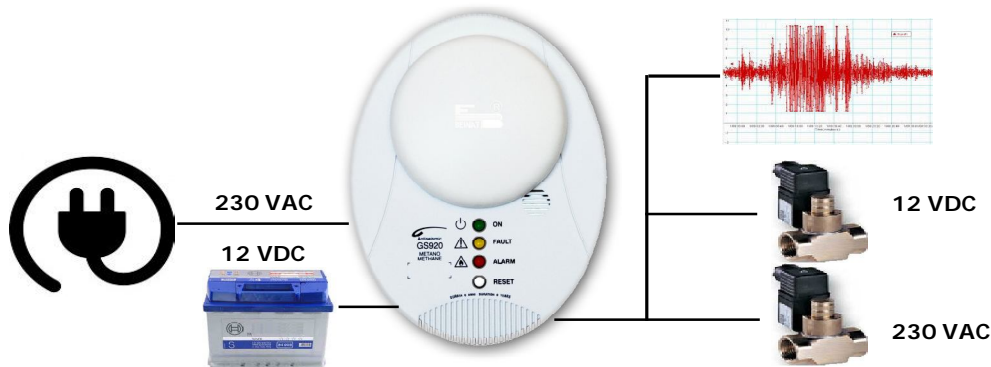


## Gas Detector with Seismic Device

GS920 - v. 3

To protect your family



The **GS920** is a high-tech technical device thanks to the innovation of "**Seismic detection**" and the ability to select the "**Intrinsic Safety control**".

To built this complete, highly flexible control system, we relied on a microprocessor which, combined with the **Catalytic** sensor technology, detects the explosive gases such as **METHANE** and **LPG** with an intervention threshold set at 10% of the **L.E.L.**

Through the built-in relay, the **GS920** can active solenoid valves, sirens and any other alarm signaling device.

Through a micro switch it is possible to choose between an impulse mode of the relay to connect solenoid valves with manual reset and continuous mode, to operate normally closed solenoid valves in class "A", and sirens.

With another microswitch, it is possible to enable or disable the "**Positive Safety**".

The power supply unit allows you to enable a manual reset solenoid valve with a 12 VDC coil, without the need of a buffer battery.

With the "**Seismic Control**", the solenoid valve is closed if necessary, effectively stopping the gas at the origin. This control is vital in seismic areas

The technical scheme is completed by the special "Control Circuit of the degree of efficiency" of the catalytic sensor, which promptly signals any possible fault

These technical features make the detector ideal for civil environment safety according to EUROPEAN STANDARD.



**Important:** Assembly / maintenance of the appliance must be carried out by qualified personnel and in accordance with applicable laws and regulations.

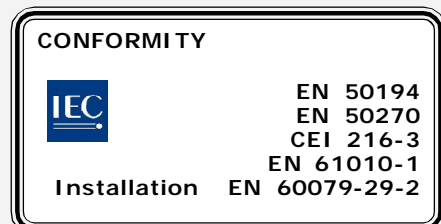
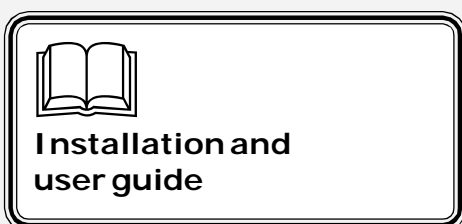
The manufacturer assumes no responsibility for the use of products that have to comply with particular environmental and / or installation standards.



### Important note

Before connecting the equipment, it is recommended that you read the instruction manual carefully and keep it for future reference. It is also recommended to perform the electrical connections correctly as per enclosed drawings, observing the instructions and the Standards.

**N.B. Refer to the documentation in all cases where the symbol is on the side**



## Precautions

**CHECK** the integrity of the detector after having removed it from the box.  
Check that the data written on the box correspond to the type of gas used.  
When doing the electrical connections, follow the drawing closely.

Any use of the detector for purposes other than the intended one is considered improper, and as a result of which **BEINAT S.r.l.** therefore disclaims any responsibility for possible damages caused to people, animals or objects.

**TERMS and EXPECTATIONS:** The installation of the detector, its ordinary and extraordinary maintenance, and its out of service removal at the end of the functional life guaranteed by the manufacturer, must be carried out by **authorized and/or specialized personnel.**

To use your gas detector for a long time and with satisfaction, use it with the following precautions in mind.

