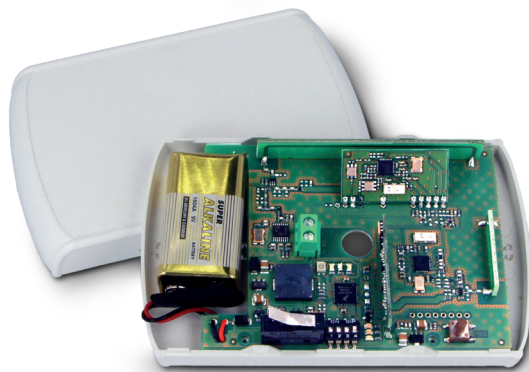


TECHNICAL MANUAL



RPPLUS

Bidirectional wireless
repeater

090010903



 **EL.MO.**[®] SPA



FOREWORD

FOR THE INSTALLER:

Please follow carefully the specifications relative to electric and security systems realization further to the manufacturer's prescriptions indicated in the manual provided.

Provide the user the necessary indication for use and system's limitations, specifying that there exist precise specifications and different safety performances levels that should be proportioned to the user needs. Have the user view the directions indicated in this document.

FOR THE USER:

Periodically check carefully the system functionality making sure all enabling and disabling operations were made correctly. Have skilled personnel make the periodic system's maintenance. Contact the installer to verify correct system operation in case its conditions have changed (e.g.: variations in the areas to protect due to extension, change of the access modes, etc...)

This device has been projected, assembled and tested with the maximum care, adopting control procedures in accordance with the laws in force. The full correspondence to the functional characteristics is given exclusively when it is used for the purpose it was projected for, which is as follows:

Bidirectional wireless repeater for sirens, detectors, remote controls and wireless actuators

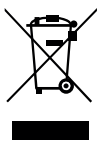
Any use other than the one mentioned above has not been forecasted and therefore it is not possible to guarantee the correct functioning of the device. Similarly, any other use of this technical manual other than the one it has been compiled for — that is: to illustrate the devices technical features and operating mode - is expressly prohibited.

The manufacturing process is carefully controlled in order to prevent defaults and bad functioning. Nevertheless, an extremely low percentage of the components used is subjected to faults just as any other electronic or mechanic product. As this item is meant to protect both property and people, we invite the user to proportion the level of protection that the system offers to the actual risk (also taking into account the possibility that the system was operated in a degraded manner because of faults and the like), as well reminding that there are precise laws for the design and assemblage of the systems destined to these kind of applications.

The system's operator is hereby advised to see regularly to the periodic maintenance of the system, at least in accordance with the provisions of current legislation, as well as to carry out checks on the correct running of said system on as regular a basis as the risk involved requires, with particular reference to the control unit, sensors, sounders, dialer(s) and any other device connected. The user must let the installer know how well the system seems to be operating, based on the results of periodic checks, without delay.

Design, installation and servicing of systems which include this product, should be made by skilled staff with the necessary knowledge to operate in safe conditions in order to prevent accidents. These systems' installation must be made in accordance with the laws in force. Some equipment's inner parts are connected to electric main and therefore electrocution may occur if servicing was made before switching off the main and emergency power. Some products incorporate rechargeable or non rechargeable batteries as emergency power supply. Their wrong connection may damage the product, properties and the operator's safety (burst and fire).

DISPOSAL INSTRUCTIONS



According to Directive 2012/19/EU on the Waste of Electric and Electronic Equipment (WEEE), it is here specified that this Electrical-Electromechanic Device started to be commercialized after 13th August 2005, and it shall be disposed of separately from ordinary waste products.



1. GENERALS

Welcome in the EL.MO. SpA security world with **RPPLUS**, the new bidirectional wireless repeater. RPPLUS allows the repetition of signals coming from specific devices that, due to physical or environmental problems, are not in range with the control unit or other wireless receivers (Halente, Halley, Riverrf).

