

Putogesafe GS888 Smoke CO Detector with LCD Display



Putogesafe GS888 Smoke CO Detector with LCD Display Instruction Manual

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Putogesafe GS888 Smoke CO Detector with LCD Display I



Product Specifications

- Model: GS888
- Product Standards: EN 14604:2005/AC:2008, Conforms to EN 50291-1:2018
- CO Levels:
 - 30PPM: No Alarm before 120 minutes
 - 50PPM: Between 60 and 90 minutes
 - 100PPM: Between 10 and 40 minutes
 - 300PPM: Less than 3 minutes
- Product Lifespan: 10 years after manufacturing
- Standby Current:

Product Usage Instructions

Installation Instructions

Follow these steps for installing the Combo Smoke/CO Alarm:

1. Refer to the simple or multiple floor plans provided for installation guidance.
2. Avoid installation in certain areas as mentioned in the manual.
3. Install the device following the provided installation instructions.
4. For removal, follow the demounting instructions provided for both disassembly and assembly.

Operation and Testing

To operate and test the alarm:

- The smoke alarm takes precedence in case of both smoke and CO presence.
- If the FAULT indicator (yellow) continues to blink, refer to the manual for troubleshooting.
- The local smoke or CO alarm memory stores alarms triggered by activities like cooking or showering.

Maintenance

General maintenance of the product includes:

- Regularly test the alarm when replacing batteries using the TEST/SILENCE button.
- Refer to the manual for disposal methods and proper care instructions.

Battery Information

For battery-related details:

- Replace all three batteries with new ones of the same type when needed.
- Test the alarm after each battery replacement to ensure proper functioning.
- Dispose of batteries properly to avoid hazards.

Frequently Asked Questions (FAQ)

• Q: What should I do in case of a fire?

A: In case of a fire, follow standard fire safety procedures and evacuate immediately. Do not attempt to extinguish a large fire on your own.

• Q: How often should I test the alarm?

A: It is recommended to test the alarm monthly and especially after battery replacements or if any issues are suspected.

• Q: How long does the product last?

A: The product has a lifespan of 10 years after manufacturing.

Combo Smoke/CO Alarm Instruction Manual

Thank you for purchasing this Combination Smoke/CO alarm GS888. This device is a product that has been built using state-of-the-art technology. This instruction manual contains important information on starting operation and using the device. Store this instruction manual in a safe place for future reference. This instruction manual is a part of this device – bear this in mind if you pass on this device to others. Please take a few minutes to thoroughly read the instruction manual and familiarise yourself and your family with its operation.

What to do if the smoke alarm sounds

The smoke alarm pattern is three long beeps, a 1.5 second pause, and three long beeps repeating. The ALARM indicator (red) will flash once a second. The smoke alarm takes precedence when both smoke and carbon monoxide are present.

1. What to do in case of fire

1. Do not panic; stay calm.

2. Leave the building as quickly as possible. Touch doors to feel if they are hot, do not open but use an alternate exit that is not hot. Crawl along the floor and do not stop to collect anything.
3. Meet at a pre-arranged meeting place outside the building.
4. Call the fire department from outside the building.
5. Do not go back inside a burning building. Wait for the fire department to arrive.

NOTE: These guidelines will assist you in the event of a fire, however, to reduce the chance that fires will start, practice fire safety rules and prevent hazardous situations.

2. Practice fire safety If the smoke alarm sounds, and you have not pushed the test button, it is warning of a dangerous situation, your immediate response is necessary. To prepare for such occurrences, develop family escape plans, discuss them with all household members, and practice them regularly.
 1. Expose everyone to the sound of a smoke alarm device and explain what the sound means.
 2. Determine two exits from each room and an escape route to the outside from each exit.
 3. Teach all household members to touch the door and use an alternate exit when the door is hot, instruct them not to open the door if the door is hot.
 4. Teach household members to crawl along the floor to stay below dangerous smoke, fumes and gases.
 5. Determine a safe meeting place for all members outside the building.

What to do if the CO alarm sounds

The carbon monoxide (CO) alarm pattern is four quick beeps, repeating every 5 seconds. The ALARM indicator(red) will flash the same pattern.

WARNING! – Actuation of your CO alarm indicates the presence of Carbon Monoxide (CO) which can KILL YOU.
WARNING! – Action of this device indicates the presence of dangerous levels of CO! CO can be fatal!

