



Best Innovative
Product 2014



GRAVITON

Invisible informer about breaking
windows and doors



destruction
of glass
ALS Detect



breaking
attempts



flap
position

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GRAVITON

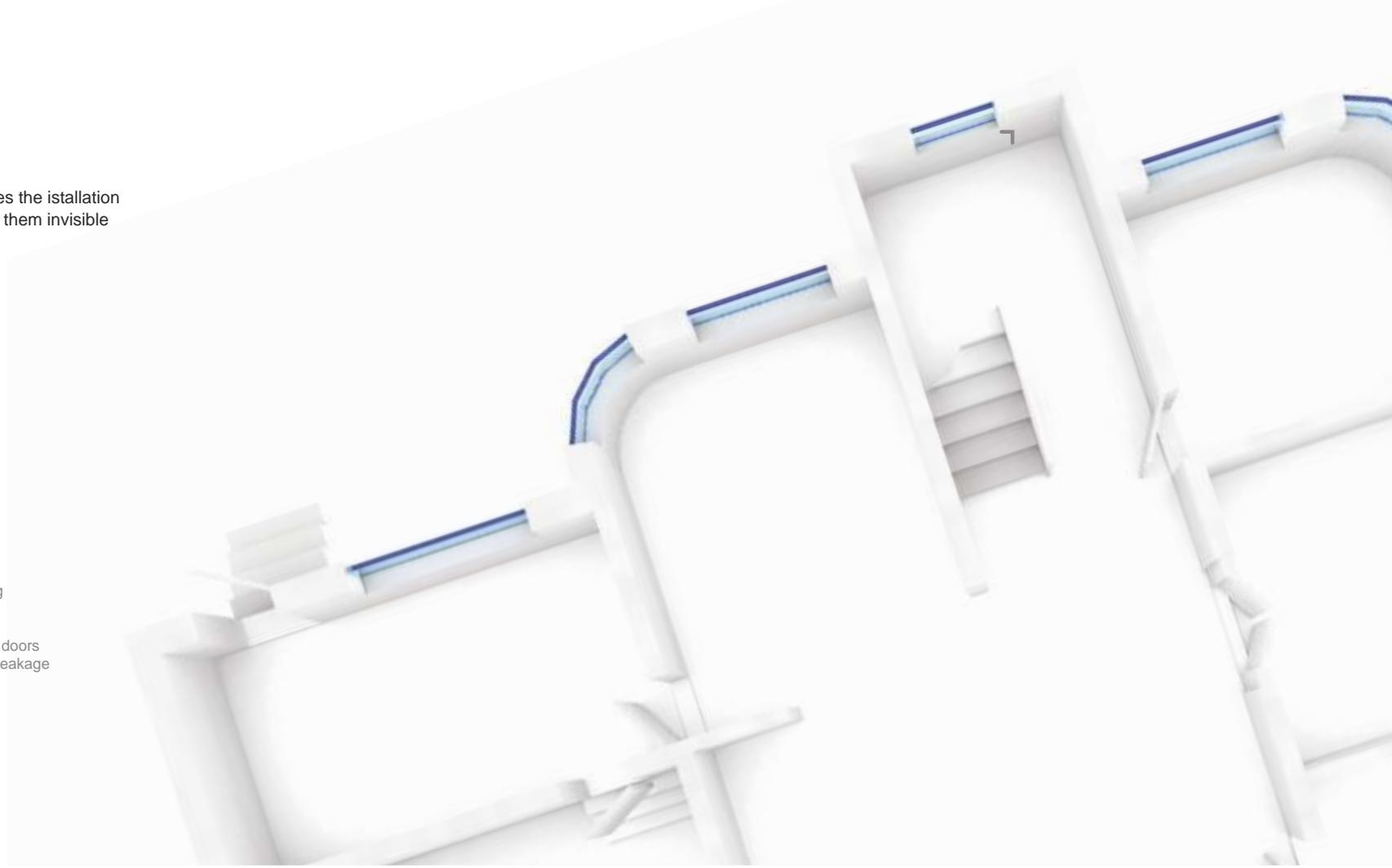
Simple solution

The use of GRAVITON simplifies the installation of security systems and makes them invisible



The main ways of intrusion are windows and doors that are placed at the perimeter of a building

To secure perimeter, sensors of position of windows and doors combined with detectors of glass breakage are commonly used.