Born from the experience and from the studies of our R&D team, it can boast several strengths:

- **Large memory.** RPPLUS can sequentially store up to 40 devices codes;
- **Versatile.** It manages EL.MO. wireless contacts, detectors, keypads, sirens and remote controls;
- **Equipped with emergency battery.** The repeater comes with an internally housed buffer battery;
- **Supervised.** RPPLUS regularly communicates his activity and the battery's charge status to the control unit;
- **Recessed installation.** RPPLUS can be installed in an optional 503 flush mount box;
- **Secure.** A tamper device signals opening attempts.

2. TECHNICAL SPECIFICATIONS

Model:	RPPLUS		
Protection class:	IP3X		
Environmental class:	II		
Security degree:	Compliance EN50131 grade 1		
Power supply voltage:	12 V _{DC} (min 4.5 V _{DC})		
Power consumption:	Stand-by — 25 mA	Receiving — 25 mA	Transmission — 28 mA
Buffer battery:	9V battery		
Frequency:	LPD devices frequency (434.525 MHz FM and 868.350 Mhz AM)		
Transmission range:	150 m in open field		
Receiving range:	Check the manual of the transmitting device		
Operating temperature:	From -10 to +40 °C — 93% r.h.		
Weight:	89 g (battery excluded)		
Dimensions:	W82 × H128 × D25 mm		
Parts supplied:	Technical Manual, battery, plugs, mounting screws		

RPPLUS bidirectional repeater is an accessory of compatible control units with CE marking. Having passed the expected laboratory tests, it is compliant to the following standards: EN50131-1, EN50131-5-3+A1 for the grade 1 and environmental class II.



ATTENTION: RPPLUS needs an external power supply; the emergency battery feeds the device only while the primary supply is temporarily interrupted. – RPPLUS is not compatible with LYBRA sirens. – The communications of the control unit status, repeated by RPPLUS, may not be guaranteed to VELAPLUS actuators without power supply.

3. POSITIONING

The RPPLUS installation, such as all the wireless devices, must respect some rules to avoid performance reduction due to installation errors. It is very important to define with the greatest care the operational area of the receiving system in which each wireless device must be properly managed.

In addition, must be considered the installation position, in relation to the materials used in the building construction, and the real coverage of the detectors to be controlled.

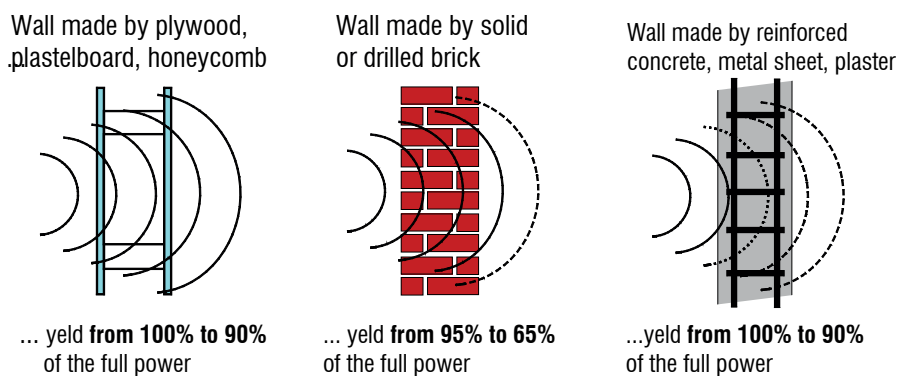


Image 3.1 — Attenuation due to some typical building materials



The repeater must be positioned, as far as possible, to be interposed between the devices and the control unit; the control unit should be more distant from repeater than devices to be repeated. The repeater must repeat only the devices that can not be received directly from the control unit.

