

GRIFO2K

**Indoor/outdoor wireless DT detector
with volumetric protection for NG-TRX
intrusion detection systems**



Addressee for this information: User | Installer

1 DESCRIPTION

GRIFO2K is a NG-TRX wireless dual technology detector. The detector includes two sections working in AND mode. **Infrared section (IR):** digital PIR sensor with temperature compensation and environment monitoring, vertical curtain lens with white light protection.

Microwave section (MW): 24GHz DRO planar antenna. Moreover, the detector features anti-blinding function. GRIFO2K can be programmed using BrowserOne software. Optional accessories available:

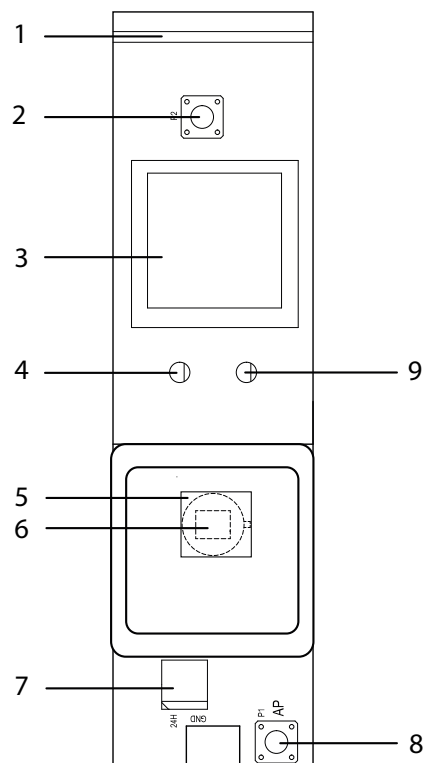
- **ANGSGX**, bracket for corner mount
- **CUPSGX**, sunshield for outdoor installations
- **SNDSGX**, joint for corner mount

GRIFO2K is compatible with Villeggio NG-TRX, Pregio and Proxima series control units. Connection to Pregio and Proxima control units requires use of GATEWAY2K.

Control unit	GRIFO2K
PREGIO series	2.3.2.0 or higher
VILLEGGIO NG-TRX series	8.3.3.0 or higher
PROXIMA series	1.0.2 or above

GRIFO2K is certified IMQ - Security Systems.

2 PCB



- 1 RF antenna
- 2 Learning button P2
- 3 MW antenna
- 4 MW LED (blue)
- 5 Silicon filter
- 6 PIR sensor
- 7 24H terminals
- 8 Tamper button
- 9 IR LED (green)

3 TECHNICAL DATA



Model		GRIFO2K	
Identification			
Technology	IR + MW		
Coverage type	volumetric		
IR section			
PIR sensors number	1		
Max range	7		m
Pulse count	5		s
Pre-alarm time	5		s
Opening	81°		°
No. of IR sensitive zones	18 areas on 4 levels		
MW section			
MW max range	7		m
Pulse count	5		s
Pre-alarm time	5		s
Standard TX frequency	24,000		GHz
MW horizontal coverage	80°		°
MW vertical coverage	35°		°
General features			
Operating voltage	Power supply	7,2 (DC)	V
	Minimum power supply	3,5	V
	Compatible battery	2ER14505 7V2 2.7 Ah	
	Discharged battery threshold	4,9	V
	Battery restore threshold	5,6	V
Current consumption at 7.2 V	Power on in progress	1,8	mA
	Inactive mode	19,0	µA
	Consumption for transmission at minimum power	23	mA

Model		GRIFO2K	
General features			
Operating times	Power-on stand-by	25	s
	Walk test	8	min
	Post-alarm inhibition time	In walk test mode: 5 s; in system test mode: 5 s; in operating mode with system armed: 5 s; in operating mode with system disarmed: 5 min (1)	
	Supervision	240 (2)	min
Radio connection range	nominal	850 (3)	m
	maximum	1500 (3)	m
Max power in transmission mode		25	mW
Transmission frequencies		868.120 MHz; 868.820 MHz; 869.525 MHz (4)	MHz
Autonomy		2,5 (5)	years
Working temperature		-25 / +55	°C
Protection class		IP55 (6)	
IMQ certified		EN50131-2-4: grade 2; EN50131-5-3 (4)	
Environmental class		3	
Dimensions and weight		L39 × H155 × P44, 140 g	
Parts supplied		Screws, dowels, rubber washers, cable conduit, front screws washers, battery	

