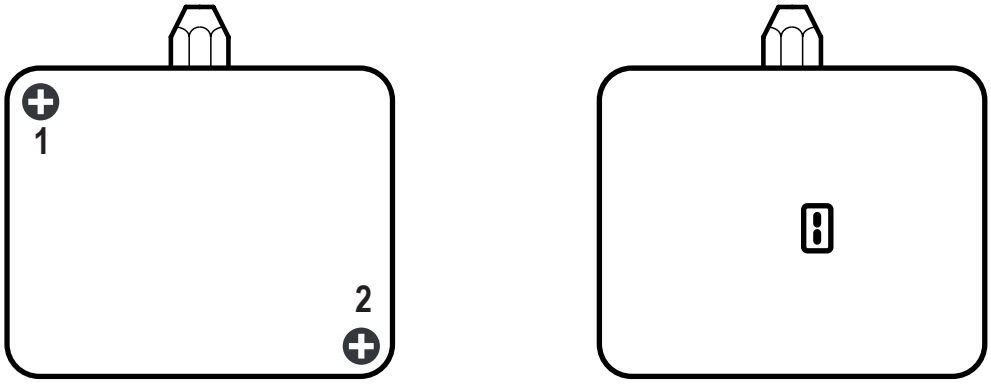
R-GWR-S-1 HOME AUTOMATION SENSOR



R-GWR-IP-1 INDUSTRIAL SENSOR



R-GWR-IP-2 INDUSTRIAL SENSOR



⚠ CAUTION

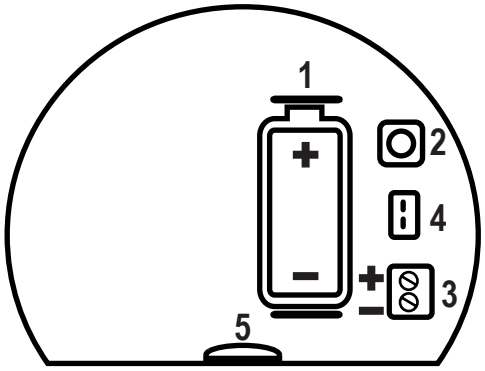
It is always necessary to remove the pre-installed batteries before installing new batteries.
It is strictly forbidden to install two batteries at the same time.

(*) If it is necessary to switch off the R-GWR control unit for a long period, we advise you to switch off the sensors by removing the batteries. Failure to remove the battery would lead to its depletion due to multiple attempts by the single sensor to connect to the control unit.
N.B. To remove the battery, follow the instructions above.

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SENSOR OPERATION

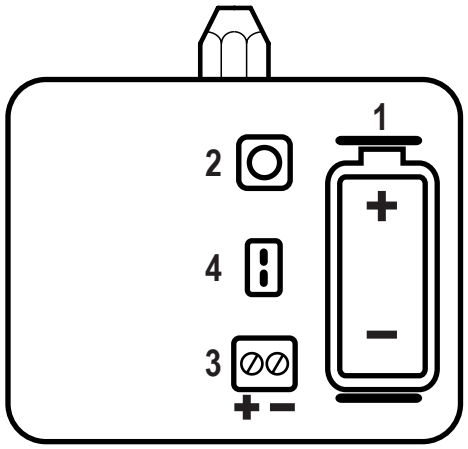
HOME AUTOMATION SENSOR
R-GWR-S-1



KEY:

1) Housing for the battery
2) Button used to pair the sensor and force communication with the R-GWR control unit
3) Analogue / digital input connection terminal
4) Clamp used to connect the anti-flooding probe
5) Reed magnetic relay dedicated to monitoring the opening of doors and/or windows.

INDUSTRIAL SENSOR
R-GWR-IP-1 / R-GWR-IP-2

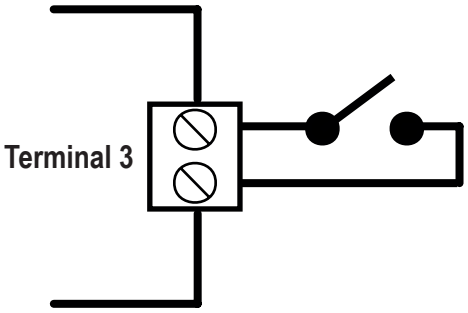


KEY:

1) Housing for the battery
2) Button used to pair the sensor and force communication with the R-GWR control unit
3) Analogue / digital input connection terminal
4) Terminal for the connection of the enhanced battery pack.

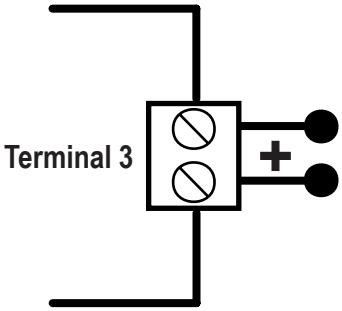
ELECTRICAL CONNECTIONS

DIGITAL INPUT



It is an ON/OFF terminal type input, through this contact you can check the status of a device connected to the sensor and monitor its switching on and off via the web server.

ANALOGUE INPUT



It is an input that allows you to monitor the operation of a machine or device with a measurement range that can go from a minimum of 0 VDC to a maximum of 30 VDC.
The polarity of the terminal must comply with the diagram shown on the side.