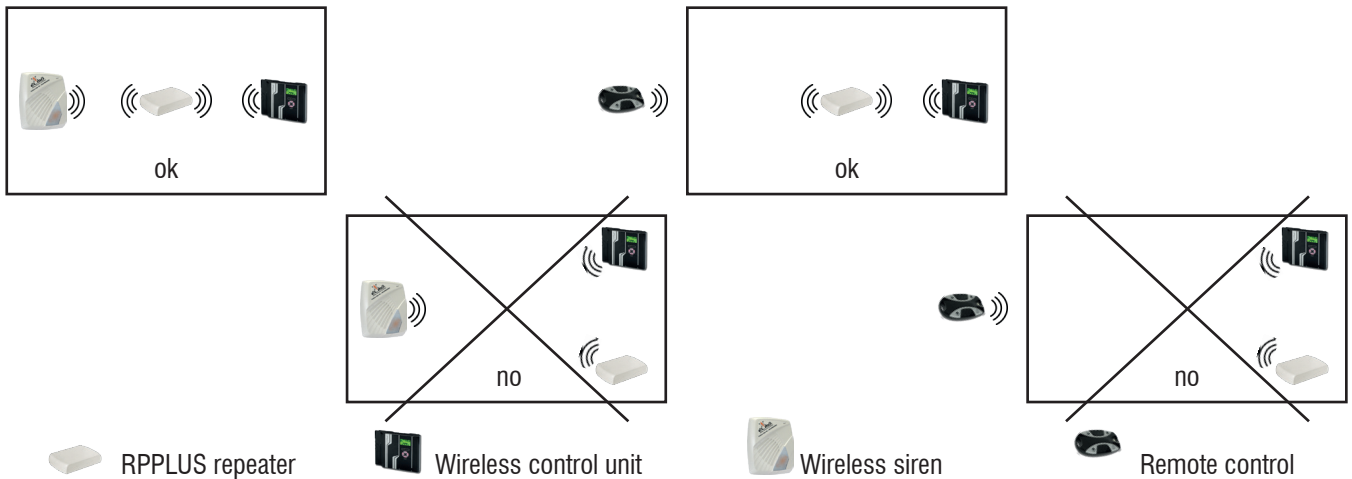


Image 3.2 — Correct and wrong installation position (in buildings as viewed in plan)

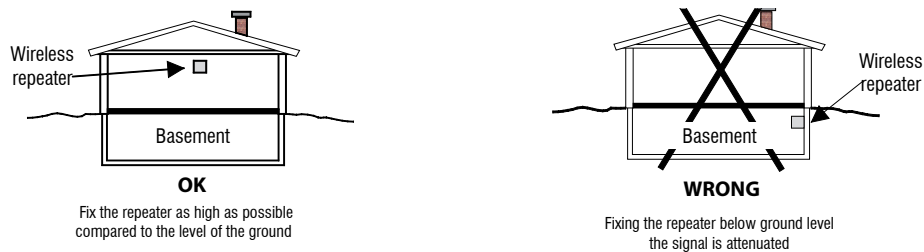


Image 3.3 — Signal attenuation that passes through soil layers

4. INSTALLATION



CAUTION: the repeater electronic board can be damaged by electrostatic discharge. The installer must operate without electrostatic charges already from the housing opening, during the installation phase and during maintenance.