- (1) in operatività a impianto inserito, il tempo di inibizione è 5 s solo per i primi 3 allarmi dopo l'inserimento; per gli allarmi successivi è 5 minuti
- (2) adjustable via BrowserOne
- (3) 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
- (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 supervision time equal to or below 20 minutes
- (5) calculated with device set to default settings and 20 minute supervision time. Settings that cause duration variation: inhibition 30s = -60%; disabled LED = +5%; anti-blind active = -5%
- (6) use of supplied washers required

4 PRECAUTIONS BEFORE DEVICE MOUNTING

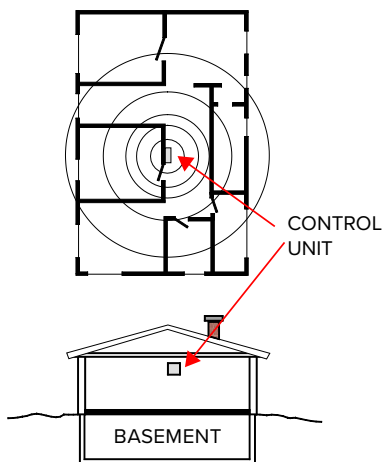


! The table of contents and general warnings are at the end of this manual.

Before installing the product, please read the following indications carefully.

4.1 General considerations

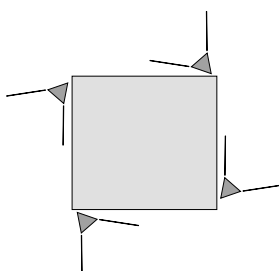
- Make sure the device operating field is free and devoid of zones darkened by obstacles.
- Adjust microwave range so that it does not extend beyond glazing or plastic curtains.
- Do not install the device near swaying or vibrating metal objects (ex. fridge/refrigerators groups, window blinds, metal roller shutters).
- Avoid installation near heat sources or drafts.
- Do not touch PIR sensor silicon filter.
- In case of detector installation in places with high frequency of people passage with disarmed system, set inhibition time to 5 minutes to limit the number of transmissions and prevent premature battery depletion.
- For a better reception we recommend installing intrusion detection control units in the central area of the building to protect and over the ground level.



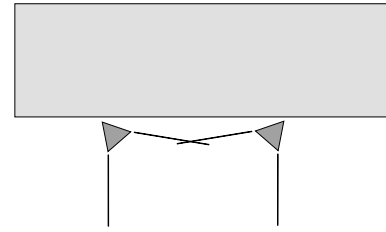
4.2 Outdoor installation positions

Possible installation

- Perimeter installation with non-overlapping coverage areas.



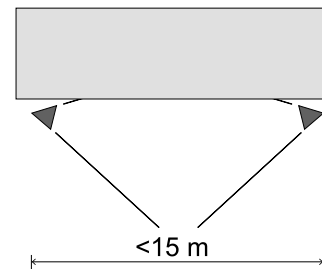
- Installation of detectors on one side, in slightly opposed positions.



- Outdoor installation, protected by a porch or a balcony.

Wrong installation positions

- Installation of detectors on one side, in opposed positions at a distance of less than 15 metres.



- Detector orientation towards areas with vehicles passage at less than 8 metres distance.
- Detector orientation towards trees/bushes at less than 8 metres distance.
- Detector direct orientation towards the sun.
- Pole mount (with/out sunshield): bad weather may cause false alarms.
- In environments with pets/animals.

4.3 Environment limits

The use of some building materials may reduce the detector wireless signal strength.

Example:

- plywood and honeycomb walls: 90-100% of full strength;
- solid / hollow brick walls 65-95% of full strength;
- concrete walls or metal sheet and plaster: 0-70% of full strength.

Metal grids, metal gates, and glasses may also affect (i.e. diminish) detector strength.

4.4 Protection from electrostatic discharges

! The electronic board of the detector may be damaged by electrostatic discharges.

The installer must completely avoid any presence of electrostatic discharges both during installation and maintenance.