GRAVITON combines the functions of glass breakage detector, vibrational and magnetic-contact informers. Simple installation instructions included.



GRAVITON in the lower part of a window



GRAVITON in the upper part of a door frame

GRAVITON

How it works

GRAVITON is a combined informer that controls several parameters simultaneously:



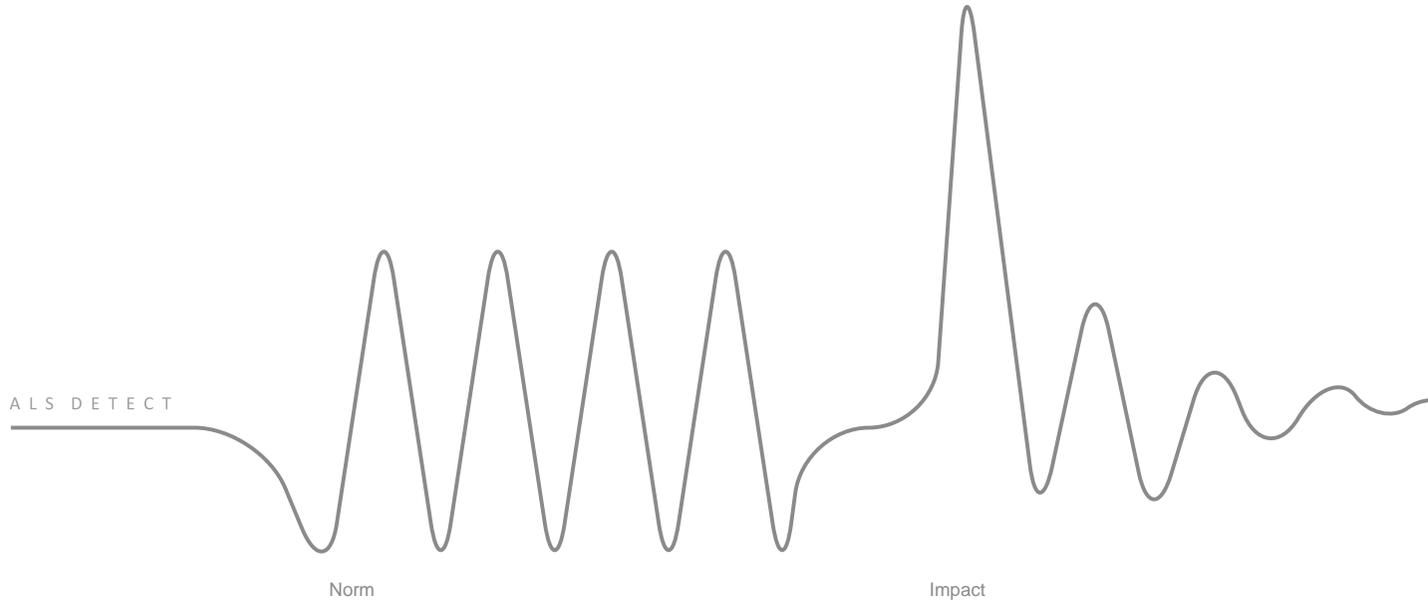
The destruction of a glazing is detected by the change in its own vibration frequency.