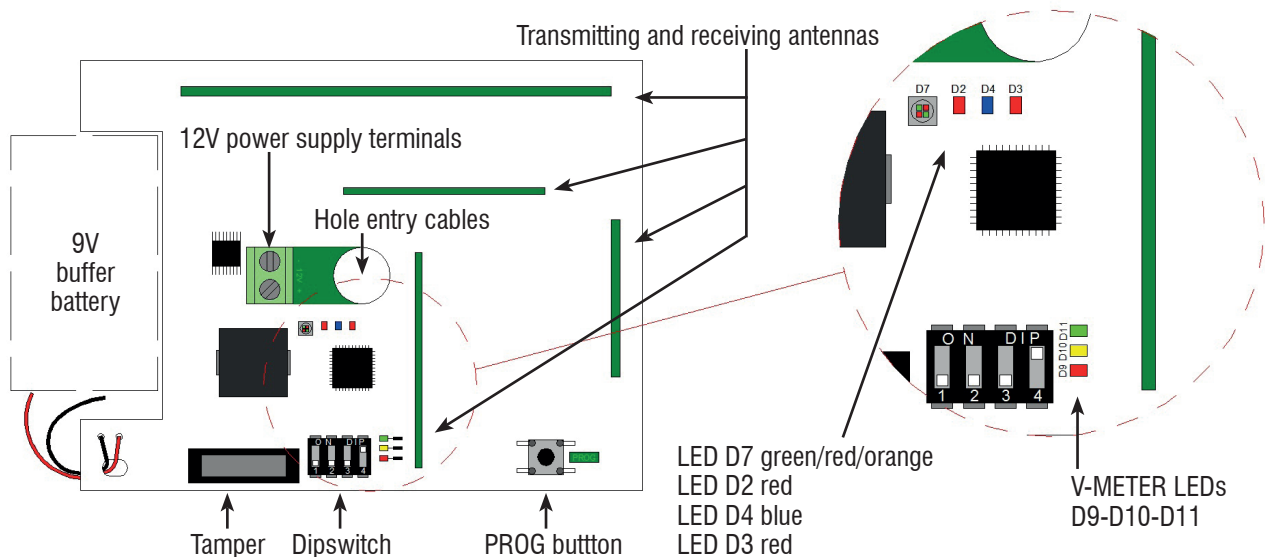


Image 4.1 — View of the board



- Open the cover (see image 4.2) and remove the fixing screws that hold the board;
- Lift the board by gently pressing down on the bottom side of the battery compartment (see image 4.3);
Avoid to exercise traction on the protruding elements of the board;
- Open the pre-drilled zones required for the cables and screws routing for box or wall fixing (see image 4.4) and fix the bottom in the desired position;
- Place in the bottom the board side with the serial number and the longer antenna, matching the holes in the board to the fixing screws holes (see image 4.5);
- Press gently on the side of the tamper, avoiding to apply the pressure to the protruding elements;
- Tighten the fixing screws;
- Connect the external power supply, **without leaving not isolated cable inside the housing;**
- Connect the buffer battery and stick it in the box bottom with double-sided tape, put it near to the board to leave space for the cover closing tab;
- Perform the configuration and programming of the device, then close the housing.



Image 4.2 — housing opening:
With the tip of a screwdriver, exert a slight pressure within the slits.
Unhook the cover from the bottom.

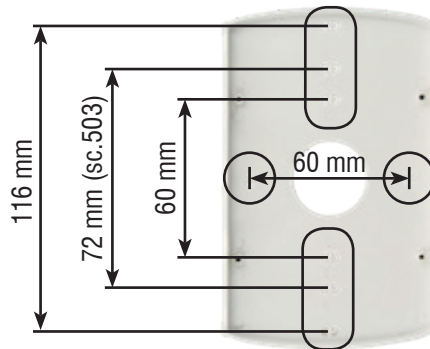


Image 4.4 — housing bottom:
Pre-drilled control unit for the cables routing.
Pre-drilled for the wall or 503 box installation.
Vertical installation for a better operation of the antennas.