4.5 Definition of installation position

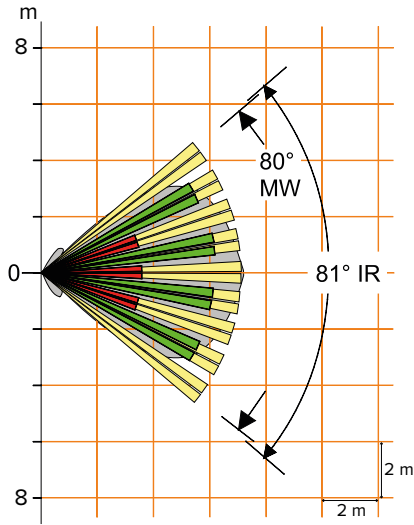
Choose installation position taking into account the IR and MW cover ranges shown in the following diagrams.

! Diagrams refer to detectors mounted at 2,1 m height.
No brackets for corner mount are used.

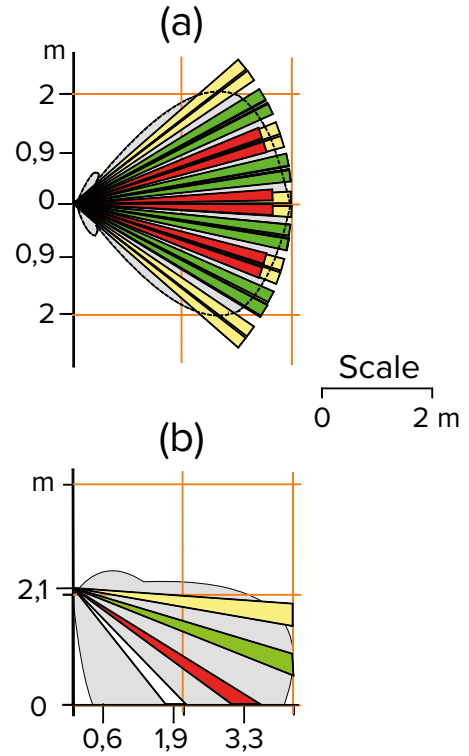
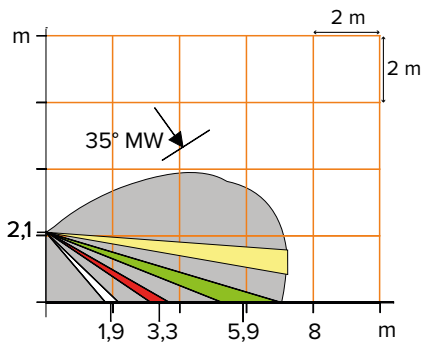
Coverage at minimum range (4 m)

Coverage at maximum range (7 m)

Top view



Side view

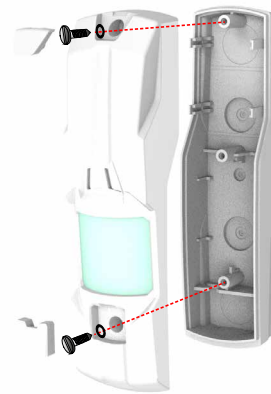


- A Top view
- B Side view

5 DEVICE MOUNTING



• Opening the housing

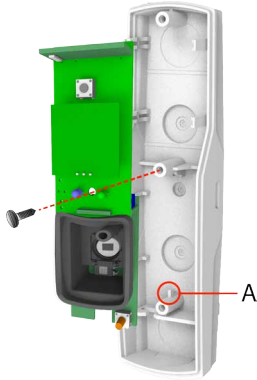


- remove caps covering front screws
- unscrew fixing screws

! To ensure IP class protection insert washers between screws and cover holes.