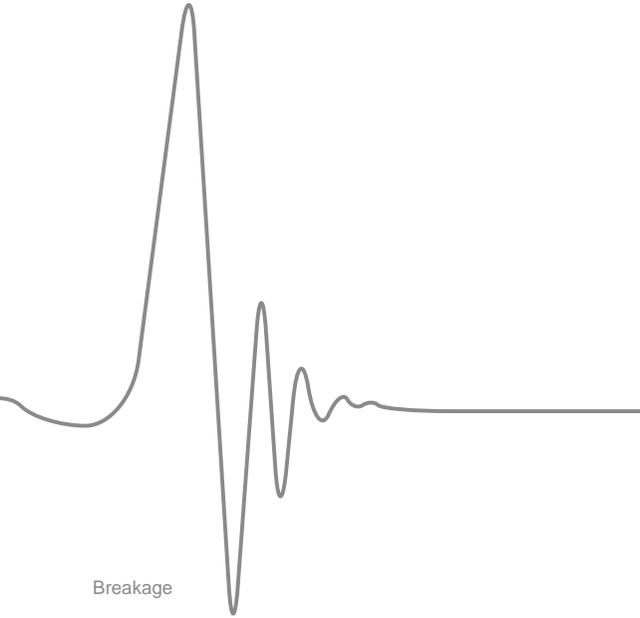
ALS Detect

First, the vibration frequency of glazing is recorded in automatic mode.

Then, in working mode, the informer compares arousing vibrations with recorded data.

When the glazing breaks, the frequency changes, and the informer reacts.





Break attempt is detected by the character of impact and its power.

In auto-tune mode, the maximum safe impact is recorded. Impact above that threshold, combined with other factors characteristic of a break attempt, make the informer react.



Flap position is controlled by the presence or absence of a magnetic field.

The magnet is installed on the flap. Special design provides easy installation into different types of windows and doors.

