TECHNICAL MANUAL

GAIA2K

Wireless outdoor siren for NG-TRX intrusion detection systems

NG TRX

IMQ-SISTEMI DI SICUREZZA

Addressee for this information: (U) User I (I) Installer

1   DESCRIPTION

GAIA2K is a wireless self-powered outdoor siren.

The siren features a 4 Ω horn and a high-brightness LED flasher.

It features a NOVODUR case with LED flasher.

GAIA2K can be programmed using BrowserOne software.

A microswitch for protection against cover opening and removal from the wall is present.

GAIA2K is compatible with the devices that use the NG-TRX protocol, such as Villeggio NG-TRX and GATEWAY2K control units.

Compatible control unit	Firmware Version
VILLEGGIO NG-TRX Series	8.2.0 or above
PREGIO Series	2.3.0 or above
PROXIMA series	1.0.2 or above

GAIA2K is certified IMQ - Security Systems.

2   EXPLODED VIEW   I
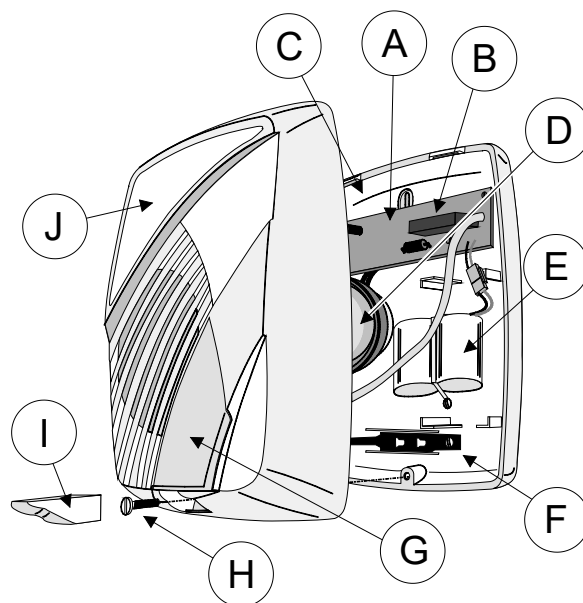
A   electronic board
B   NG-TRX wireless module
C   plastic bottom
D   magnetodynamic 4 Ω horn
E   battery pack with quick-disconnect connector
F   microswitch for protection against cover opening and removal
G   flasher lower cover with front flasher circuit
H   front fixing screw
I   closing cap
J   front adhesive label

Model		GAIA2K	
Identification			
Use		outdoor	
General features			
Sound emission	Sound type	two-tone sound (1.2 kHz / 1.8 kHz). 3 other sweep tones and auxiliary acoustic signals can be programmed.	
	Number of horns	1	
	Sound pressure	103 dBA @ 3 m, 110 dBA @ 1 m (1)	
Operating voltage	Power supply	7.2	V
	Battery	BLSH3360 7.2 V lithium battery pack	
	Minimum power supply	4.5	V
Current consumption at 7.2 V	Alarm mode	1100 mA peak, 950 mA average	mA
	Inactive mode	315.0	µA
Transmission frequencies		868,120 - 868,820 - 869,525	
Max power in transmission mode		25	mW
Wireless range	maximum	2000 (2)	m
	nominal	1000 (2)	m
Autonomy		3 years with 1 alarm cycle per month and 4 control unit arming and disarming operations per day	

(1) at 7.2 V, with maximum volume
(2) refer to the reception of 99% of transmitted packets, with devices installed in open field at 1,5m height, without antennas (nominal range) / with antennas (max range) oriented in the most favourable direction respectively
(3) adjustable via BrowserOne
(4) to comply with EN50131-5-3 grade 1, set supervision time equal to or below 60 minutes; to comply with EN50131-5-3 grade 2, set supervisione time equal to or below 20 minutes

Model		GAIA2K	
Operating times	Activation delay	1 s from control unit command, 300 ms from tamper opening	s
	Supervision	from 5 to 240 min (default) (3)	min
Sensitivity		-116	dB
IMQ certified		EN 50131-4, EN 50131-5-3: grade 2 (4)	
Environmental class		IV	
Protection class		IP34	
Dimensions and weight		W202 × H242 × D90 mm; 1.25 kg	