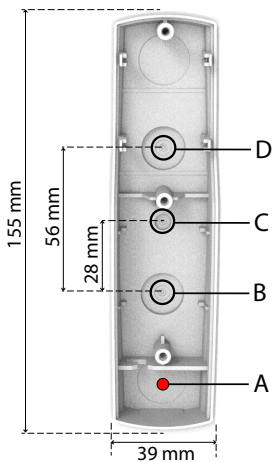
- separate the cover from the base

• **Removing the electronic board**



- unscrew the fixing screw
- remove the board from the lower hook (A)

• **Base wall mount**



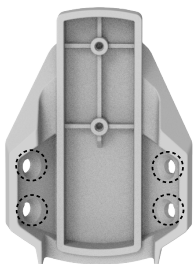
- open predrilled areas B, D
- if required, install the kit for protection against removal from the surface at this step (see paragraph 5.1 p. 6)
- fix the detector base to the wall using screws and dowels

 *insert also washers supplied*

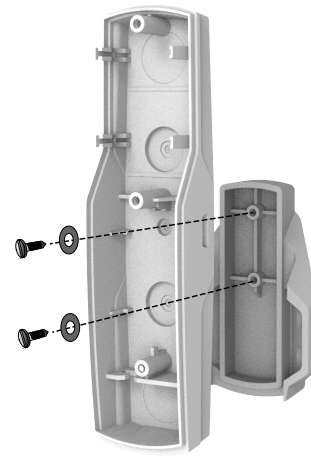
• **Base corner mount**

ANGSGX optional bracket required.

- if required, install the kit for protection against removal from the surface at this step (see paragraph 5.1 p. 6)



- fix the bracket to the wall



- open predrilled areas B, C
- fix the detector base to the bracket using screws and dowels

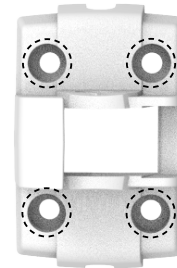
 *insert also washers supplied*

See the relevant instructions.

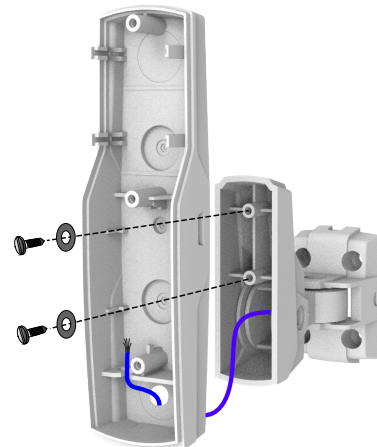
• **Mounting on optional joint**

SNDSGX optional joint required. For information on how to assemble the joint see relevant instructions.

- if required, install the kit for protection against removal from the surface at this step (see paragraph 5.1 p. 6)



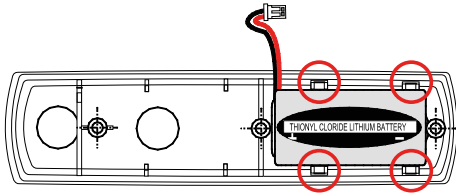
- fix the joint base to the wall



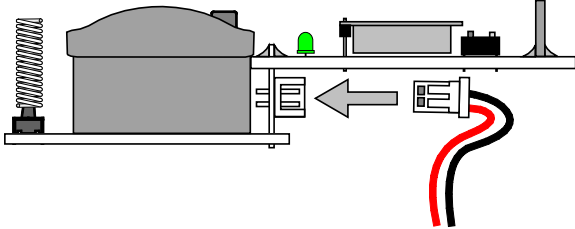
- open predrilled areas B, C
- fix the detector base to the joint body using screws and dowels

 *insert also washers supplied*

• **Battery wiring**



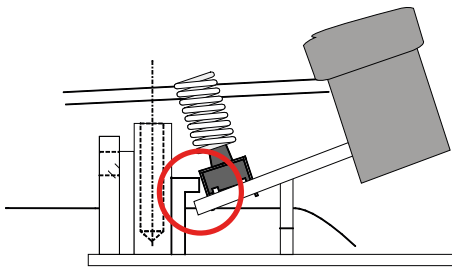
- fit the battery among the four clips



- wire the battery cable connector to the corresponding one on the board

• **Board positioning**

Disconnect the battery following the steps above in reverse order:

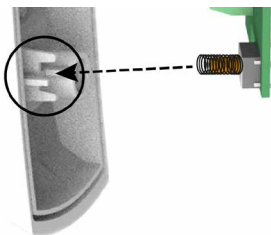


- position the electronic board under the lower hook
- tighten the fixing screw

• **Device setup**

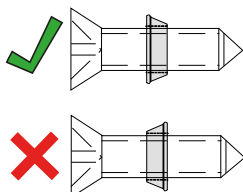
For detector configuration see the following sections.