**Do not wet it.**

The detector is not waterproof if immersed in water or exposed to high humidity can be seriously damaged.

**Do not drop it.**

Heavy knocks or falls during transportation or installation can damage the appliance.

Avoid abrupt temperature fluctuations.

Sudden temperature variations can cause condensation and the probe could work poorly.

**Cleaning**

Never clean the device with chemical products. If necessary, wash with a moist cloth.

Absolutely avoid using any cloth dipped in thinners, alcohol and chemical detergents.

## MAINTENANCE

The user periodically (every 6 months) must perform a check of the operation of the control unit by spraying a suitable test gas at the base of the probes connected until the alarm condition is reached.

- At least once a year make a more accurate check by a specialist technician.
- Disposal of the detector must be carried out by qualified personnel.

## Technical features

Mains power .....	<b>230/240 VAC 50/60 Hz +/- 10%</b>
Battery power (optional).....	<b>12 V. dc <math>\pm</math> 10%</b>
Current consumption .....	3.6W @ 230V
Range of relay contact switching .....	10A 250V resistive
Battery charger .....	controlled by the microprocessor
Type of insulation .....	Classe <input type="checkbox"/>
Type of gas detected: .....	<b>Methane</b> with model for Natural Gas <b>LPG</b> with model for LPG
Explosive gas sensor .....	Catalytic
Explosive gas detector alarm threshold .....	At 10% of L.E.L.
Sensor's faults detected by Fault Circuit .....	Interruption, short circuit, or wear
Detection capsule end-of-life warning .....	After 6 years
<b>Positive safety</b> control .....	Built in
Timed or continuous functioning solenoid valve selection .....	Using a switch
Earthquake-proof sensor .....	Three-axis accelerometer
Trigger sensitivity .....	6th degree on the Mercalli scale
Audible and visual signal alarm by .....	LED diode and buzzer
Test phase duration .....	60 seconds
Functioning temperature .....	-10°C to +40°C
Functioning humidity .....	0÷90% RH non condensed
External degree of protection .....	IP42
Mounting .....	External wall mount, or embedded box 503
Body material .....	ABS self-extinguishing
Dimensions .....	115x150x52
Electromagnetic Compatibility CE Reference legislation .....	<b>EN 50270</b>

### Functional Features Of Gas Sensors

The installation of the GS920 detector, its ordinary and extraordinary maintenance, and its out of service removal at

the end of the functional life guaranteed by the manufacturer, must be carried out by authorized and/or specialized personnel.

The CATALYTIC technology sensor duration is guaranteed for **6 years** (in clean air).