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Technical data

Power supply 9-15 V DC

Power used 10 mA

Voltage of output relay 100 V

Amperage of output relay 150 mA

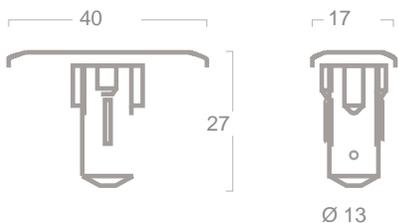
Resistance of output relay 8 Ohms

Use at temperatures – 35...+45°

Protection rating IP54

Weight with magnet 15 grams

Size

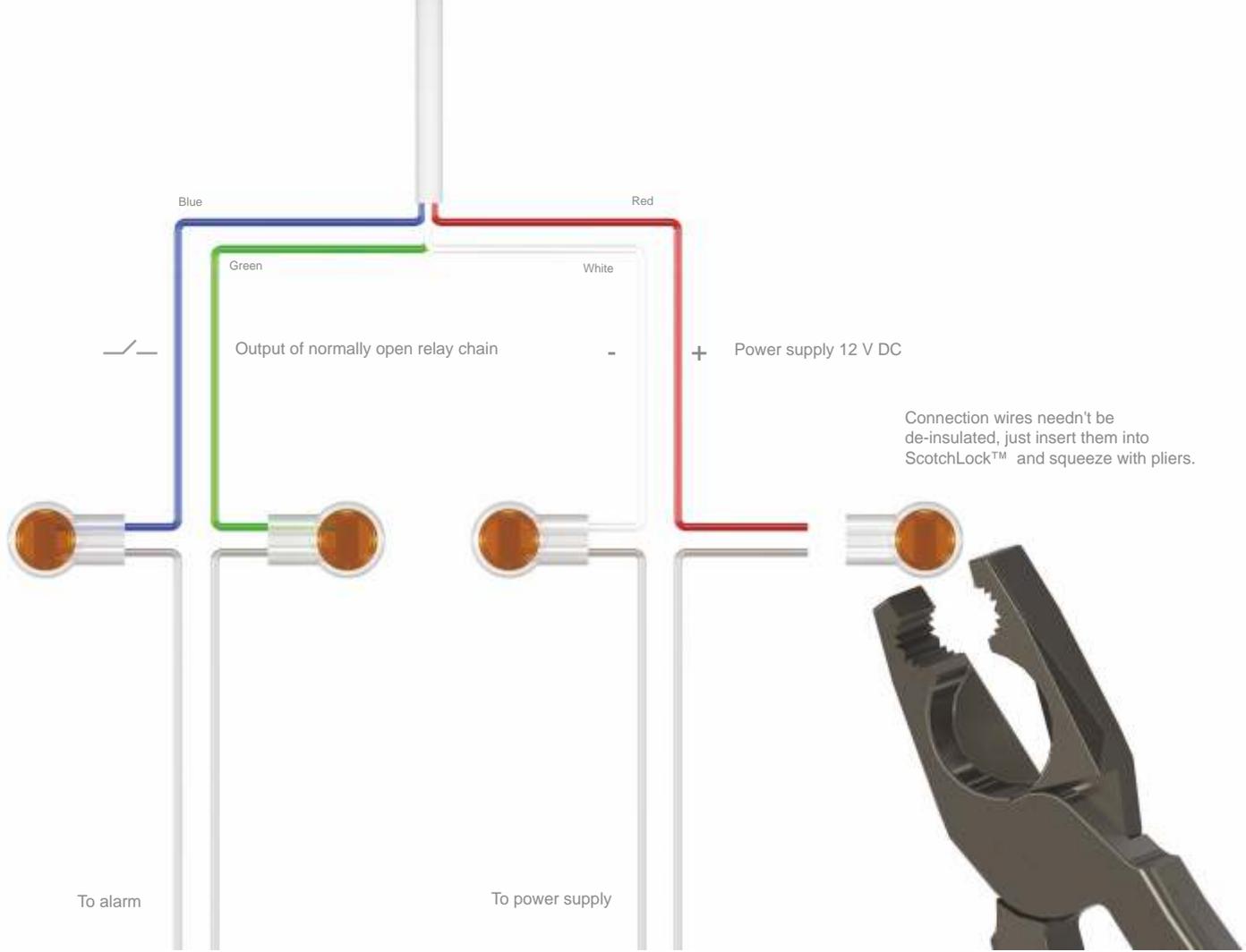


Power installation

The cable runs through a hole in the frame. Power supply and the alarm system are connected outside the window system.



To connect to alarm system disposable ScotchLock™ connectors are used, provided.



GRAVITON

Circuit design

The compact body of GRAVITON accommodates 18 microelectronic components that provide the vast capabilities of the informer.



GRAVITON is made in Russia from high quality components by world's leading manufacturers

