

1.0 DIAGNOSIS

Incident	Chapter	Page
Dead, Does not work, Defect	2.1	2
Out of Power	2.2	2
LED does not lit	2.3	2
LED does not flash	2.4	2
No Alarm	2.5	2
No Alarm when turned ON	2.6	3
Low Alarm level	2.7	3
Does not react on combustible gas	3.1	3
Does not react on exhaust / smoke	3.2	3
LED lit sometimes for 5 seconds or more	4.1	4
LED is on continuously	4.2	4
Alarm sounds 5-15 seconds when turned ON	4.3	4
Alarm sounds sometimes	4.4	4
Alarm is pulsing on and off all the time	4.5	4
Alarm sounds continuously	4.6	4
Questions and Answers	5.01 - 5.13	5
Other topics	6.01 - 6.06	7
Dealers, Service / Support	7.1 - 7.3	8

Useful information:

1. Download the last version of the user manual/ guide from our website www.isens.no
 - For all EU languages, click the EU flag
2. Read about temperature and false alarm under Service on our website.

2.0 POWER AND BATTERIES

2.1 Dead, Does not work, Defect

If GLA is "dead" or "not working":	See 2.2 - 3.2 or 5.0.
If GLA is "defect":	See 2.2 - 5.0.
Questions or something missing?	Send mail to post@isens.no.

2.2 Out of power

The only thing that can drain the batteries before expected lifetime is (false) alarm. To check if GLA is really out of power, check if LED flashes in chapter 2.4. If necessary, see 5.09 - 5.10 for battery replacement.

2.3 LED does not lit

Whether the LED lights up for 5-15 seconds when the GLA is switched ON is completely random and can change from time to time. Check if the LED flashes in accordance with chapter 2.4. In alarm mode, the LED should be lit continuously. See chapter 4.5.

2.4 LED does not flash

A visual check if LED is flashing should be done daily and when GLA is turned on.

When GLA is switched on, the LED can light for 5-15 seconds. After 20 seconds, the LED should only flash about every 5 seconds. It can be very difficult to see if the LED is flashing in daylight, from aside, at low battery, and if the LED has been pressed into the box. Check the LED without daylight and look straight towards the front.

If LED does not flash, it is a sign that the GLA is not working normally. The "bag test" in the operating instructions must be performed to check whether the GLA still works without LED. See 5.04. If the sound is low see chapter 2.7. If no alarm sounds, cleaning might be necessary, see 5.12. If LED still does not flash, GLA must be serviced.

2.5 No Alarm

To check whether GLA gives an alarm, the "bag test" must be performed as described in the operating instructions. See 5.04. If this test does not give a pulsed alarm 5 seconds on and off, the switch may need to be cleaned, see 5.12. If the bag test still does not give an alarm, the GLA is probably out of battery and must be delivered for service.

Test with flammable gas is unnecessary, very dangerous and requires a test chamber to be performed safely and controlled. Like all other standard gas detectors, GLA is not explosion-proof (EX-marked). See chapter 3.1.

2.6 No Alarm when turned ON

When GLA is turned on the alarm may sound for 5-15 seconds. This is completely random because GLA needs about 15 seconds to find out what the status is. This can change from time to time. After 20 seconds, only the LED should flash approximately every 5 seconds.

2.7 Low Alarm Level

GLA turns into alarm mode at low power. The sound gradually gets weaker. This is a sign that the batteries are exhausted and must be replaced immediately. See chapter 5.09 and 5.10. Alternatively see chapter 5.12 if the power switch could need a cleaning.

3.0 TESTING WITH GAS

3.1 Does not react on combustible gas

LPG (propane and butane) are normally added odorants. The smell is so strong that it will warn before GLA will warn. The smell can be very unpleasant before GLA will alert. The nose is therefore usually the best gas alarm when you are not sleeping.

GLA is designed to warn of a gas leak that increases the concentration of gas in the room, before the concentration becomes flammable. Testing with too high gas concentration is dangerous without EX equipment and can lead to incorrect results. See 6.04 - 6.06.

NB! Do not touch the ON-OFF switch on the GLA (or other electrical switches) if flammable gas is present.

3.2 Does not react on exhaust / smoke

GLA is not a type approved smoke/fire alarm. But will provide extra safety against exhaust and smoke, also when main powers fails. Some smoke alarms can warn earlier than GLA.

Both exhaust and smoke contain many different gases and particles. Many of these irritate the eyes and throat long before the concentration is dangerous. Odor and irritation can be significantly bothersome before the GLA goes into alarm.

To test GLA with exhaust / smoke, the mixture must be correct and controlled. The use of a closed test chamber is a must. The "bag test" with breathing air must always be performed firstly to check that the GLA works normally. See 5.04.