If the alarm sounds

1. Keep calm and open all doors and windows to increase the rate of ventilation. Stop using all fuel-burning appliances and ensure, if possible, that they are turned off, e.g. for gas appliances, isolate the emergency control valve;
2. If the alarm continues, then evacuate the premises. Leave the doors and windows open, and only re-enter the building when the alarm has stopped. In multi- occupancy and multi-storey premises, ensure that all the occupants are alerted to the risk;
3. Get medical help for anyone suffering the effects of carbon monoxide poisoning, see Table 7.1, and advise that carbon monoxide inhalation is suspected;
4. Telephone the appropriate appliance servicing and/or maintenance agency or, when necessary, the relevant fuel supplier on their emergency number or the national Gas Emergency Service Provider, if appropriate, so that the source of carbon monoxide emissions can be identified and corrected. Unless the reason for the alarm is obviously spurious, do not use the fuel-burning appliances again, until they have been checked and cleared for use by a competent person according to national regulations.

If problems are identified during this inspection, have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturer's instructions or contact the manufacturer directly for more information about CO safety and this equipment. Make sure that motor vehicles are not or have not been operating in an attached garage or adjacent to the residence. Never restart the source of a CO problem until it has been corrected. Never ignore the sound of the CO alarm!

Product important information

CAUTION! – This Combo Smoke/CO alarm was designed to detect both smoke and carbon monoxide from any source of combustion in a residential environment. It is not designed for use in recreational vehicle (RV) or boat.

CAUTION! – This Combo Smoke/CO alarm was designed for indoor use only. Do not expose to rain or moisture. Do not knock or drop the alarm. Do not open or tamper with the alarm as this could cause malfunction.

CAUTION! – This Combo Smoke/CO alarm is designed to detect carbon monoxide gas from ANY source of combustion. It is NOT designed to detect any other gas.

CAUTION! – This Combo Smoke/CO alarm will not protect against the risk of smoke or carbon monoxide poisoning when the battery has drained.

CAUTION! – Installation of the alarm should not be used as a substitute for proper installation, use and maintenance of fuel burning appliances including appropriate ventilation and exhaust systems. A **CAUTION!** – This device should be installed by a competent person.

CAUTION! – This Combo Smoke/CO alarm is not intended to alert hearing impaired individuals.

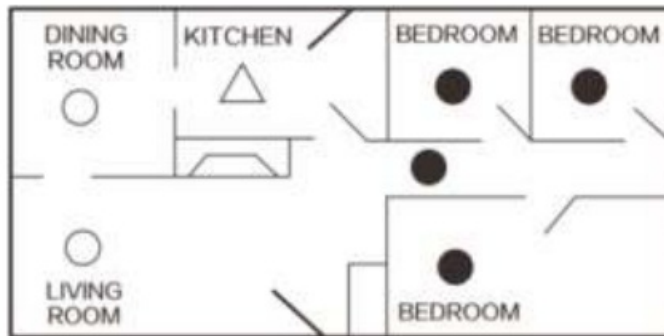
WARNING! – Do NOT try to repair the device, it has the risk of electric shock or malfunction

if the device is tampered with.