• **Closing the housing**



- position the cover on the base

⚠ *make sure the tamper protection spring fits correctly to its place.*



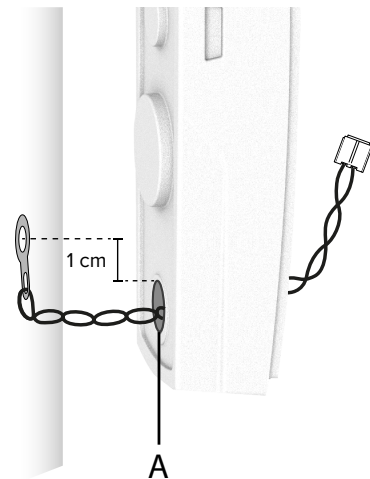
⚠ *to ensure IP class protection insert washers on front screws as indicated in the above diagram.*

- fasten cover fixing screws
- place caps covering front screws

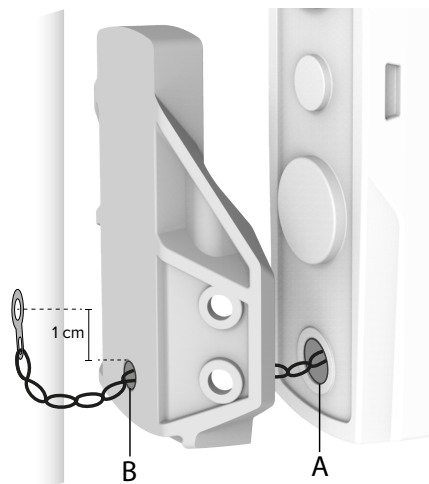
5.1 Protection against removal from the mounting surface

Compliance with EN 50131 regulation grade 2 requires that the device is protected against removal from the mounting surface.

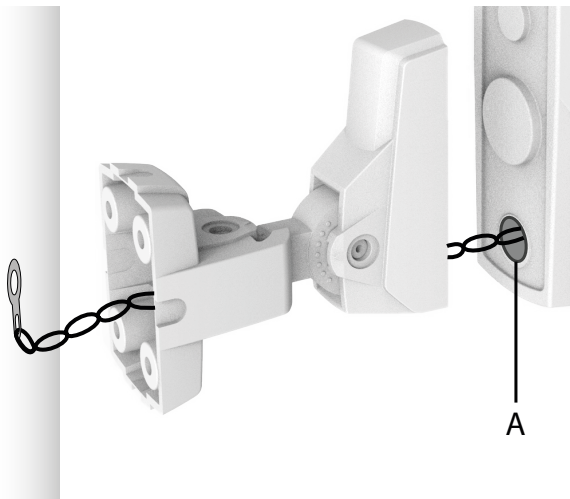
Install the proper kit for protection against removal **before** fixing the detector base, the ANGSGX bracket or the SNDS-GX joint to the wall.



KSAS1013 kit (GREEN)

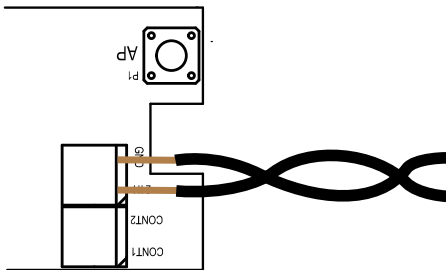


KSAS1013 kit (GREEN)



KSAS1032 kit (WHITE)

- drill a hole (diameter: 6,5 mm) on the detector base (A). If you are using the ANSGX, drill a hole on it as well (B).
- feed the cable in the hole, from the eyelet end. If you are using the ANSGX bracket or the SNDSGX swivel mount, feed the cable as illustrated above.
- fix a S4 dowel to the wall at a height of 1 cm from the hole
- fix the eyelet to the dowel
- fix the detector base (and also the bracket/swivel mount if this is the case) to the wall
- cut the wires to the required length



- connect the wires to the 24H terminals on board

6 STARTING THE DEVICE

6.1 First power up

- open the cover and position the battery as illustrated in the mounting procedure
- press and release 3-4 times Tamper button
- reset any discharged battery memory on control unit or compatible receiving device

! *If the battery is new or has not been used for long time, a wrong message of discharged battery may be displayed. Such problem depends on Lithium Thionyl Chloride battery chemical specifications and can be solved by carrying out the procedure illustrated above. If the battery has been exposed to low temperature, it is advisable to keep it at room temperature before installation.*

6.2 Device learning to NG-TRX control unit

Before starting learning procedure, remove the front cover (as illustrated in mounting procedure) to be able to access learn key P2.