The detector's functioning temperature ranges from **-10°C to + 40°C.**

**WARNING!**

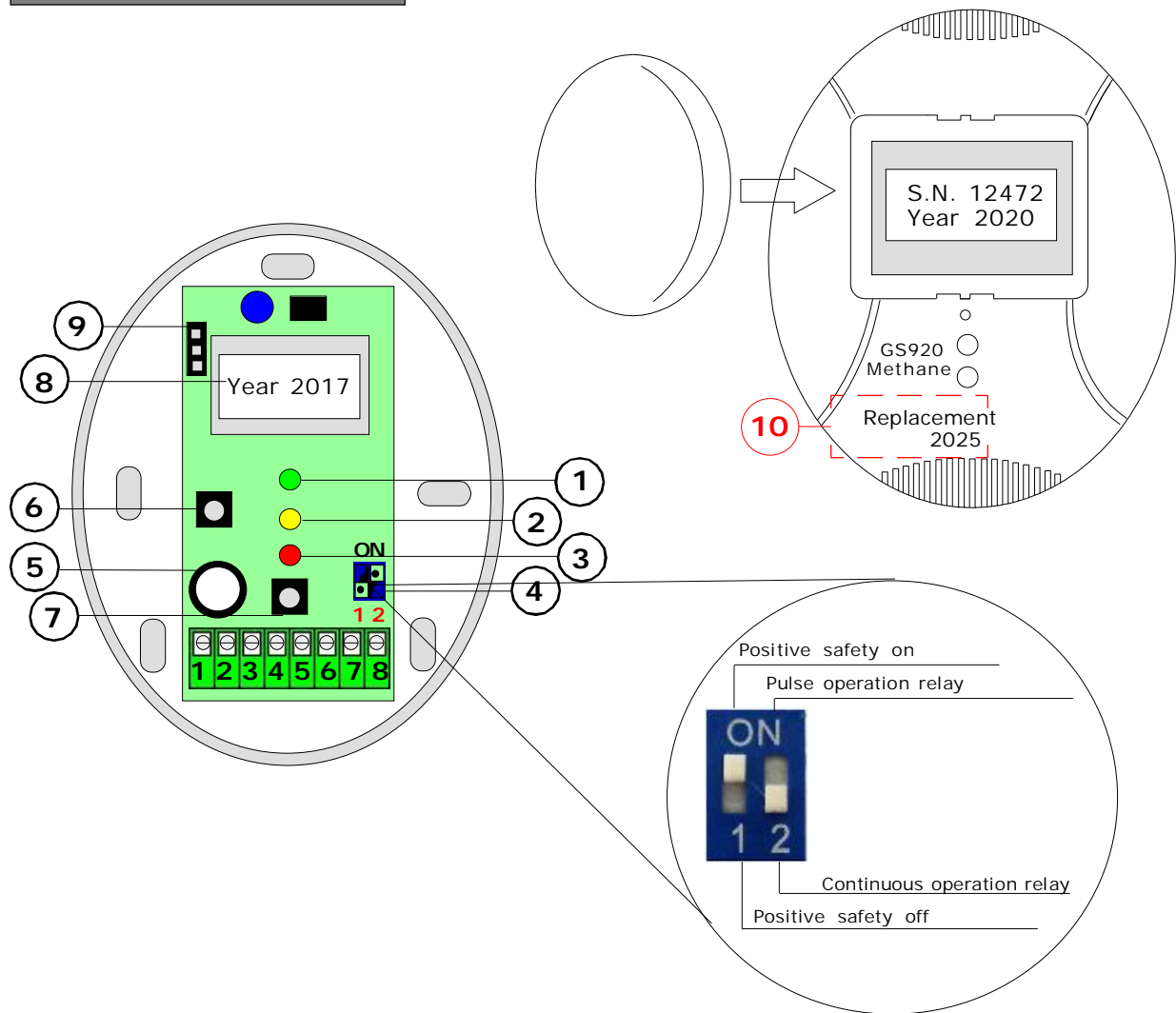
The CATALYTIC probe does not tolerate a gas detection exceeding 100% of L.E.L., with consequent natural death of the sensor.

Each immediate puff of gas that exceeds **100% of L.E.L.** takes away months of life from the sensor.

The detector must be tested by simulating the presence of gas by issuing it from a pre-calibrated testing aerosol.

A common cigarette lighter near the sensor does not guarantee excellent functioning.

## Components and commands



**1) Green LED on.** When flashes, the GS920 performs a test of the sensor's efficiency status, and gets it to the functioning temperature. This phase lasts 60 seconds and stop flashing so the GS920 is ready to detect. "During the first 10 days from the last reset (or power fault) the green LED will turn off at regular intervals to signal the seismic auto-learning phase.

**2) Yellow LED, FAULT and functional life wear indication** "If this LED turns on, it means that the gas detection catalytic sensor is not working efficiently and must be replaced by an "authorized technician. The blinking of this LED indicates that the GS920 has detected a vibration.

**3) Red ALARM signaling LED.** This LED lights up when the amount of gas dispersed in the environment exceeds the danger threshold, 10% of the L.E.L.

**4) Microswitches group:**

**Switch 1:** switch **ON** - **Positive Safety Function**; the relay will be energized at the end of the latency time and will switch at each alarm.

Switch **OFF** - **Normal Function**, the relay switches at each alarm.

**Switch 2:** switch **ON**, the relay will operate in pulses, each pulse has a duration of about 30 seconds. "Switch **OFF**, the relay will work continuously, until the gas threshold falls below the danger threshold.