Magnetic detector

Honeywell
Sensitivity 1,4 mV/G
-40...+100 °

Schottky diode

NXP
-55...+125 °

Solid state relay

Clare
Voltage 100 V
Amperage 150 mA
Resistance 8 Ohms
-40...+85 °

Flash microcontroller

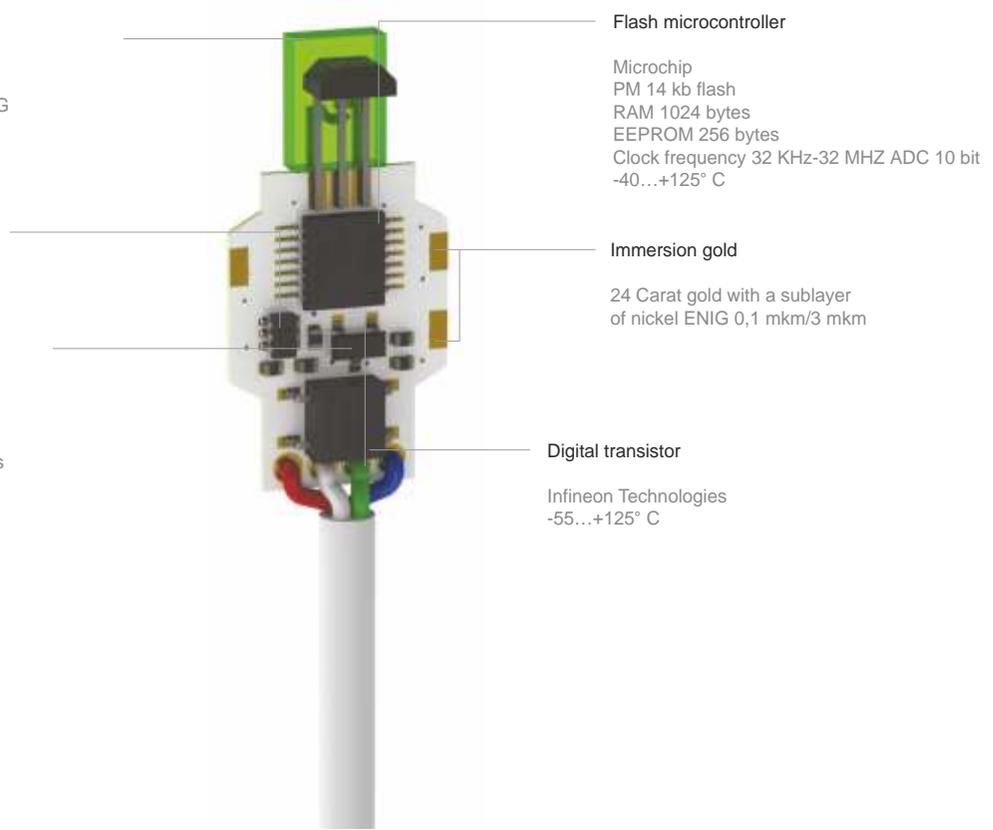
Microchip
PM 14 kb flash
RAM 1024 bytes
EEPROM 256 bytes
Clock frequency 32 KHz-32 MHz ADC 10 bit
-40...+125° C

Immersion gold

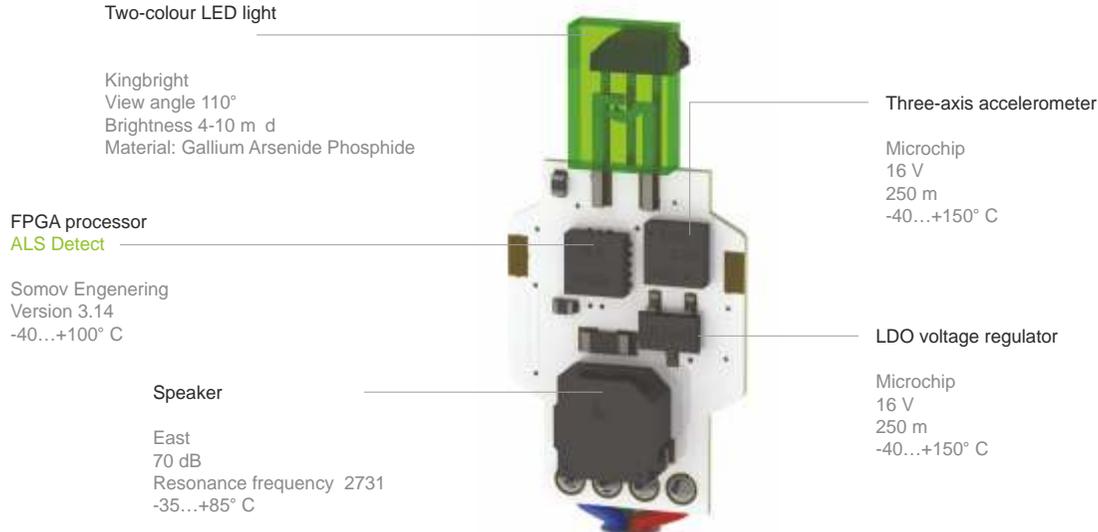
24 Carat gold with a sublayer of nickel ENIG 0,1 mkm/3 mkm