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Additional information

Receiver: NG-TRX module.
Activation: from digital code received by the control unit or other NG-TRX device.
Digital code: 16-bit rolling code with valid code chosen among 2^{35} combinations.
Sound: two-tone SWEEP (1.2 kHz / 1.8 kHz). 3 other sweep tones and auxiliary acoustic signals can be programmed.
Auxiliary signalling: beeps with adjustable volume (4 levels) for configuration change and programmable for system ON/OFF, entry time, exit time.
Flasher activation: in sync with sound activity for alarm, control unit operating state visualization.
Number of flashes: approx. 60 per minute.
Maximum time for alarm and emergency: settable via software.
Stand-by time: 1 s at first powering and preparing to programming.
Siren block time at Tamper closing: 1 minute.

Parts supplied

Screws, dowels, BLSH3360 battery pack, technical manual.

4   PRECAUTIONS BEFORE DEVICE MOUNTING   I
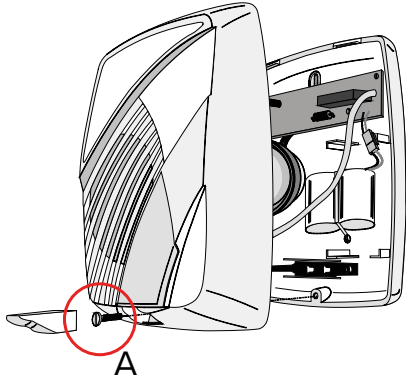
⚠ *General warnings are at the end of this manual.*

Check the mounting surface is perfectly flat.

Do not damage the wireless module during installation.

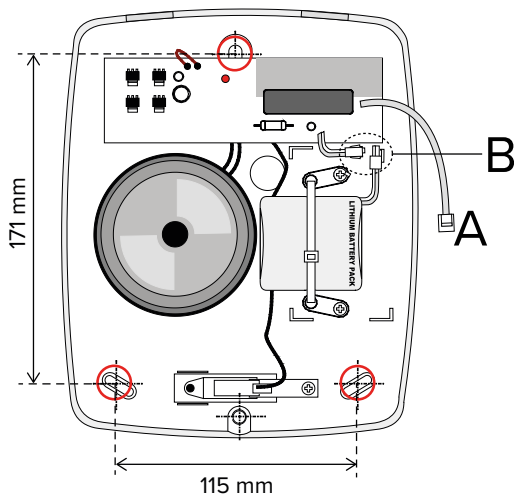⚠ *Do not cause short circuits at the battery terminals: danger of explosion and fire.*

5   DEVICE MOUNTING   🔲

- **Opening the housing**

– remove the cap covering the front screw
– unscrew the fixing screw A
– separate the cover from the base

- **Base wall mount**

171 mm

115 mm

A Cable with connector for flasher wiring.
**B** Non-reversible connectors to wire a battery pack (supplied not wired).

– fix the base to the surface using screws and dowels
– wire the front flasher circuit to the siren board using the cable with connector A
– arrange the battery in the specific space
– wire the battery to the board joining the B connectors

⚠ *Do not reverse polarities.*

- **Closing the housing**
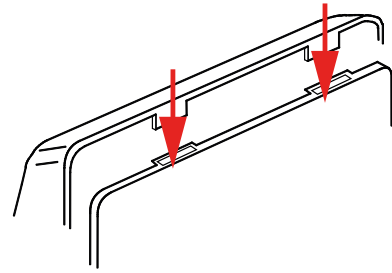
– position the cover on the base
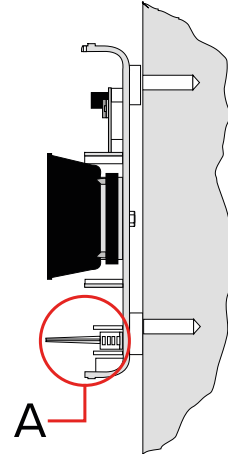
⚠ *Make sure the tamper microswitch A is kept pressed when the cover is closed.*