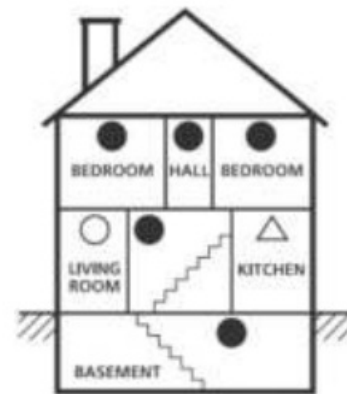
1. The TEST/SILENCE button accurately tests the device functions. Do not use any other test method. Test the device weekly to ensure proper operation.
2. If you're sure it isn't a real alarm warning, open windows or fan the air around the device to silence it.
3. Observe and follow all local and national electrical and building codes for installation.
4. This Combo Smoke/CO alarm is designed to be used inside a single family only. In multifamily buildings, each individual living unit should have its own smoke alarm devices. Do not install in non-residential buildings. The device is not a substitute for a complete alarm system.
5. Install a Combo Smoke/CO alarm in every room and on every level of the home. Smoke may not reach the smoke alarm for many reasons. For example, if a fire starts in a remote part of the home, on another level, in a chimney, wall, roof, or on the other side of a closed door, smoke may not reach the device in time to alert household members. This Combo Smoke/CO alarm will not promptly detect a fire or CO danger except in the area or room in which it is installed.
6. This Combo Smoke/CO alarm may not alert every household member every time. The alarm horn is loud in order to alert individuals to a potential danger. However, there may be some circumstances where a household member may not hear the alarm (i.e. outdoor or indoor noise, sound sleepers, drug or alcohol usage, the hard of hearing, etc.). If you suspect that this device may not alert a household member, you should install and maintain other specialty smoke alarm or/and CO alarm devices. Household member must hear the alarm's warning sound and quickly respond to it to reduce the risk of damage, injury, or death that may result from fire, If a household member is hard of hearing, install other special smoke alarm or/and CO alarm with lights or vibrating devices to alert occupants.
7. This Combo Smoke/CO alarm can only sound their alarms when they detect smoke or detect combustion particles or dangerous level of CO in the air. They do not sense heat, flame, or other gas. The device is designed to give audible warning of a developing fire. However, many fires are fast – burning, explosive, or intentional, and others are caused by carelessness or safety hazards. In this scenario, smoke may not reach the unit to set the alarm off QUICKLY ENOUGH to ensure a safe escape. 8. This Combo Smoke/CO alarm have limitations. The device is not foolproof and is not warranted to protect lives or property from fire. Smoke alarm or/and CO alarm are not a substitute for insurance. Homeowners and renters should insure their lives and property. In addition, it is possible for the device to fail at any time. For this reason, you must test the device weekly and replace unit every 10 years.

Installation instructions

WARNING! – To prevent injury, this device must be securely attached to the ceiling/wall in accordance with the installation instructions.



Single floor plan

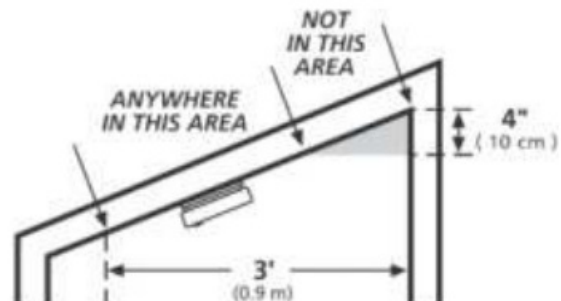
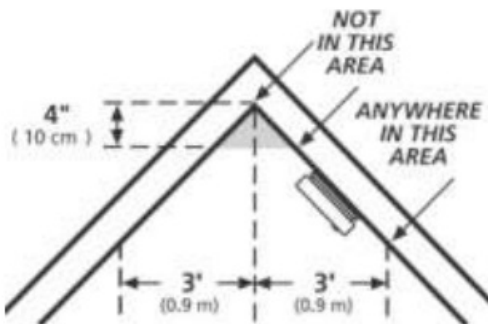


Multiple floor plan

- Smoke or smoke/CO alarms for required protection
- Smoke or smoke/CO alarms for additional protection
- △ Smoke alarm with silence control for additional protection

Recommended location for alarms

The following suggestions are intended to help you with the placement and installation of your Combo Smoke/CO alarm.



1. Install in a bedroom or hallway located close to the sleeping area. Take special care to verify the alarm can be heard in sleeping areas. If more than one sleeping area exists, locate additional alarms in each sleeping area.
2. Locate a device in every bedroom.
3. It is recommended that a Combo Smoke/CO alarm be installed on each level of a multilevel home.
4. Locate a device in every room where electrical appliances are operated (i.e. portable heaters or humidifiers).
5. Locate 10 feet away from all fuel burning appliances.
6. Placing at eye level allows for optimum monitoring of the red and green indicator lights.
7. Smoke, heat, and combustion products rise to the ceiling and spread horizontally. Mounting the smoke alarm on the ceiling in the centre of the room places it closest to all points in the room. Ceiling mounting is preferred in ordinary residential construction.
8. The device should be at least 6 feet (1.8 metres) above the floor level.
9. When mounting a device on the ceiling, locate it at a minimum of 4 inch (10 cm) from the side wall.
10. When mounting the device on the wall, use an inside wall with top edge the alarm at a minimum of 4 inch