**5) Catalytic sensor for explosive Methane or LPG gas detection.**

**6) TEST button.** This button is used to simulate a gas leak after installation.

**7) RESET button.** This button is used to stop the alarm when it is triggered by a SEISMIC event

**8) Identification label,** serial number and manufacture date are located under the ABS dome

**9) TEST POINT for testing.** It is used in the laboratory or by an authorized technician.

**10) Expiry date label of the gas detector.**

**This label must be applied by the technician during installation,** bearing in mind that the detector must be overhauled after 5 years

**The installation of the detector does not exempt from ...** The compliance with all regulations concerning the characteristics, installation and use of gas appliances. The ventilation of the spaces and the elimination of combustion products are described in the UNI norms according to ART. 3 LAW 1083 / 71 and relevant legal provisions.

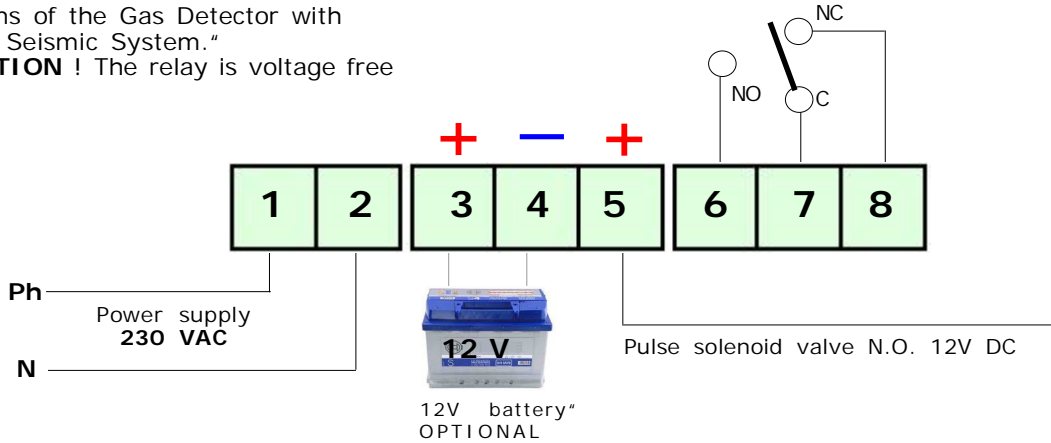
## Electrical connections



### WARNING

Before connecting to the mains power, ensure the voltage is correct. Carefully follow the instructions and the connections according to Regulations in force. An automatic disconnecting switch (appropriately identified as the detector sectioning device) must be incorporated in the electrical system, suitably located and easily accessible.

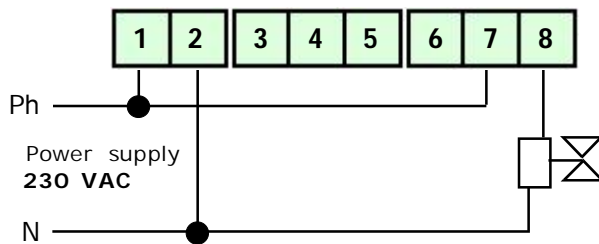
Diagrams of the Gas Detector with GS920 Seismic System.  
**ATTENTION !** The relay is voltage free



### Connection of an N.C. solenoid valve 230VAC with and without Positive Safety

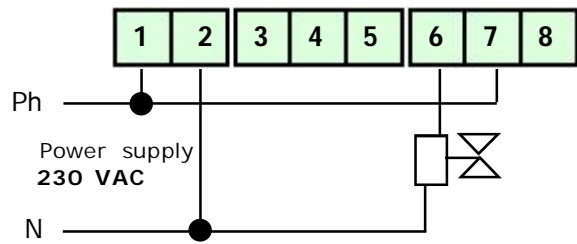
#### Without Positive safety

The solenoid valve drawn is an **NC**. Automatic or Manual  
 To connect a **NO** solenoid valve, change the connection from 8 to 6