– tighten the fixing screw
– place the cap covering the front screw

6   STARTING THE DEVICE   🔲

Code programming is unique for each single siren.
During the acquisition of the siren code transmitted by the control unit, the programming jumper must be closed (intact wire).
The jumper must be cut once the acquisition is done, in order to proceed with code memorization.
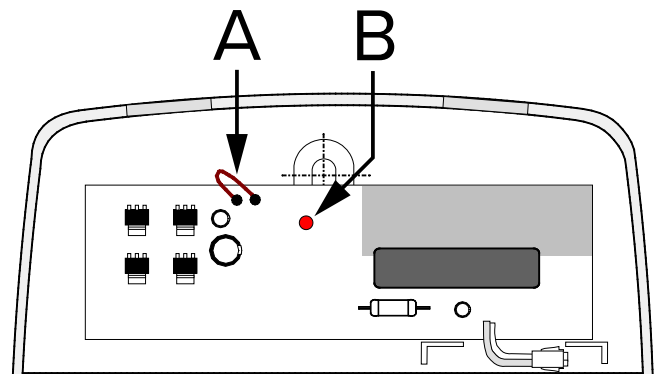
A Programming jumper
B LED for indication of learning operations

Coloured jumper for selection

Unprogrammed siren, ready for programming.

Siren with memorized control code.

LED indications on siren board

OFF	Siren in normal operation.
ON	Siren waiting for programming.
Slow blinks	Siren code learned.
Fast blinking	Siren code learned. Tampering (cover open).

6.1 Device learning to NG-TRX control unit

Before starting learning procedure:

– place the siren on a horizontal flat surface
– remove the front cover (as illustrated in mounting procedure)
– identify the programming jumper and make sure it is intact
– supply the siren wiring the two non-reversible connectors of the board and of the battery.

⚠ *The siren code will not be memorised if battery pack voltage is low.*

The siren will enter programming mode: the yellow LED on siren board and the red flasher LED on cover will turn on.

Device learning procedure:

– on control unit keypad, enter installer code followed by **OK** to go to setup menu
– use arrow keys ⬆ or ⬇ to go to FAST ACQUIRE option
– press **OK**
– press **Stop** until menu NEW SIREN is displayed
– press **OK** twice
– press key 1 (memorization to control unit) and then key **OK** to enable control unit transmission to the siren
– in case of correct learning procedure, the unit buzzer will beep twice; the yellow LED on siren board and the red flasher LED on cover will blink
– the display will show AGAIN?: press **OK** to try the transmission again (in case the previous one was not successful), or **Stop** to quit
– the display will show NAME?: enter a name and press **OK**, or **Stop** to skip this passage
– cut siren setup jumper to memorize the learned code

The two siren LEDs flash quickly to signal cover opening state.

The siren will remain inhibited for 1 minute after closing the cover; it will not activate in case of alarms.

The four front LEDs and the single LED on device board turn on alternately to signal the exit from inhibition phase. When the time expires, the LEDs turn off.

– repeat the procedure for all the other sirens to learn
– exit control unit setup menu; when required, press **OK** to save the setup

Up to 15 sirens can be managed.

The operational parameters can be set later using software BrowserOne.

7 SETUP VIA BROWSERONE   Ⓘ

The device can be set using BrowserOne v3.4.7 or above.

– load the latest module available for the control unit in use
– start control unit connection
– select **Read setup** key to read control unit setup
– go to **Radio Sirens** page
– select the grid row corresponding to the siren to configure
– use panel **Options NG-TRX** to set the NG-TRX siren parameters

7.1 Radio sirens

NG-TRX options

Use this pane to set specific functions of NG-TRX sirens.

▼ **Supervision interval**

Select the time interval between two consecutive supervision communications.

The supervision is useful to signal siren proper operation to the control unit.

If this is set to default, the value set in page **System Options** > **Options NG-TRX** (see paragraph 7.2 *p. 5*) will be used instead.

▼ **Signalling zone in time**

Select the type of siren signal emitted during entry time.

▼ **Signalling exit delay**

Select the type of siren signal emitted during exit time.

▼ **Maximum activation interval**

Select maximum duration for siren activation.

The siren will remain active for such interval unless it receives a stop command from the unit before.