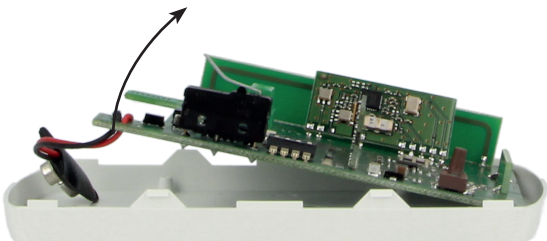


Image 4.3 — board removal

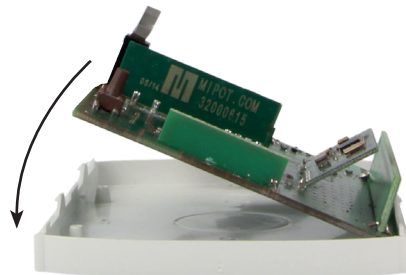


Image 4.5 — board repositioning

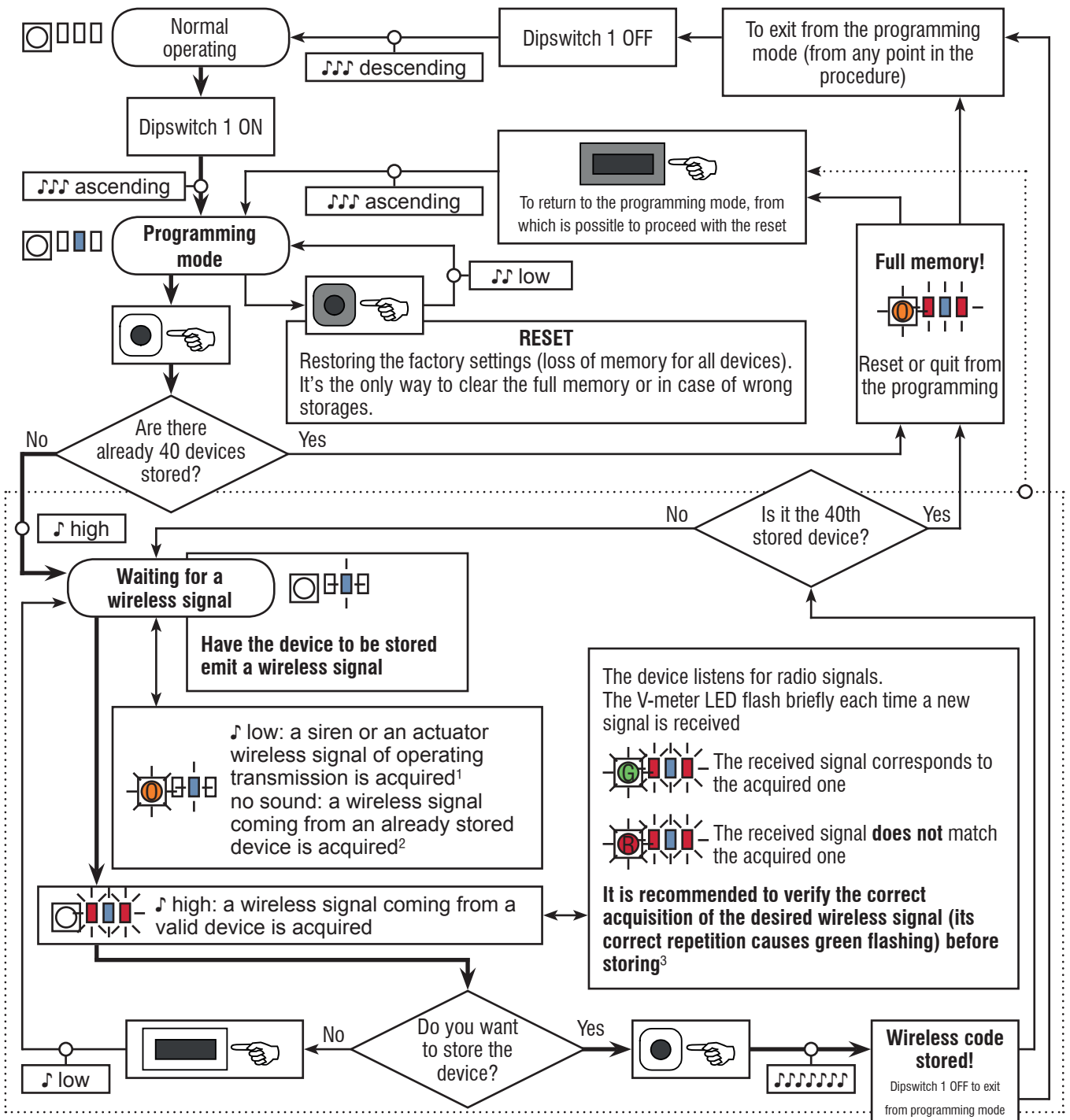
5. CONFIGURATION

DIPSWITCH NUMBER	FUNCTION	OPERATING
1	MODE	OFF: Operating (normal operating) ON: Programming
2	MONITORING	OFF: Operating signal level (V-meter) FM (remote controls and detectors) ON: operating signal level (V-meter) AM (commands, sirens and actuators)
3	SUPERVISION PROTOCOL	OFF: Supervision communications send with Helios protocol ON: Supervision communications send with Villeggio protocol
4	LED POWER SUPPLY	OFF: Off (recommended during the operation in closed housing) ON: On (for programming and test for operating check)