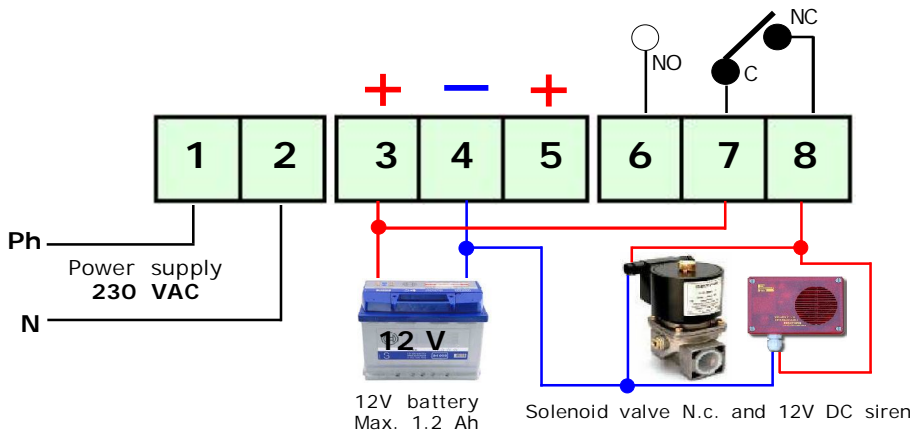


#### With Positive safety

The solenoid valve drawn is an **NC**. Automatic or Manual  
**ATTENTION !** "A solenoid valve cannot be connected" Normally open



