



**GAS LEAK ALARM:** Model: GLA - D

LPG (Propane, Butane), Domestic gas (Methane, Biogas), Hydrogen, Exhaust/Smoke, CO<sub>2</sub>, Anaesthetic Gas

- Triple life, up to 15 years
- No electricity, charger or battery change
- Unique, simple and safe self-testing

**USER MANUAL:** Version 2021-01

### **WARNING:**

Never use combustible gas concentration for testing!



Read the latest version of the manual in its entirety before using the product.  
Check for updates and corrections at the iSens website.  
Keep this manual for later use.



Do not dispose of the product in household waste.  
Submit electronic products and plastics for recycling.

### **RoHS**

Electronics and parts are manufactured in accordance with the RoHS directive  
The directive prohibits lead and other environmentally hazardous substances.



ABS



PVC

The alarm is made of ABS  
The packaging is made of PVC



This product is designed to comply with EN50194-2.  
The standard describes all requirements and tests performed for this product.

Norwegian product manufactured in Poland for iSens AS – [www.iSens.no](http://www.iSens.no)

## **1. WARRANTY**

iSens only wants satisfied customers. The GLA is therefore supplied with a one-year warranty from the date of purchase. The GLA may have the same lifetime as the energy source, however, its lifetime may be reduced depending on outer environment, use, alarm time, etc. A single alarm may completely deplete the energy source. See technical data. This product is therefore a disposable consumable product with a 0–15-year lifetime.

The warranty only covers material defects and malfunction related to manufacturing, and only if the product has been used and maintained correctly. The warranty only applies if the product has not been opened, attempted opened or repaired by the customer. The warranty does not cover visible external / internal damage or energy depletion. When using the warranty, the GLA must be submitted to the reseller in its original packaging along with the original receipt. iSens' liability is limited to repairing the product. Alternatively, iSens may replace the GLA with a new device (which may be a newer model) or refund the original selling price.

iSens is not liable for any damages or losses arising from the GLA not functioning. iSens is not liable for losses or injuries, material or other damages due to gas leaks, fire or explosions. iSens' liability is limited to the purchase value of the product. The GLA does in no way replace or fulfill recommended or mandatory safety measures for gas leaks, fire or explosions in accordance with current laws and regulations. The GLA is not type approved as a smoke detector. The GLA does not fulfill or replace any form of insurance. Also read about automatic calibration in the safety chapter. The GLA only provides an additional, optional contribution to increased safety.

In the event that the buyer disagrees with these warranty provisions, the GLA must be returned before use in the original packaging, immediately and within the cancellation period, which is normally up to 14 days for online purchases.

## **2. DESCRIPTION**

The GLA contains a new Norwegian patented technology. The technology enables the detection of several different gases by the same sensor. The sensor can therefore be tested in a unique, simple and safe way using breathing air (carbon dioxide). Self-testing creates the greatest safety. The new technology has a self-purifying effect enabling up to 3 times the lifetime of other alarms (optical and electrochemical). The electronics are designed to achieve ultra-low energy consumption. The GLA will therefore be able to function continuously for a total of 15 years without battery change, power supply, adapters or chargers. This saves the environment and provides safe alerts even in the event of a power failure. The GLA is ideal for the home, cabin, camping, and boat.

LPG gas (propane, butane) is heavy and stored in tanks. Gas may leak from a gas fireplace, barbecue, cooker, gas stove, and other appliances. The gas can ignite when the concentration exceeds the LEL (Lower Explosion Limit). The GLA goes off well before this happens at 10–15 % of the LEL.

Domestic gas, or Household/Town gas, (methane, natural, biogas) is light and distributed into homes via a pipe system. The gas may leak from pipes, hot water tanks, kitchen stoves and heaters. The gas can ignite when the concentration exceeds the LEL (Lower Explosion Limit). The GLA goes off well before this happens at 10–15 % of the LEL.

Hydrogen is a light gas that will be used in many applications in the future. The GLA goes off well before the gas concentration from a leakage reach LEL at 10–15 % of the LEL.