▼ **Maximum daily activation**

Select the maximum number of daily activations for the siren.

Useful to avoid excessive battery consumption.

▼ **Acoustic indication**

Select siren sound type.

Useful to single out sirens from other nearby ones or to signal specific events with special sounds.

▼ **Activation volume**

To set siren activation volume move cursor on the bar (8 levels).

▼ **Beep volume**

To set siren beep volume move cursor on the bar (4 levels).

▼ **Delay supervision anomaly**

If selected, supervision loss notifications will be delayed of a time equal to 6 times the supervision interval.

▼ **No active in tamper**

Select it to prevent the tamper event from triggering the siren.

Useful during maintenance sessions.

▼ **Light indication existence in life**

Select it to make the device flash every 60 seconds.

If **Light indication arm state** option (below) is enabled, flashing will only happen while the control unit is disarmed.

▼ **Light indication arm state**

Select it to make the device flash every 30 seconds while the control unit is armed.

▼ **Light indication memory alarm**

Select it to make the device flash 3 flashes every 30 s if there are alarm memories.

▼ **Light indication arm/disarm**

Select it to have the front LED light up every time a sector belonging to one of its pertaining areas is armed or disarmed.

- Arming: 3 flashes.
- Disarming: one long flash

▼ **Acoustic indication arm/disarm**

Select it to have the siren sound every time a sector belonging to one of its pertaining areas is armed or disarmed.

- Arming: 3 beeps
- Disarming: one long beep

Click on the dedicated buttons to select siren pertaining areas.

Other buttons:

▼ **Load default**

Reset to factory default.

▼ **Copy setup**

Create a copy of current setup.

▼ **Paste setup**

Paste setup copied previously.

7.2 Options for communication to control unit

To configure communication between NG-TRX devices and control unit:

– on BrowserOne main page, select **System Options**

– select tab **Options NG-TRX**
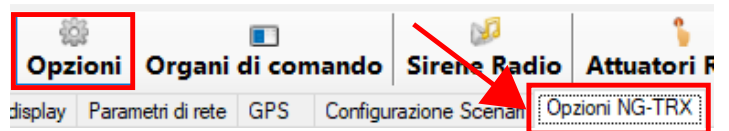
▼ **Receiving multichannel**

When active, the control unit receives on three channels simultaneously; when deactivated, the control unit receives on one channel only (preset/preferred). We recommend to keep it non active only if a channel has disturbances.

▼ **Default channel**

This is the channel used by the control unit to receive data in case of no interference (default: channel 1). In case of interference, the unit defines a channel (even different from the preset one) according to interference level and uses it for data reception.

▼ **Supervision interval**

It defines supervision time interval common to all system devices: such interval will be valid for all devices that has no specific interval selected (default).

Select **Enable detection RF interference** to allow the control unit to detect any interference on the three radio channels.

For further information about this option and other in this menu, please see programming manual of the control unit in use.

Once all changes have been done, write the new setup to the control unit.

⚠ *The new setup will be sent to the siren at the first valid control unit transmission, and only if the previous configuration has changed. The siren will beep to confirm the operation.*

8 OPERATING MODE

8.1 LED indications
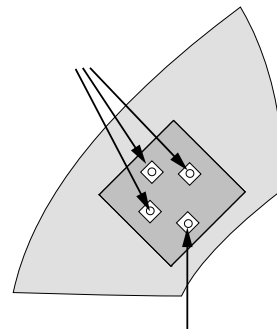
A LED for alarm state visualization
B LED for arming and configuration state visualization

The front flasher is activated in synchrony with the siren.

Moreover, it provides the following information (if enabled):

3 blinks	Control unit arming.
Steadily on (3 seconds)	Control unit disarming.
LED B fast blinking	Tampering (cover open). System locked.
1 blink of LED B + 4 blinks of all LEDs (alternate)	Tamper closing (after 1 minute). Leaving system lock.

9   MAINTENANCE

9.1   Siren state reset

To reset siren state, disconnect the power source for at least 15 seconds.

When restoring the power supply, the siren will enter a different mode according to the state of the configuration jumper and of the tamper contact:

- **programming** mode if the programming jumper is closed;
- **inhibition** mode if the programming jumper and the tamper are both open;
- **operativa** mode if the programming jumper is open and the tamper is closed.