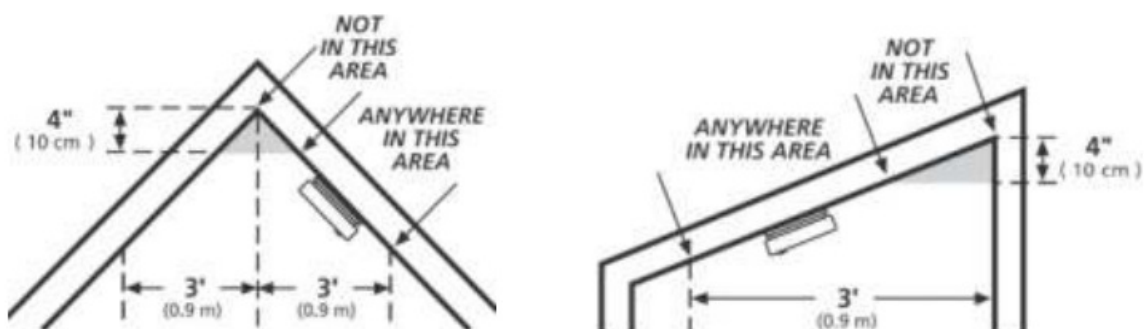
(10cm) and maximum of 12 inch (30.5cm) below the ceiling.

11. Put the device at both ends of a bedroom hallway or large room if the hallway or room is more than 30 feet (9.1 m) long.
12. Install the device on sloped, peaked or cathedral ceilings at or within 3 feet (0.9m) of the highest point (measured horizontally).

Locations to avoid

For ensure the Combo Smoke/CO Alarm work properly and provide detection performance, do not install the device in the following places:

1. Near appliances or areas where normal combustion regularly occurs (kitchens, near furnaces, hot water heaters). Install at least 10 feet away from these areas. Use specialized smoke alarm device with unwanted alarm control for these areas.
2. In areas with high humidity, like bathrooms or areas near dishwashers or washing machines or directly above a sink. Install at least 10 feet away from these areas.
3. Avoid spraying aerosols near the device.
4. Next to a door or window, an extractor fan, air returns or heating and cooling supply vents. Install at least 3 feet away from these areas. The air could blow smoke away from the device, interrupting its alarm.
5. In rooms where temperatures may fall below 0°C or rise above 40°C, or in humidity higher than 93%. These conditions will reduce battery life or cause a fault alarm.
6. In extremely dusty, dirty, or insect-infested areas, particles may interfere with the device operation.
7. In the garage. Products of combustion are present when you start your automobile.
8. In an enclosed space (for example in a cupboard or behind a curtain).
9. Where it can be obstructed (for example by furniture).
10. Less than 4 inch (10cm) from the peak of an "A" frame type ceiling.
11. Near fluorescent lights. Electronic "noise" may cause nuisance alarms.
12. Place out of the reach of children. Under no circumstances should children be allowed to handle the device.

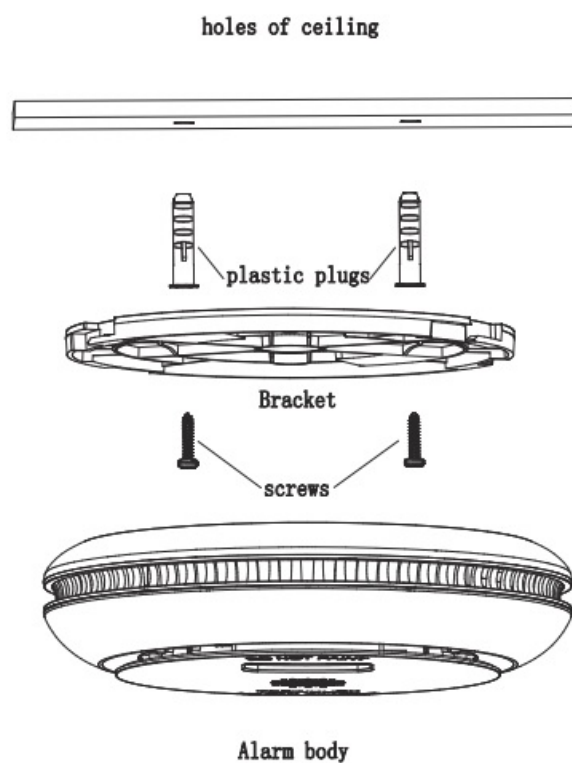


Installation instructions

CAUTION! – This device should be installed by a competent person. When choosing your installation locations, make sure you can hear the alarm from all sleeping areas. If you install only one device in your home, install the device near bedrooms, not in the basement or furnace room.