Digital transistor

Infineon Technologies
-55...+125° C



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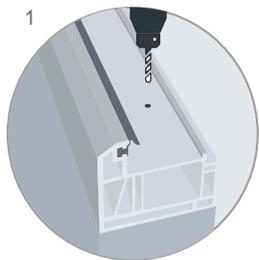
1st prize
Best innovative product 2014



MIPS is held from 1995 and is the biggest biggest international specialized security exhibition in Russia
“The Best Innovative Product” contest is traditional for MIPS and is aimed at finding the outstanding achievements in security industry.

GRAVITON

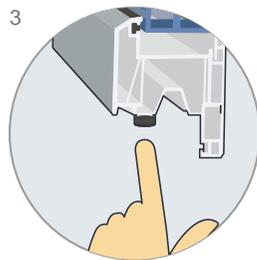
Installation and tuning



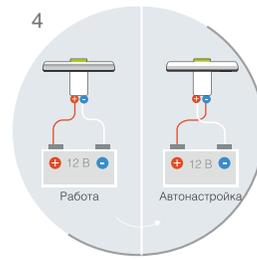
Drill a hole in a door frame,
diameter 13mm



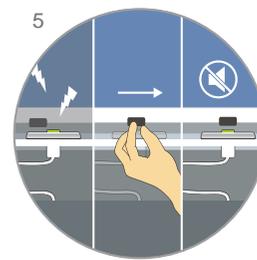
Push GRAVITON tenderly
into the hole



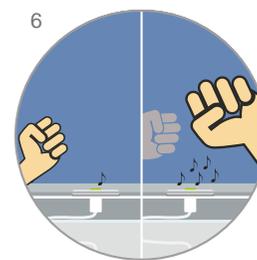
Attach mate magnet to the
door opposite the informer



Switch the informer to
auto-tuning mode
by connecting power in
reverse polarity



Using the sound signal check
and, of needed, adjust
the position of mate magnet



Hit the construction to set
the alarm threshold

Technology of secret installation

Drill a hole in a door frame, diameter 13mm. Push GRAVITON tenderly into the hole (1, 2). Attach mate magnet to the door flap opposite the informer (3).

It is important that informer and mate magnet be coaxial.

Adjust if necessary using sound signal as a guide.

Informer should be placed on the inner side of the frame.

Informer is placed in lower part of a window and upper part of a door.

Automatic tuning

Automatic tuning is necessary for the device to record and store data about the construction parameters.

To switch the informer to auto-tuning mode, connect power supply in reverse polarity (4). You will hear three beeps doubled with three flashes of light.

After that the device will produce a constant signal that will change significantly when the door is closed (adjust mate magnet if necessary). If the mate magnet is placed correctly, in two seconds after the door is closed, the signal will stop.

To set the alarm threshold hit the construction. The device will produce 1 to 16 beeps (depending on the strength of the test hit) and store it in its memory.

If you need to reset the threshold, hit the construction again.

If your modification supports ALS Detect technology that allows to control the wholeness of the glazing, you will have to make several test hits after the threshold is set, to let the device learn the construction's own frequency.

After a hit there is low-frequency rube inside the construction, so the more tuning hits you make, the more the informer will be protected from false alarms.

Once the settings are done and the power is connected in straight polarity, the device stores the last entered data and enters working mode.

If everything is done correctly, you will hear two beeps.

	GRAVITON	Magnetic informer	Breakage detector	Passive IR	Vibration informer
Opening of flap	●	●			
Detection of breakage	●		●		
Detection of brake and intrusion attempts	●			●	●
No limitations to people and animal at the object	●	●			
Protected from acoustic noise	●	●		●	●
Temperature change proof	●	●	●		●
Invisible	●	●			



GRAVITON is a new generation invisible security informer that controls intrusion through windows and doors

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