230 VAC power supply with N.C. Solenoid valve connection. powered at 12 VDC using a battery; Positive safety off.

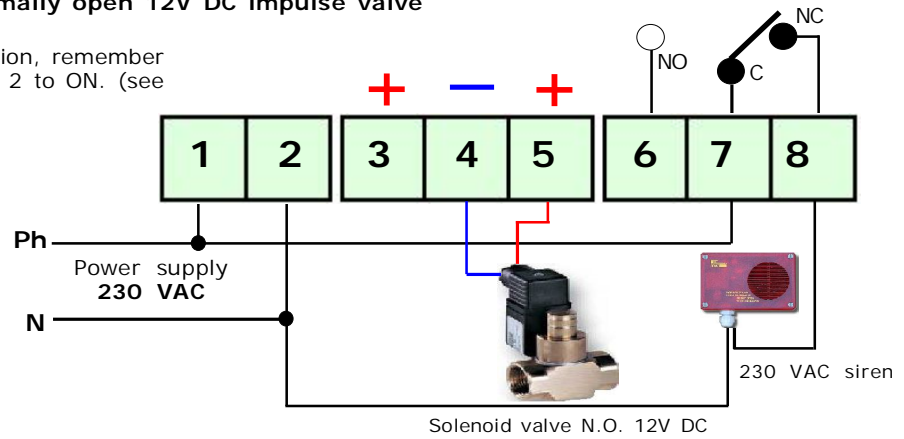


## Electrical connections

### Connection with a normally open 12V DC impulse valve

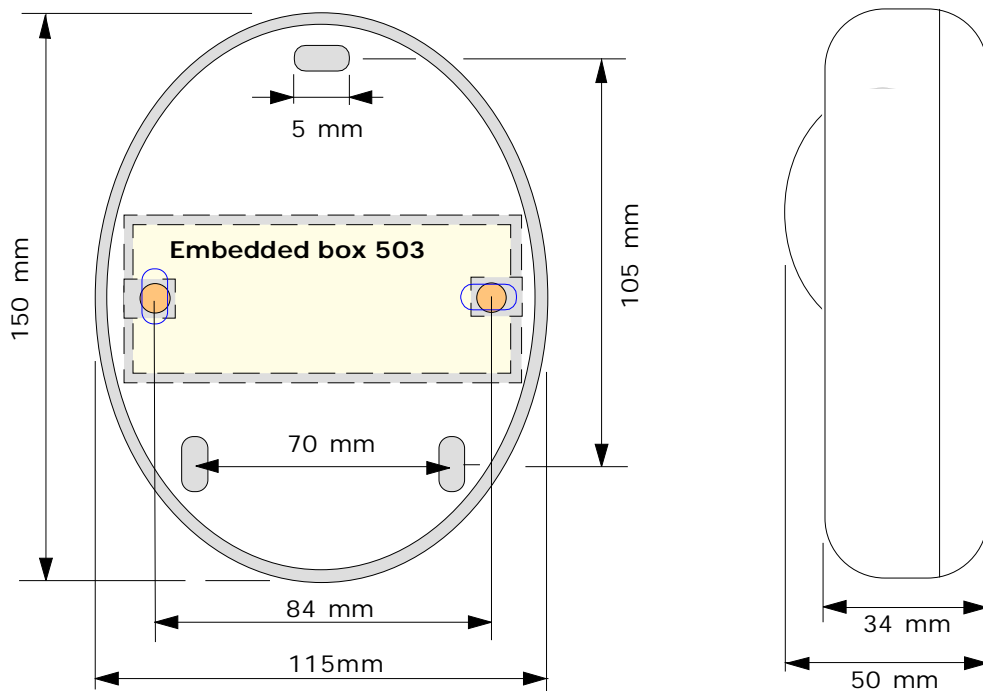
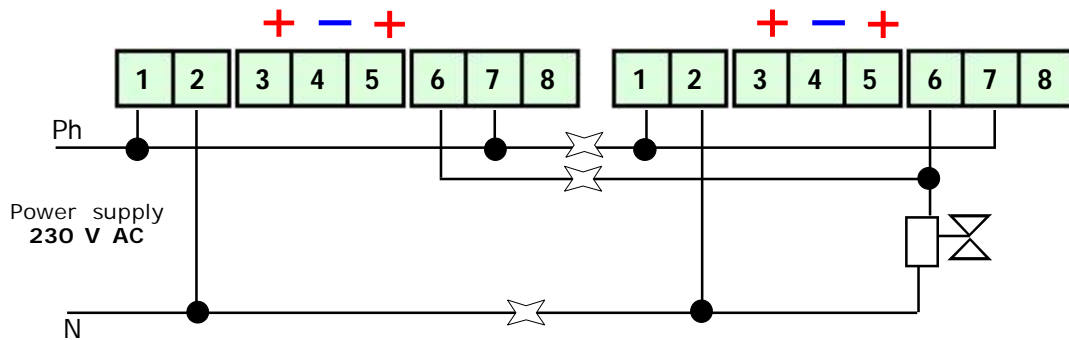
#### ATTENTION !!

When making the connection, remember to move the micro Switch 2 to ON. (see page 4)



### Connection of 2 or more Gas Detectors in Parallel Without Positive Safety

The solenoid valve in the drawing is a Normally Open with Manual Reset powered at 230 VAC.



The GS920 is suitable for mounting externally on a wall

At the time of installation it is good to use the normal diligence that an electronic equipment requires, Therefore:

- Install the detector away from excessive heat sources.
- Prevent liquids from coming into contact with the detector, remembering that the external structure has an IP42 degree of protection.

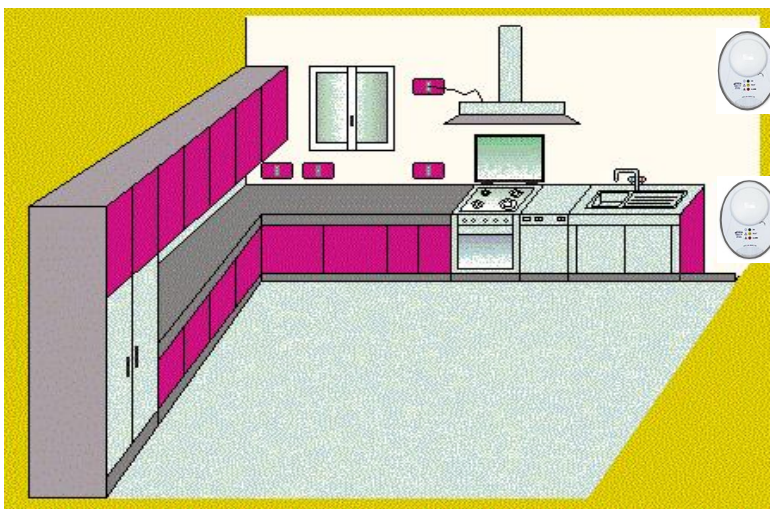
**Must not be installed:**

- 1) behind barriers that hinder the prompt gas detection.
- 2) near aspirators or fans.
- 3) do not install the detectors near: washcloths, air vents, heating or air conditioning devices, windows or ventilation devices.
- 4) must not be installed in closed spaces such as: behind a curtain or inside a wardrobe.
- 5) in environments where the temperature is between -10 ° C. and + 40 ° C.

The detector is designed to detect different types of gas and according to these it must be positioned at different heights.