⚠ CAUTION

- Do not use sharp objects to remove the battery.
- Old batteries cannot be disposed of in household waste, it is mandatory to return them to the appropriate collection place, prepared by the municipality or point of sale.
- Spent batteries contain heavy metals or material harmful to the environment and health.
- Since they also contain important elements such as iron, zinc, manganese and nickel, they can be recycled.
- We recommend using batteries of the same type inside a device, the use of batteries of different types could cause liquid leakage or battery breakage, or damage the device in use.
- Always replace the battery or batteries of the device used with batteries of the size and type specified by the manufacturer.
- Do not apply pressure or shocks to the battery, this might damage it and cause liquid leakage or breakage.
- Do not expose the instrumentation to extreme, high or low temperatures or pressures, this might cause an explosion or leakage of flammable liquids or gases.
- In the presence of odours, swellings, cracks or loose or missing caps, the batteries must be considered “damaged”. Damaged batteries can release dangerous chemicals and require a special disposal process.
- Contact the manufacturer's customer service for advice on treating damaged batteries.

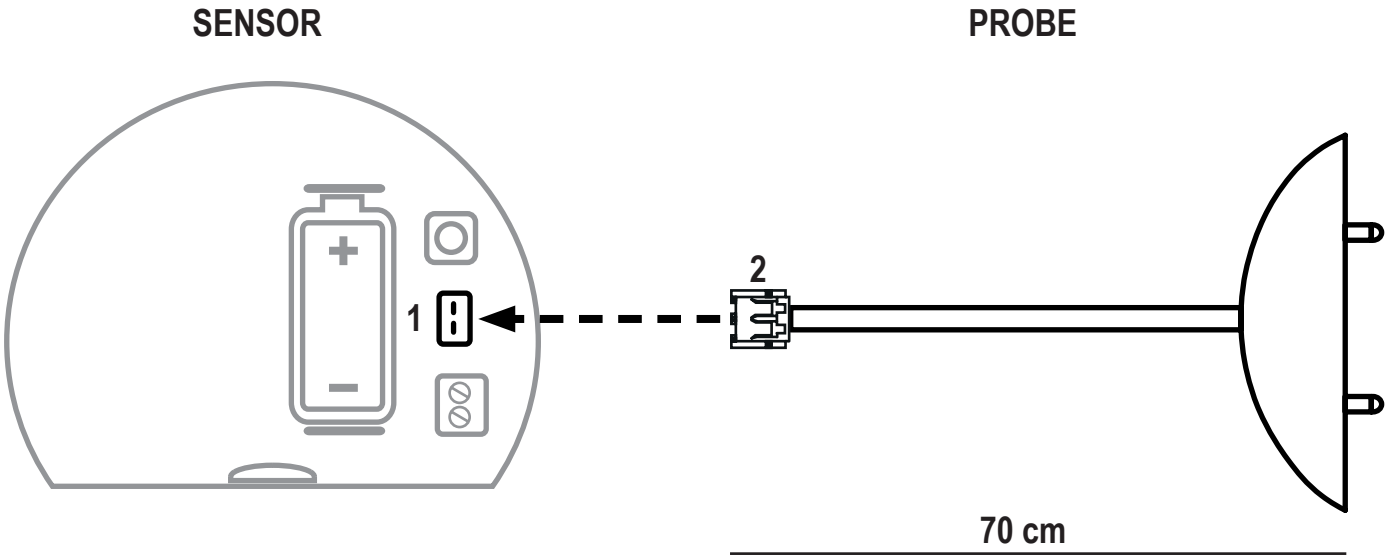
⚠ CAUTION

Risk of fire, explosion and serious burn hazard.
Do not recharge, disassemble, heat above 100°C, incinerate or expose the contents to water.

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ANTI-FLOOD PROBE ACCESSORY (ONLY FOR R-GWR-S-1 HOME AUTOMATION SENSOR)

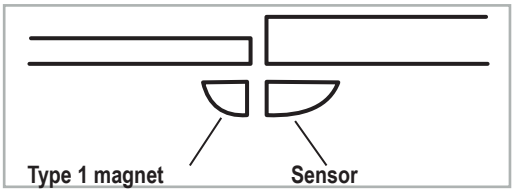
Using this accessory, which can be ordered at www.seneca.it/prodotti/r-gwr in the accessories section, it is possible to monitor the presence of water in the rooms where it is placed.
For correct operation, place the probe at floor level with the metal sensors facing downwards.
The procedure for connecting the anti-flooding sensor to the standard home automation sensor is shown below:
Use a Phillips screwdriver and remove the screws as per the battery replacement procedure.
Open the top cover and connect the two-pole male connector (reference 2) to the terminal (reference 1) as shown in the image;
Close the sensor by replacing the cover with the pre-drilled one supplied with the anti-flooding probe accessory.
Do not overtighten the screws to avoid breaking the cover.
Pairing begins automatically and the Rx led starts flashing.

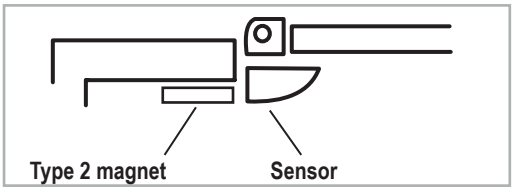


MONITORING OF DOOR AND WINDOW OPENING

To install the sensor follow the procedure below:

1. Identify the installation point of both the sensor and the magnet (e.g.: door frame, upright, window frame), evaluate the use of the type 1 or type 2 magnet depending on your requirements and clean the two identified areas;
2. Apply the round Velcro patch onto the magnet;
3. Check it is positioned correctly and, to guarantee it works properly, leave a maximum distance of 10 mm between the two elements;
4. Remove the Velcro protection film from both the sensor and the magnet, apply in the two areas identified, pressing lightly for a few seconds.





TROUBLESHOOTING

If the Tx Green LED does not light up, there may be four reasons:
1) the sensor is not yet paired with the R-GWR gateway;
2) The sensor is positioned beyond the maximum distance to allow communication with the R-GWR gateway;
3) the R-GWR gateway is off.
4) the sensor battery is low.
NB: it is always possible to force sending the data packet from the sensor by pressing the pairing button indicated in the sensor operation diagram shown on page 6.