Exhaust and smoke may come from engines, heaters, fireplaces, and fires. The GLA alerts of carbon dioxide CO<sub>2</sub> already at 5000 ppm. This corresponds to a normal 25 ppm of toxic carbon monoxide CO in exhaust from a diesel engine/heater. Less from open heat and fire. The Norwegian exposure threshold limits are 5000 ppm of CO<sub>2</sub> and 25 ppm of CO in order to avoid impaired performance and health. The GLA alerts when these limits are exceeded. The GLA is not approved as a fire/smoke detector for fire safety in private residences, but will provide additional safety including in case of a main power failure.

Carbon dioxide is produced by humans, animals, plants, fireplaces, gas stoves, candles, and heaters. The GLA will alert if the Norwegian occupational exposure limit for carbon dioxide is exceeded. This will give a good indication of the indoor air quality and environment, especially in order to avoid impaired performance and other health related consequences.

Anaesthetic gas has until recently been of the type chloroform and ether. Today, odourless gas is used by various types of fluranes. The GLA is probably the only alarm on the market alerting of both old and newer types of anaesthetic gases before they take effect.

## **3. SAFETY**

The safety regulations must be read before installing and using the product.

We recommend using at least two GLA sensors in order to obtain good operational safety. With more sensors you achieve better coverage of areas where gases may accumulate. This also increases protection against any sensor faults or depleted energy sources significantly.

Important factors for the GLA to function normally:

- The front switch must be ON.
- Correct placement (quiet, undisturbed location, low).
- Cleaning, removing dust with a dry cloth or brush.
- Regular control of LED blink (daily)
- Regular testing (monthly).
- Save energy (turn the alarm off immediately when testing).

Important factors that may cause the GLA not to function normally:

- The front switch is OFF.
- Incorrect placement.
- Lack of monitoring and testing.
- Covering, dust.
- Direct sunlight or heat radiation.
- Rapid or significant differences or changes in temperature.
- Water, condensation and abnormally high air humidity.
- Solvents and other abnormal gases, smoke and fog.
- Strong electrical or magnetic disturbances.
- Strong acoustic noise, outside audible range.
- Mechanical impact (vibration, shaking, shock, falling to the ground).
- Depleted energy source (alerts and testing deplete the energy source).

Information on False Alarm and significant/rapid temperature changes is found in Chapter 4 and under Service at [www.iSens.no](http://www.iSens.no). Remember that odours from fuel gases, exhaust and smoke may become uncomfortably strong before the alarm level is reached.

If the GLA does not function normally, it must be turned off. Check the warranty. Never attempt to open the box or repair the product yourself. This involves a high risk of electrostatic short-circuiting and damage to the product.

The GLA has built-in automatic calibration. If the GLA has been exposed to a high gas concentration (over time), it should be placed in a location without gas (outdoors) for a few days to reset. If a gas leak is very small and lasts for a longer period of time, the automatic calibration may cause the GLA to alert at a concentration slightly higher than originally calibrated. Normally, a very small gas leak will be handled by natural ventilation in the room. The GLA is designed to alert at sudden accidents where the concentration rises relatively quickly from a normal level.



#### 4. USE

##### INSTALLATION

Installation should be done by a qualified person. When installing it is important to consider the points under Safety and Technical Data. Placement is important in order to achieve the fastest possible detection of gases. It is important to choose a location where the gas emanates from, and where there is minimal ventilation and air movement. The spread of gas is initially diffusive in all directions. Place the GLA so it is unaffected by foreign gas, sun, cold draught from windows, ventilation and heaters.

Heavy fuel gases, LPG and anaesthetic gases sink downwards, but also spread throughout the room. Normal placement is on its silicone legs down on the floor in a corner or under a piece of furniture. Exhaust gas from heating cools quickly and will also spread throughout the room and down towards the floor. For best possible detection of CO<sub>2</sub> and leakage of exhausts and smoke only, the sensor should be placed in the breathing zone or higher. For fastest possible detection of domestic gas and hydrogen, as well as warm smoke from a fire, the GLA should be placed high up on the ceiling. The location should be at least 1m away from doors, windows and other openings.