These heights are:

- 30 cm. from the lowest point of the floor to detect **heavy gases (G.P.L. etc.)**
- 30 cm. from the highest point of the ceiling to detect **light gases (Methane etc.)**
- Install the detector 1m to 4m from gas appliances



**Methane gas**  
max. 30 cm from the ceiling

**LPG gas**  
max. 30 cm from the floor



The GS920 seismic detector  
It must not be installed on a  
plasterboard wall.  
It must only be installed on masonry  
walls

**Turn on and testing**

After switching on the power, the **Green LED** starts flashing for about 60 seconds, after this time, the LED stays on steadily, now **GS920** is ready to detect **gas only**.

**After 24 hours** from installation, the device begins to perform seismic auto-learning;  
**The detector must NOT be moved from the installation site for any reason, GS920** is recording all movements and noises of the installation site.  
**The duration of the registration lasts 11 days.**

**N.B.** Operation, gas detection after 60 seconds, seismic detection after 11 days.

**Testing**

Press the **button** next to the detector capsule to simulate a gas leak, the **ALARM LED** lights up and the relay changes its working status after 5 seconds.

Once the alarm is over, the LED goes off, the buzzer stops and the connected devices are deactivated.

To complete the general test, emit gas from a pre-calibrated gas spray within 10% of L.E.L.. Testing with a common cigarette lighter could damage the sensor.

It is advisable to perform this test at least once a year.

**IMPORTANT:** the detector operation test must not be carried out with the gas valve open,

- 1) because it is **very dangerous** to do this test.
- 2) because it is not possible to calculate how many liters of gas are released into the environment, to activate the general alarm.

## Effects of the Mercalli scale

### MMdegree Accel (cm/s<sup>2</sup>)

1	1	Not perceived, except by a few people in particularly favorable circumstances.
2	2	Perceived by people resting on the upper floors of houses or in favorable.
3	3	Perceived in homes. Swinging of hanging objects. Vibration as when passing light trucks. Estimated duration. Sometimes not recognized as an earthquake.
4	15-20	Swinging of hanging objects. Vibrations such as when heavy trucks pass or jolts such as a heavy ball hitting walls. Oscillation of stationary vehicles. Movements of dishes, doors and windows. Clink of glasses. Vibrations of crockery. In its upper stage, the creaking of wooden walls and structures.
5	30-40	Resentful to the outside; management estimate. Wake up of sleeping people. Movement of the surface of liquids, spillage of some from containers. Moving or overturning of small unstable objects. Swing of doors that open and close. Movement of window shutters and cadres. Stopping, starting, changing the pitch of grandfather clocks.
6	60-70	Heard by everyone. Fright, escape to the outside. Stagger of people on motorcycles. <b>DETECTOR TRIGGERED</b> Breakage of display cases, dishes, glassware. Trinkets, books, etc. fell off the shelves, and paintings from the walls. Moving or overturning furniture. Cracks in weak plaster and type D' masonry. Ringing of bells (churches, schools).
7	100-150	Difficult to stand upright. Resented by vehicle drivers. Flickering of hanging objects. Breakage of furniture. Damage to type D' masonry, including cracks. Breakage of weak chimneys located on the ridge of the roofs. Fall of plaster, bricks, stones, tiles, cornices (also of isolated parapets and architectural ornaments). Some damage to the masonry type C*. Formation of waves on the water mirrors, clouding of the water. Small landslides and excavations in sand and gravel deposits. Loud ringing of bells. Damage to lined irrigation channels.
8	250-300	Resentful in driving vehicles. Damage to walls type C*, partial collapses. Some damage to masonry type B*, not type A*. Fall of stucco and some masonry walls. Rotation and fall of chimneys, industrial chimneys, monuments, towers, elevated tanks. Constructions with timber structures removed from the foundations if not bolted; wall panels thrown out. Breakage of deteriorated palisades. Breaking tree branches. Variations in flow or temperature of springs and wells. Cracks in the ground and on steep slopes.
9	500-550	General panic. Destruction of type D masonry, severe damage to type C masonry sometimes with complete collapse; serious damage to type B masonry; general damage to foundations; timber structures released from foundations if not bolted; timber structures tested. Serious damage to the tanks. Rupture of underground pipes. Relevant crevasses in the ground. In alluvial areas expulsion of sand and mud, formation of sand craters.
10	>600	Destruction of most of the masonry and timber structures, with their foundations. Destruction of some robust wooden structures, with their foundations. Destruction of some sturdy wooden structures and bridges. Serious damage to dams, bridges, embankments. Large landslides. Dewatering of canals, rivers, lakes, etc. Horizontal translation of sands and clays on beaches and flat regions. Weakly deflected rails.
11	---	Heavily deflected rails. Underground pipes completely out of service.
12	----	Almost total destruction. Displacement of large rock masses. Deformed reference lines. Objects thrown into the air.