! *Verify that the battery is charged otherwise the device will not be learnt.*

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 LEARN RADIO DET. option
- press **OK**
- use arrow keys to go to the zone to which learn the device
- press **OK**
- press key 1 (saved to control unit)
- go to the detector
- press and hold detector learn key (P2) for 3 seconds: the detector has entered learning mode when the device blue LED blinks twice and buzzer beeps twice
- in case of wrong learning procedure, the unit will not confirm the procedure, the detector will beep once to signal error and the device blue LED will remain OFF: restart the procedure
- in case of correct learning procedure, the unit buzzer will beep twice and the device blue LED will switch on for 1 second
- exit control unit setup menu. When required, press **OK** to save the setup

7 SETUP VIA BROWSERONE

The device can be set using BrowserOne v3.6.7 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
- select the grid row corresponding to the zone used to learn the device
- select tab **Radio Devices NG-TRX**

Zones	Areas	Outputs	Users	Telephone Dialler	System Options
07	Zone 7				NG-TRX Yes
08	Zone 8				NG-TRX Yes
General Assign Area/Sector Radio Devices Cable Devices Radio Devices NG-TRX					

7.1 NG-TRX options

This section allows setting some of NG-TRX detectors parameters.

For detailed information, please see programming manual of the control unit in use.

Buzzer activation Buzzer disabled ▾

Performance tuner Automatic ▾

Supervision interval 5 min ▾

Delay supervision anomaly

Tx Boost

▼ Buzzer activation

Enable device buzzer for alarm/reset.

▼ Performance tuner

Adjust balance between consumption and power used for data transmission.

▼ Supervision interval

Set time intervals for control unit data transmission in order to check device presence and proper working.

▼ Delay supervision anomaly

If enabled, the anomaly caused by lack of supervision will be signalled with a delay equal to 6 times the supervision time.

▼ Tx Boost

Option increasing transmission range (by 10÷30%, effective increase); it may affect battery lifetime at the same time.

7.2 GRIFO2K detector options

Use this section to set specific parameters of GRIFO2K device.

▼ Enable Led

If disabled, LED indicators will not blink in case of alarm/tamper (they will continue working in walk test or learning mode).

▼ Time inhibition

Time interval during which the detector will remain inhibited after an alarm transmission.

▼ Range

Detection range of the device (**Minimum** = 4 m; **Maximum** = 7 m).

▼ Sensitivity

Number of pulses to be detected before entering the alarm condition. **Normal**: 2 IR + 4 MW pulses; **maximum**: 1 IR + 2 MW pulses.

▼ Antidazzle

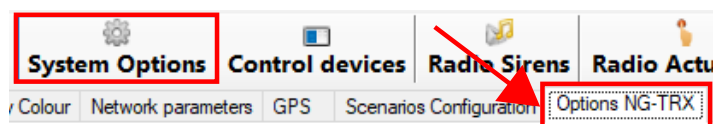
Enable/disable anti-blind function (default: disabled). If enabled, in case of blinding attempts, a fault event will be sent together with a tamper or alarm event according to options selected in drop-down menu **Antidazzle Echo**.

7.3 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. It will be sent to GRIFO2K at the first valid transmission and the device will beep to confirm the operation.*

8 OPERATING MODE

The detector detects motion inside the covered area.

8.1 Operating sequence

1. Stabilisation

After power on, the device takes around 25 s to stabilize.

2. Walk test

The device remains in walk test mode for 8 minutes.

The green LED blinks for each IR pulse received.

When IR section detects the number of IR pulses set, it enters pre-alarm mode for 5s.