1. Drilling two 5.0mm holes in the ceiling or wall, the distance between two holes centre is 70mm(2.76inch), then inserting two plastic plugs provided into the holes.
2. Attach the bracket to the plastic plugs and fix tightly the screws into the plastic plugs. Do NOT over-tighten screws.

3. Install and rotate the alarm body on the bracket.
4. Test the device by using the TEST/SILENCE button. Ensure the device sound is alarm pattern.



As you install the device, it may sound for several minutes, then stop and enter in normal operation mode. If it always sounds, please call our agent.

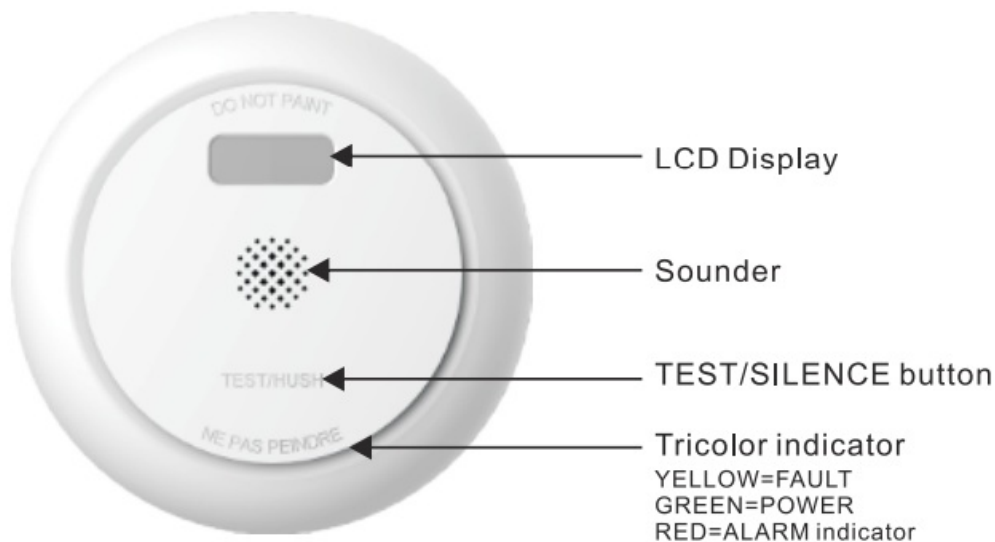
Un-installation instructions

Rotate clockwise for installation Rotate counter-clockwise for un-installation



Understanding your Combo Smoke/CO alarm

Product overview



1. **POWER indicator (green)** The green indicator is used to indicate power status of the device. The green indicator will flash every 40 seconds.
2. **FAULT indicator (yellow)** The yellow indicator is used to indicate malfunctions or low battery warning status of the device.
3. **ALARM indicator (red)** The red indicator is used to indicate alarm status of the smoke alarm or CO alarm.
4. **TEST/SILENCE button** The TEST/SILENCE button is used to test the device and to silence the unit during a smoke or CO alarm. Press and hold to enable TEST function, Or press to enable SILENCE function.
5. **Sounder** The sounder is used to send out smoke alarm, CO alarm warning and abnormal warning information.

Operation and testing

1. Start-up

The device start-up after connecting the battery, with the green indicators will light up briefly and LCD screen display countdown 60s. After power on, 60 seconds before the POWER indicator (green) flash every 2 seconds. This is pre-heated state, 60 seconds later the POWER indicator (green) flashing every 40 seconds indicates the device is functioning properly.



2. Normal operation

The POWER indicator (green) flashing every 40 seconds. The LCD doesn't display.

3. Fault warning

If the device chirps twice every 40 seconds, with FAULT indicator (yellow) will be flashing. It indicates the device is in a malfunctioning condition. If the word "Err" and flame symbol on the LCD screen is on, it means that your device does not have the function to detect smoke and is not responding to smoke. If the word "Err" and toxic symbol on the LCD screen is on, it means that your device does not have the function to detect CO and is not responding to CO.

CAUTION! – When Fault warning occurs, replace the device immediately. Please contact us to more service.

CAUTION! – When Fault warning occurs, please refer to "10. Deactivation of the device to dispose the device.



4. Fault warning silence

When the device is under the fault warning, pressing the TEST/SILENCE button, it will come into a fault warning silence status for about 10 hours. FAULT indicator (yellow) continue to flash, and the LCD displays flame/toxic symbol and the word “Err” and mute symbol. The mute symbol blinks.