Read about Carbon monoxide (CO) protection in 6.03.

4.0 ALARM

4.1 LED lit sometimes for 5 seconds or more

This may be a sign that GLA is almost going into alarm mode. See chapter 4.4.

4.2 LED is on continuously

This is a sign that GLA is in alarm mode. See chapters 4.4 - 4.6.

4.3 Alarm sounds 5-15 seconds when turned ON

When GLA is turned on, the alarm sound for 5-15 seconds, or not. This is completely random because GLA needs about 15 seconds to find out what the status is. This can change from time to time. After 20 seconds, only the LED should flash ca every 5 seconds.

4.4 Alarm sounds sometimes

If GLA gives an alarm from time to time, it almost goes into alarm mode. The cause may be disturbance from the surroundings. See 5.01, 5.02 and 5.05. A relocation of the GLA will often solve this. GLA may have become unstable as a result of incorrect treatment. See 5.03, 5.06, 5.08, 5.11 and 5.13. GLA may also have become permanent hypersensitive. See 5.06, 5.07 and 5.13. GLA must always be tested before any complaint. See 5.04.

4.5 Alarm is pulsing on and off all the time

In alarm mode, the LED should light continuously while the alarm pulsates for about 5 seconds off and 5 seconds on. If this happens for no reason see chapters 4.3 and 4.4.

4.6 Alarm sounds continuously

In alarm mode, the alarm should pulsate. See chapter 4.5. A reason may be that the batteries are almost used up. See chapter 2.7. Alternatively, see chapter 5.12, if the power switch should need a cleaning.

5.0 Questions and Answers

No.	Question	Answer
01	Where to use GLA	GLA is made for indoor use. The box has IP 4.0. GLA can be used in houses, cabins, motor homes, camping, boats etc. The box has no protection against water and moisture. The temperature should be within the recommended value. Tests in tents and Lavvo in the winter have been positive, see Temperature under Service at www.isens.no . GLA must not be used above the recommended temperature. It is dangerous to expose the batteries to excessive heat. GLA is sensitive to rapid/ large temperature changes. False alarms can then occur and the batteries drain quickly. GLA should therefore not be used or tested outdoors. GLA should be turned off when left for a while.
02	Where to place GLA	The correct location is described in the user manual. The most important thing is that the alarm wakes those who sleep. Avoid affecting openings, valves and temperature. GLA can give false alarm in case of incorrect / poor placement. In that case GLA must be placed elsewhere.
03	How to mount GLA	See user manual. GLA is easiest to place on its silicone knobs / legs. It can also be mounted vertically on the wall. When using Velcro the glue/ tape must be strong. Using sharp tools or screws can damage the GLA. Scratches or wear on the underside are signs of this. GLA does not tolerate foreign bodies into the box. Even very small plastic/ metal shavings can cause ESD damage.
04	How to test GLA	Testing of GLA is described in the user manual. Visual check of LED should be performed daily and at start-up. The bag test should be performed monthly and at start-up. If errors are suspected, both tests should be performed. Self-testing is what provides the greatest security of all.
05	What may cause alarm	Alarms can be caused by various gases and vapors An overview of this is given in the user manual. Rapid or large temperature change can give (false) alarm. Avoid cold drafts and direct sunlight. Try a new location. Read about false alarms and location in the user manual. Other causes are also listed in the manual. Physical abuse can cause hypersensitivity. See 5.06.

-
- | | | |
|----|------------------------|--|
| 06 | What is physical abuse | GLA is a very sensitive precision instrument. GLA is made for use in houses/ cabins and for camping and boating. It has been tested for a fall of 1m down on a hard floor. But falls from high stock or during transport can be too much. If the factory setting moves, it may become hypersensitive. Hypersensitive GLA still works, but drains the batteries. iSens can adjust the factory setting again. But this takes time and we therefore give a 1 year guarantee instead. Then the dealers can just swap GLA for a new one. In case of problems with this, contact iSens directly. |
| 07 | Can GLA be reset | No, GLA can only be turned ON and OFF.
Please do not push the LED bulb into the box. |
| 08 | How to store GLA | Store GLA in a dry place in recommended temperature. A diffusion-proof box (and silica gel) should be used in case of danger of condensation, dust etc. Poor environment can significantly shorten the life time. |
| 09 | What is the lift time | The life time applies to continuous use. Life time depends on battery life and environment. Battery life applies from the year on the orange label. Battery life is estimated from measured power consumption without alarm. Alarm (false) will drain the batteries quickly. Poor environment during use / storage shortens the life time. With proper storage and seasonal use, the life time can increase. |
| 10 | Battery replacement | Yes, but only by iSens. The box should not be opened (see 5.11). The batteries are specially made for GLA. Battery replacement is not covered by the warranty. |
| 11 | Can GLA be opened | No, then it will be damaged or unstable and must be discarded. Open electronics require full ESD protection. ESD (Electro Static Discharge) can occur without touching. |
| 12 | Kan GLA be fixed | Sometimes GLA can be repaired by iSens. GLA should not be repaired by others. The box should not be opened. However, GLA can withstand half a drop of electronic cleaner in the switch. Do NOT use other cleaning fluids and wait 1-2 hours before use. False alarms can occur for a short time after cleaning. The need for cleaning may be a) when the LED is not flashing, or b) when the alarm is weak or c) continuous. When applying, move the switch slightly back and forth. Cleaning can in some cases remove coatings in the switch. The coating can come from condensation, dust etc. Especially during storage in poor environment (see 5.08). |
| 13 | GLA maintenance | GLA requires very little maintenance. See user manual. Make sure nothing gets into the alarm Do not use compressed air or other harsh influences Ensure proper storage (see 5.08) |
-