## Before calling a technician, check ...

### - If the appliance does not turn on.

Check that the 230 VAC voltage is present at the ends of the connection terminals. "If battery powered, 12 VDC voltage is present, and see that the battery is charged.

### - If the Fault LED lights up.

If **YELLOW LED** lights continuously, check that the installation date has not exceeded six years.

If **YELLOW LED** flashes, check that the anti-seismic sensor has not tripped. "To reset the seismic sensor, simply press the reset button.

### - If the detector goes into alarm repeatedly.

Check for gas leaks.

Check that, together with the alarm signal, the **FAULT** light does not turn on, in this case proceed as described in the previous paragraph.

### - If the detector goes into alarm and does not close the connected equipment.

Check that the connections are correct, and that the jumper that brings voltage to the relay common has been made, **all relays are voltage free**. Check the connection drawing

### - If a 12 VDC solenoid valve is connected to the detector and it does not work well

Check that there are no drops in the power supply voltage.

It's cannot be directly connected to the **GS920** detector 12 VDC solenoid valves or sirens with an absorption **greater than 300mA**.

A battery must be used to connect a solenoid valve with higher absorption. "A 12 VDC impulse operated manual reset solenoid valve can be directly connected to the detector.

### Do not tamper with the detector.

In order not to cause the device to unbalance, and electric shocks.

If other problems arise, it is necessary to call a specialised and/or authorised technician and/or the **Distributor** of **BEINAT S.r.l.** should be contacted directly.

## ATTENTION ! operations to be carried out in the event of an alarm

- 1) Put out all open flames, including smoking materials
- 2) Put out all free flames.
- 3) Close the main gas tap or the LPG cylinder.
- 4) Do not turn lights on or off; do not operate electrically powered appliances or devices
- 5) Open doors and windows to increase the ventilation of the environment.



If the alarm ceases, it is necessary to identify the cause and take action accordingly.

If the alarm continues and the cause cannot be identified or eliminated, leave the property and, from the outside, notify the emergency services (fire fighters, distributors, etc.).



**INSURANCE.** This device is insured by the SOCIETÀ REALE MUTUA for the PRODUCT'S GENERAL LIABILITY up to a maximum of 1,500,000.00 EURO against damages caused by the device in case of failures in functioning.

**WARRANTY.** The warranty term is 3 years from manufacturing date, in agreement with the following conditions. The components acknowledged as faulty will be replaced free of charge, excluding the replacement of plastic or aluminium cases, bags, packing, batteries and technical reports.

The device must arrive free of shipment charges to **BEINAT S.r.l.**

Defects caused by unauthorized personnel tampering, incorrect installation and negligence resulting from phenomena outside normal functioning shall be excluded from the warranty.

**BEINAT S.r.l.** is not liable for possible damage, direct or indirect, to people, animals, or things; from product faults and from its enforced suspension of use.



**DISPOSAL OF OLD ELECTRICAL & ELECTRONIC EQUIPMENT.**

This symbol on the product or its packaging to indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment, such as for example:

- sales points, in case you buy a new and similar product
- local collection points (waste collection center, local recycling center, etc...)

By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

**Attention:** In some countries of the European Union, the product is not included in the field of application of the National Law that applies the European Directive 2002/96/EC and therefore these countries have no obligation to carry out a separate collection at the "end of life" of the product.



**Detector GS920** *Lo styling è della b & b design*

Dealer Stamp

Purchase Date: .....

Registration Number : .....

Beinat S.r.l. following the targhet to improve its products, reserves the right to modify the technical features, aesthetic and functional any time without prior notice..

**BEINAT S.r.l.**  
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