5. Low battery voltage warning

If the device chirps once every 40 seconds and FAULT indicator (yellow) will be flashing, with LCD displays the word “Lb”, and low battery symbol blinks. It indicates the battery is low.



NOTE: When the low battery voltage warning occurs the device is capable of producing a smoke alarm signal or CO alarm signal for at least 4 min or 30 days of low battery voltage warning signal operation. **NOTE:** You need to replace the battery as soon as possible when the device enters this status. **NOTE:** The device will not protect against the risk of smoke and carbon monoxide poisoning when the battery has drained.

6. Low battery voltage warning silence

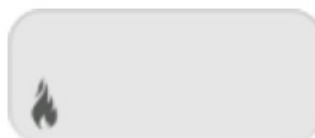
When the device is under the low battery warning, pressing the TEST/SILENCE button, it will come into a low battery voltage warning silence status for about 10 hours. FAULT indicator (yellow) continue to flash, and the LCD displays low battery symbol and the word “Lb” and mute symbol. The mute symbol and low battery symbol blinks.



NOTE: The silence feature of low battery voltage warning is temporary action to cancel warning sound effect, you need to replace the batteries as soon as possible.

7. Smoke alarm

When the device detects a dangerous level of smoke, the device will emit a smoke alarm pattern. The smoke alarm signal pattern is 3 long beeps followed by 1.5 seconds of silence. This cycle repeats as long as a dangerous smoke condition exists. The ALARM indicator(red) will flash the same pattern. The LCD displays flame symbol. This signal will repeated until dissipation of smoke or the alarm signal is manually silenced.

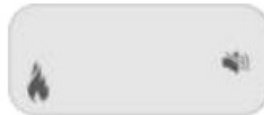


CAUTION! – Refer to “1. What to do if the smoke alarm sounds” when you hear the sounds of the smoke alarm warning.

DANGER! – If the smoke alarm sounds, and it is not being tested, it means the unit is sensing smoke, THE SOUND OF THE ALARM REQUIRES YOUR IMMEDIATE ATTENTION AND ACTION.

8. **Smoke alarm silence** During the device under smoke alarm mode, push the TEST/SILENCE button, it will pause the device alarm sound for about 8 minutes. The ALARM indicator (red) will keep flashing in smoke alarm mode, the LCD displays flame symbol, and mute symbol blinks. It indicates the device is running into the smoke alarm silence mode. This Combo Smoke/CO alarm is designed to minimise nuisance alarms. Combustion particles from cooking may set off the alarm if the alarm is located close to the cooking area. Large quantities of combustible particles are generated from spills or when grilling/frying. Using the fan on a range hood that vents to outside (non-recirculating type) will also help remove these combustible particles from the kitchen. The smoke alarm silence (TEST/SILENCE button) is extremely useful in a kitchen area or other areas prone to nuisance alarms.

The silence feature is to be used only when a known alarm condition, such as smoke from cooking activates the alarm. The device is desensitized by pressing the TEST/SILENCE button on the smoke alarm cover, the device will silence to indicate that the device is in a temporarily desensitized condition. The Combo Smoke/CO alarm will automatically reset after approx. 8 minutes, if after this period, particles of combustion are still present, the alarm will sound again. The smoke alarm silence (smoke alarm silence mode) can be repeatedly used until the air has been cleared of the condition causing the alarm.

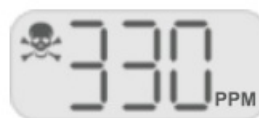


CAUTION! – Before using the smoke alarm silence (silence), identify the source of the smoke and be certain a safe condition exists.

9. **CO alarm** When the device detects a dangerous level of CO, the device will emit a loud alarm pattern. The alarm signal pattern is 4 short beeps followed by 5 seconds of silence. This cycle repeats as long as a dangerous CO condition exists. The ALARM indicator (red) will flash the same pattern. The LCD keeps showing toxic symbol and real-time CO concentration. This signal will repeat until dissipation of CO.

CO alarm sensitivity Setting:

- Conforms to EN 50291-1:2018
- 30PPM Without alarm before 120 minutes
- 50PPM Between 60 to 90 minutes
- 100PPM Between 10 to 40 minutes
- 300PPM| Less than 3 **minutes**



NOTE: The smoke alarm takes precedence when both smoke and carbon monoxide are present. A

CAUTION!- Refer to “2. What to do if the CO alarm sounds” when you hear the sounds of the CO alarm warning.