6.0 Other Topics

No.	Topic	Explanation
01	CE, Approval	All products in the EU / EEA must be CE marked CE means that the product is in accordance with European standard (EN). The EN standard defines all requirements and tests for the product GLA does not require third party testing or approval. Fire smoke alarms do however, in countries where they are mandatory.
02	Patent pending	Patent has been applied for the new technology in GLA. No one else can therefore apply for a patent on the same technology Information about the new technology is not currently given. The patent is published when the patent has been approved.
03	Carbone monoxide CO	GLA is ideal for preventing CO poisoning indirectly. CO is a toxic gas produced in a combustion. It can be from a fire, refrigerator or diesel heater. These always produce much more carbon dioxide CO ₂ than CO. CO ₂ is non-toxic but making you unable to evacuate. This happens long before you are poisoned by CO Therefore, some fire regulations have requirements for CO ₂ , but not CO. GLA is a CO ₂ alarm that provides better security than CO alarms.
04	EX mark	GLA is like most ordinary affordable gas detectors not EX marked. GLA should warn of gas before the concentration becomes flammable. The requirement is that GLA must notify before 20% of LEL is achieved. EX requirements are often used in places with Gas and Oil production
05	LEL	LEL (Lower Explosion Limit) is the flammable gas concentration. Below this limit, there is not enough gas to burn it. The limit is about 2% for LPG and 5% for domestic gas (methane). In other words, testing of LPG must take place in the area below 0.5%.
06	Upper gas limit	For warning of combustible gas, there are several upper limits. The limit of UEL (Upper Explosion limit) is about 10%. Above UEL, there is not enough oxygen for the gas to burn. The limit for when the oxygen for breathing is displaced, about 10%. 10 kg of gas momentarily in a room of 15m ² gives less than 15%. 5 kg of gas momentarily in a room of 10 m ² gives less than 11%. Detection of gas above 10-15% therefore has little utility value. Gas alarms are not normally designed for higher concentrations.

7.0 Dealers, Service / Support

Model and year are given on an orange label on the underside of the alarm.

7.1 Support

- The customer should have downloaded the latest version of the User guide
- Everyone who runs sales and customer support must have read the User guide
- Also read about Temperature and False Alarm under Service on our website
- Here the customer can also download the latest version of this Service guide

- Make the diagnosis in chapter 1.0 and solve the customer's problem in dialogue
- Proper placement very often solves the customer's problem
- iSens may assist with support for both dealers/ resellers and customers

7.2 No Return

- Check if the GLA has been visibly opened (screws loosened, ratchets inside)
- Check if GLA has visible damage (scratches underneath, chips in screw grooves)
- Check if anything has entered the GLA (visible liquids, particles, paint, etc.)
- Batteries (almost) used up. Customer may contact iSens.

7.3 Return

- Check what is wrong in this Service Guide before exchanging with the customer
- The GLA-XL and GLA-D models with defects should be replaced directly by dealers
- Older models can be repaired. Customer must contact iSens directly by e-mail
- If the customer does not have a receipt or has been unlucky, ask the customer to contact iSens. This applies inside Norway.

All alarms that are exchanged with the customer must be returned to iSens for checking the type of error and keeping statistics. Returns must normally go the opposite way of invoicing in order to be credited. iSens does not normally repair the latest model GLA-XL and GLA-D which are returned from dealers. It is usually guaranteed. All models can be repaired and batteries can be replaced if the customer contacts iSens directly at post@isens.no. This service is unfortunately too expensive to perform outside Norway.