Mounting with tape on a wall may cause fall damages and false alarms. Screw slots on the underside should be used for walls. Remember that the alarm must be heard well. Engine rooms are sound proof. When the GLA is turned on, the alarm may sometimes sound for 5–10 seconds. This is completely normal. Then only the LED should blink about every 5 seconds.

##### FALSE ALARM

The GLA is sensitive to significant/rapid changes in temperature. Avoid placement in the sun and near heat sources and openings. If a false alarm occurs, please select a different placement. In the event of a false alarm, also check the points in Chapter 3. For locations without heating, the alarm should be turned off when the location is vacated, and stored by the gas shut-off valve in order to remember to turn it back on. In case of danger of condensation, the alarm should be stored in a diffusion-tight box. A false alarm will deplete the battery quickly.

##### TESTING

NEVER test gas sensors without an EX approval with combustible gas concentration. Gas alarms are designed to alert long before the concentration becomes combustible. The GLA therefore has a smart, built-in safety function for testing. It is designed to react to carbon dioxide present in the air we exhale.

Place the GLA in a small, transparent plastic bag. Breathe normally through one of the openings on the side, and close the bag. Then wait for a few seconds until the alarm sounds. The alarm should not sound until 1–2 LED blinks, but normally before 5–6 LED blinks, depending on how quickly the bag is filled. If the alarm sounds too quickly, it may have become overly sensitive. Wait a while and repeat the test with a little less breathing air. iSens tests every GLA with and without gas before delivery. However, too hard physical impact may cause our factory settings to shift. In that case, your GLA needs to be replaced by your reseller.

Remember that alarms consume a lot of power. Therefore, turn the GLA off quickly and wait until all the gas is aired out before turning it back on. Testing with breathing air gives a complete test of all functions.

##### ALARM TIPS

Every situation can be different in the event of gas leaks, fires and explosions. Follow the national/local regulations and practice. Also, the following tips may be useful.

- Stop the leak. Turn off the main switch.
- Notify other people in the vicinity.
- Lower the gas concentration. Open doors, windows, etc.
- Put out embers and open flames from cigarettes, oil lamps, etc.
- Do not touch electrical appliances or power switches.
- Evacuate to a safe location until the gas is completely gone.

#### 5. TECHNICAL DATA:

Materials:	ABS box and PVC packaging
Exterior dimensions:	110 x 80 x 30 mm
Colour:	White with black edges and front
Mounting:	Silicone legs (mounting holes for screws)
Weight:	Approx. 120 g
Operation:	OFF-ON switch in front
Gas types:	LPG: Propane, Butane Domestic: Methane, Natural gas, Biogas Hydrogen Exhaust/Smoke: CO <sub>2</sub> (CO indirectly) Anaesthetic gas: Chloroform, Ether, Fluranes
Detection limits:	10–15 % of LEL (Lower Explosion Limit) Exhaust and smoke 5000 ppm CO <sub>2</sub> (approx. 25 ppm CO) Anaesthetic gas approx. 1000 ppm
Detection time:	5 second intervals LED blink indicator
Reaction time:	10 seconds (with logical error check)
Alert mode:	Red LED light in front and Alarm
Alarm level:	>85 dB at 1 m (2.7 kHz) pulsed 5 seconds on/off
Alarm time:	90 minutes total (full energy source)
Error signal:	LED stops blinking, alarm sounds.
Measuring technology:	Acoustic
Testing:	Smart safe testing function with CO <sub>2</sub> (breathing air)
Recommended area of use:	Stable temperature without rapid changes (5–35 °C)
Recommended storage:	Dry air without condensation (-20 to +40 °C)
Energy source:	Lithium 3–6 Vdc
Energy source life time:	Up to 15 years continuous (estimated from measured power consumption)