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EU DECLARATION OF CONFORMITY

Hereby, EL.MO. Spa declares that the radio equipment GAIA2K is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: www.elmospa.com – registration is quick and easy.

CE

GENERAL WARNINGS

This device has been designed, built and tested with the utmost care and attention, adopting test and inspection procedures in compliance with current legislation. Full compliance of the working specifications is only achieved in the event the device is used solely for its intended purpose, namely:

Wireless outdoor siren for NG-TRX intrusion detection systems.

The device is not intended for any use other than the above and hence its correct functioning in such cases cannot be assured. Consequently, any use of the manual in your possession for any purpose other than those for which it was compiled - namely for the purpose of explaining the product's technical features and operating procedures - is strictly prohibited.

Production processes are closely monitored in order to prevent faults and malfunctions. However, the components adopted are subject to an extremely modest percentage of faults, which is nonetheless the case with any electronic or mechanical product.

Given the intended use of this item (protection of property and people), we invite you to adapt the level of protection offered by the system to suit the actual situation of risk (allowing for the possibility of impaired system operation due to faults or other problems), while reminding you that there are specific standards for the design and production of systems intended for this kind of application.

We hereby advise you (the system's operator) to see that the system receives regular routine maintenance, at least in accordance with the provisions of current legislation, and also check on as regular a basis as the risk involved requires that the system in question is operating properly, with particular reference to the control unit, sensors, sounders, dialler(s) and any other device connected. You must let the installer know how well the system seems to be operating, based on the results of periodic checks, without delay.

Work involved in the design, installation and maintenance of systems incorporating this product should be performedonly by personnel with suitable skills and knowledge required to work safely so as to prevent any accidents. It is vital that systems be installed in accordance with current legislation. The internal parts of certain equipment are connected to the mains and therefore there is a risk of electrocution when maintenance work is performed inside without first disconnecting the primary and emergency power supplies. Certain products include batteries, rechargeable or otherwise, as an emergency backup power supply.

If connected incorrectly, they may cause damage to the product or property, and may endanger the operator (explosion and fire).

INSTALLER WARNINGS

Comply strictly with current standards governing the installation of electrical systems and security systems, and with the manufacturer's directions given in the manuals supplied with the products.

Provide the user with full information on using the system installed and

on its limitations, pointing out that there are different levels of security performance that will need to suit the user's requirements within the constraints of the specific applicable standards. See that the user looks through the warnings given herein.

Work involved in the design, installation and maintenance of systems incorporating this product should be performedonly by personnel with suitable skills and knowledge required to work safely so as to prevent any accidents. It is vital that systems be installed in accordance with current legislation. The internal parts of certain equipment are connected to the mains and therefore there is a risk of electrocution when maintenance work is performed inside without first disconnecting the primary and emergency power supplies. Certain products include batteries, rechargeable or otherwise, as an emergency backup power supply.

If connected incorrectly, they may cause damage to the product or property, and may endanger the operator (explosion and fire).

USER WARNINGS

Check the system's operation thoroughly at regular intervals, making sure the equipment can be armed and disarmed properly.

Make sure the system receives proper routine maintenance, employing the services of specialist personnel who meet the requirements prescribed by current regulations.

Ask your installer to check that the system suits changing operating conditions (e.g. changes in the extent of the areas to be protected, change in access methods, etc...)

MAIN SAFETY RULES

The use of the device is forbidden for children and unassisted disabled individuals.

Do not touch the device when bare footed, or with wet body parts. Do not directly spray or throw water on the device.

Do not pull, remove or twist the electric cables protruding from the device even if the same is disconnected from the power source.

DISPOSAL WARNINGS
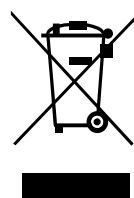
IT08020000001624

In accordance with Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), please be advised that the EEE was placed on the market after 13 August 2005 and must be disposed of separately from normal household waste.

This product needs batteries for correct functioning. Exhausted batteries have to be delivered to dumping grounds authorised for battery collection. The materials used for this product are very harmful and polluting if dispersed in the environment.