If within this time interval the set number of MW pulses is counted (each signalled by the blue LED) the device will generate and send an alarm event, otherwise it will go back to standby mode.

After an alarm event is transmitted in walk test mode the

device will remain inhibited for 5 seconds.

3. Standard operating mode

When walk test is finished (8 minutes) the device enters operating mode.

Detection mode is the same as in walk test, except that pulses are not signalled and blue LED will switch on only when the general alarm is transmitted.

When operating, after an alarm transmission, the device will remain inhibited:

- for 5 s if the detector belongs to armed sectors (only for the first three alarms received inside an arming cycle);
- for the time set if the detector belongs to disarmed sectors (or starting from the fourth alarm received inside an arming cycle).

When in operation, there are two ways to restart walk test:

1. switching the detector off and on, waiting until it is stabilized
2. on control unit keypad, enter installer code and select **SYSTEM TEST > ZONES TEST**

8.2 Anti-blinding function

GRIFO2K features anti-blinding function.

The function detects blinding attempts made by placing a reflective body before the lens.

The function can be activated via BrowserOne.

When blinded, the detector will send a "fault" event together with an "alarm" or "tamper" event (according to selections in **Antidazzle Echo** drop-down menu).

! *If the option "fault + tamper" is selected, the blinding attempts detected will activate sirens too.*

! *We recommend to disable this function if the detector is installed in crowded places, with people passing at less than 20 cm distance.*

When the reflective body is removed, the standard operating mode will be restored.

8.3 LED indications

Condition		Green LED	Blue LED
Power on	Stabilisation	Fixed 25 s	Fixed 25 s
Walk test	IR pulse	Single blinking	
	MW pulse		Single blinking
	Pre-alarm IR	ON steady	
	Pre-alarm MW		ON steady
	Alarm transmission	ON 1.5 s	ON 1.5 s
	Blinding	Multiple blinking	

Condition		Green LED	Blue LED
Operating	Volumetric alarm transmission		ON
	Blinding	Multiple blinking	
	Tamper	ON 1.5 s	ON 1.5 s

9 MAINTENANCE



9.1 System test mode

To start this function, go to unit menu **SYSTEM TEST > ZONE TEST**.

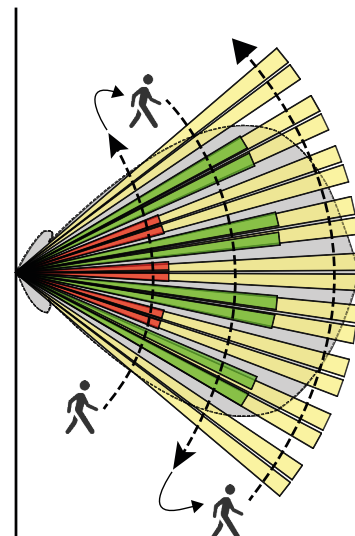
Device operating mode is the same as in walk test, except that device buzzer is activated upon any alarm.

The detector will pass to "detector test" mode only after the first correct transmission has been performed; it could take up to 5 min (default) from ZONES TEST start.

! *A long permanence in zones test mode may reduce battery lifetime.*

9.2 Periodic test

Carry out a simple test regularly to verify the functionality and the coverage limits of the detector.



- set the device in system test mode (see above)
- taking detector position as the point of reference, make half-circle movements from opposite directions to check coverage from both sides

Detector LED indicator shall respond as shown in the table LED indications.

9.3 Battery replacement

Replace the battery with a new one of the same type only. Follow this procedure:

- Open the housing (see mounting procedure).
- Remove battery connector. Remove discharged battery.
- Press and release 3-4 times Tamper button to discharge

any capacitor that may still be charged.

- position the new battery (see mounting procedure).
- Reset any discharged battery memory on control unit or compatible receiving device.

Discharged batteries shall be disposed of according to current laws and using specific containers.

Materials used are very harmful and polluting if dispersed in the environment.

EU DECLARATION OF CONFORMITY

Hereby, EL.MO. Spa declares that the radio equipment GRIFO2K 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.



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:

Indoor/outdoor wireless DT detector with volumetric protection 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 performed only 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 performed only 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



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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 authorized for battery collection. The materials used for this product are very harmful and polluting if dispersed in the environment.