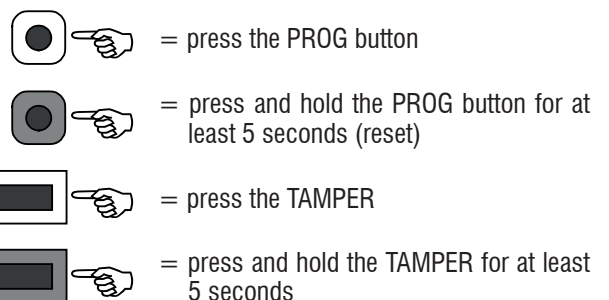
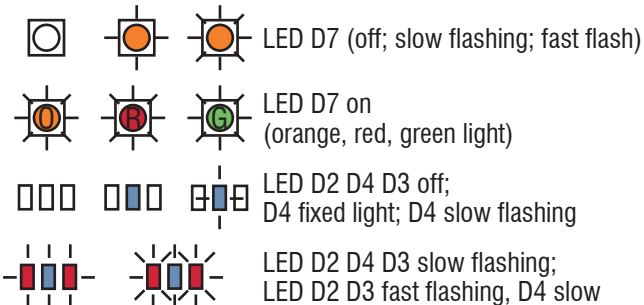


6. PROGRAMMING

- Move the dipswitch 1 on ON to start the programming.



Legend:





¹ The sirens and actuators operating transmissions can not be used for learning, which should be performed by sending the appropriate *N°x siren* or *N°x signal* from the menu of the control unit and never during the operation of the same.

For a correct management of the transmissions, **the learning and the repetition of a only siren and of a only actuator for each repeater is recommended.** In case of multi-area control unit, each with its own siren and the actuator, **use a repeater for each area.**

² When a **command code** or a **response code** of a siren or an actuator is stored, the repeater becomes able to recognize and repeat both types of signal. It is not necessary to store both: the repeater recognizes the second code, as already acquired and refuses to learn it

³ To capture correctly the **dual code detectors** (eg. contact Lupus and roll-up shutter) check the correct acquisition of the signal sending it with the same action performed in the acquisition phase (eg. if the acquisition is made by pressing the tamper, for the check will be necessary to press the tamper again). **The two codes should be stored separately in the repeater.**

Do not store devices that do not need to have their signal repeated by RPPLUS.



**ATTENTION: Do not store the device in two different repeaters
Do not use more repeaters in cascade to further extend the control unit range.**

- At the end of the programming phase, move the dipswitch 1 on OFF.
- It is recommended to repeat the wireless signals emission in operational conditions to check for correct data transmission for each device, interpreting the LED flashing as described in the following chapter.

7. OPERATING MODE

The device is in operating mode when the dispwitch 1 is on OFF. In idle status, both the trasmissive technologies of the device are receiving. Each received wireless transmission is checked.

LED D7 D2 D4 D3	MEANINGS
	Valid AM signal receiving (also by not stored devices)
	Valid FM signal receiving (also by not stored devices)
	FM transmission (FM signal repetition, supervision signal sending and RRPLUS tampering) The wireless transmission is repeated only if coming by the devices stored in the repeater.
	AM transmission (AM signal repetition) The wireless transmission is repeated only if coming by devices stored in the repeater.

During the receiving, the V-meter signal LEDs report the receiving level of the FM or AM frequency: the red LED corresponds to the minimum received power, the green LED to the maximum.

V-meter LEDs remain always active to allow to evaluate the intensity of any background noise on FM (DIP switch 2 OFF) or AM frequency (dipswitch 2 ON).

The ideal situation is when the V-meter LEDs remain Off while the device is not receiving.

8. SUMMARY

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RPPLUS Bidirectional wireless repeater for sirens, detectors, remote controls and wireless actuators - TECHNICAL MANUAL

October 2014 edition - Rev. November 2015

090010903

Product specifications as described above do not bind the manufacturer and may be altered without prior notice.

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