DANGER! – If the CO alarm sounds, and it is not being tested, it means the unit is sensing a dangerous level of CO, THE SOUND OF THE ALARM REQUIRES YOUR IMMEDIATE ATTENTION AND ACTION.

10. **CO alarm silence** During the device under CO alarm mode, pressing the TEST/SILENCE button, it will be paused alarm sound of the device about 8 minutes. The ALARM indicator (red) will keep flash as CO alarm mode, the LCD displays toxic symbol and real-time CO concentration, and mute symbol blinks. It indicates the device is running into the CO alarm silence mode.



CAUTION! – The audible alarm signal will reactivate about 8 minutes from the time the TEST/SILENCE button is operated where the concentration of CO surrounding the alarm remains at 50 PPM or greater.

CAUTION! – The audible alarm signal cannot to silence if the alarm at concentration above 200 PPM

CAUTION – The alarm silencing activation to once throughout a CO alarm period.

DANGER! – Before enable feature of CO alarm warning silence, you should be confirmed that the alarm is due to dangerous levels of carbon monoxide and the dwelling should be ventilated.

11. Test the device To test the device, pressing TEST/SILENCE button, you should hear alarm sound patterns and with a corresponding ALARM indicator (red) flashes. In smoke alarm mode, LCD displays flame symbol; In CO alarm mode, LCD displays toxic symbol and real-time CO concentration. The alarm sound patterns will stop after releasing TEST/SILENCE button. The test alarm sound pattern includes: 3 long beeps and 1.5 seconds pause for 2 repeat, 4 long beeps and 5 seconds pause for 2 repeat, repeat this pattern until releasing TEST/SILENCE button.



NOTE: After the TEST/SILENCE button is enabled, the alarm sounds and the red alarm light flashes. This does not indicate that CO is present.

NOTE: Test the unit weekly! If at any time your unit does not perform as described, replace it immediately.

WARNING! – Do NOT use an open flame to test your alarm, it could damage the alarm or ignite combustible materials and start a structural fire.

WARNING! – Due to the loudness (85 decibels) of the alarm, Always stand an arms-length away from the unit when testing.

12. End of life warning If the product continues to work for 10 years, the device will chirp 3 times every 40 seconds, with a FAULT indicator (yellow) flash, while displaying *EOL” on the LCD. It indicates this Combo alarm is in end of life. That means your device has no detecting feature and no response to smoke and CO.



NOTE: You need to replace the device as soon as possible when the device enters this status.

13. End of life warning silence When the device is in the End-of-life state, press the TEST/SILENCE button, it will enter the End- of-life warning mute state for about 10 hours, while displaying “EOL” and mute symbol blinks on the LCD, and the FAULT indicator (yellow) remains flashing.



NOTE: The silence feature of fault warning is a temporary action to cancel warning sound effect, you need replace the device as soon as possible.

14. Local smoke or CO alarm memory 72 hours alarm memory function. When the device detects smoke/CO and alarms, when the device return to standby mode, ALARM indicator (red) flash per 40 seconds. The LCD doesn't display. After quickly press TEST/SILENCE button for 3 times, or after 72 hours, will reset the historical memory function and enter normal operation status.

Troubleshooting

CAUTION! – Do not attempt to repair the device. It will affect your warranty. If the device is not operating properly, and is still under warranty, return it to the place of purchase. Pack it in a well-padded carton, and ship to the place of purchase. If the alarm is no longer under warranty, have a licensed electrician replace it immediately with a comparable alarm.

Table 5.3 Troubleshooting guide

Problem	Method of disposal
The device does not sound when TEST/SILENCE is pressed.	<ol style="list-style-type: none">1. Ensure device is powered off. Replace new battery and confirm that it has normal function after replacement.2. The device is under "Smoke alarm silence" or "Low battery voltage warning silence" or "Fault warning" mode. Please ensure the device is under "Normal operation" mode then test the device.3. Clean the device. Please refer to "6. General maintenance".4. If there are still failures during warranty, you can return it to your retailer.5. If the unit is out of warranty, please replace with another new device.
The device chirps	MALFUNCTION SIGNAL
once with FAULT indicator (yellow) flashing once every 40 seconds.	<p>Clean this device. Please refer to "6. General maintenance".</p> <ol style="list-style-type: none">1. If the device is under warranty, please return it to your retailer for replacement.2. If the device is out of warranty, please replace with another new device.
The device chirps twice with FAULT indicator (yellow) flashing twice every 40 seconds.	<p>LOW BATTERY VOLTAGE SIGNAL</p> <p>The battery is under low battery status, please replace the battery.</p>
The device sounds unwanted alarms when residents are cooking, taking showers, etc.	<ol style="list-style-type: none">1. Press TEST/SILENCE button to pause alarm.2. Clean the smoke around the device.

General maintenance

To keep your Combo Smoke/CO alarm in good working order, please follow these simple steps:

1. Verify the unit's alarm sound and indicators operation by pressing the TEST/SILENCE button once a week.
2. Remove the unit from the ceiling and clean the alarm cover and vents with a soft brush attachment once a month to remove dust and dirt.
3. Never use detergents or other solvents to clean the unit.
4. Avoid spraying air fresheners, hair spray, or other aerosols near the device.
5. Do not paint the device. Paint will seal the vents and interfere with the sensor's ability to detect CO. Never attempt to disassemble the unit or clean inside. This action will void your warranty.
6. As soon as possible, place the Combo Smoke/CO alarm back in its proper location to assure continuous protection from fire and carbon monoxide poisoning.

7. When household cleaning supplies or similar contaminants are used, the area should be ventilated.

WARNING! – The following substances can affect the sensor and may cause false actions: methane, propane, isobutene, isopropanol, ethylene, benzene, toluene, ethyl acetate, hydrogen sulfide, sulfur dioxides, alcohol based products, paints, thinner, solvents, adhesives, hair sprays, after shaves, perfumes and some cleaning agents.

WARNING! – Your Combo Smoke/CO alarm will not be operational and will not monitor for smoke and CO levels without battery.

WARNING! – This apparatus is designed to protect individuals from the acute effects of carbon monoxide exposure. It may not however, prevent the chronic effects of carbon monoxide exposure and will not fully safeguard individuals at special risk or with specific medical conditions. If in doubt consult a medical practitioner.

Carbon monoxide (CO) overview

Toxic effects

Carbon monoxide (CO) is a colourless, odourless, non-irritating gas classified as a chemical asphyxiant and whose toxic action is a direct result of the hypoxia produced by a given exposure. CO is rapidly absorbed through the lungs, diffuses across the alveolar capillary membrane and is reversibly bound with haemoglobin as carboxyhaemoglobin (COHb), however, a minute amount is present in the plasma. The affinity of haemoglobin for CO is over 200 times its affinity for oxygen. This reduces the oxygen carrying capacity of the blood, and has an effect on the dissociation of oxyhemoglobin, which further reduces the oxygen supply to the tissues. CO is chemically unchanged in the body, and is eliminated in expired air. The elimination is determined by the same factors that applied during absorption. The half-life while breathing room air is 2 h – 6,5 h depending on the initial COHb level. If the CO level in the inhaled air is constant, the level of COHb in the blood will approach an equilibrium (saturation) state after several hours. However, the rate at which the equilibrium is reached depends on many factors, e.g. lung ventilation rate (physical activity) and alveolar capillary transfer, cardiac parameters, blood haemoglobin concentration, barometric pressure, oxygen and carbon dioxide concentration in the inhaled air, but the two most important factors in determining the COHb level are the CO concentration and the duration of exposure. The effects of different saturation blood COHb levels on healthy adults are shown in Table 7.1.

Table 7.1 – Health effects of CO blood levels on healthy adults

% COHb	Effects
0.3 – 0.7	Normal range in non-smokers due to endogenous CO production
0.7 – 2.9	No proven physiological changes
2.9 – 4.5	Cardio-vascular changes in cardiac patients
4 – 6	Usual values observed in smokers, impairment in psychomotor tests
7 – 10	Cardio-vascular changes in non-cardiac patients (increased cardiac output and coronary blood flow)
10 – 20	Slight headache, weakness, potential burden on foetus
20 – 30	Severe headache, nausea, impairment in limb movements
30 – 40	Severe headache, irritability, confusion, impairment in visual acuity, nausea, muscular weakness, dizziness
40 – 50	Convulsions and unconsciousness
60 – 70	Coma, collapse, death
Source: U.S. Environmental Protection Agency 1984	

The relationship between the CO concentration and the duration of exposure can be calculated for a given %COHb, by parameterising the above factors. Figure 7.1 shows examples for a person undertaking light/moderate exercise.

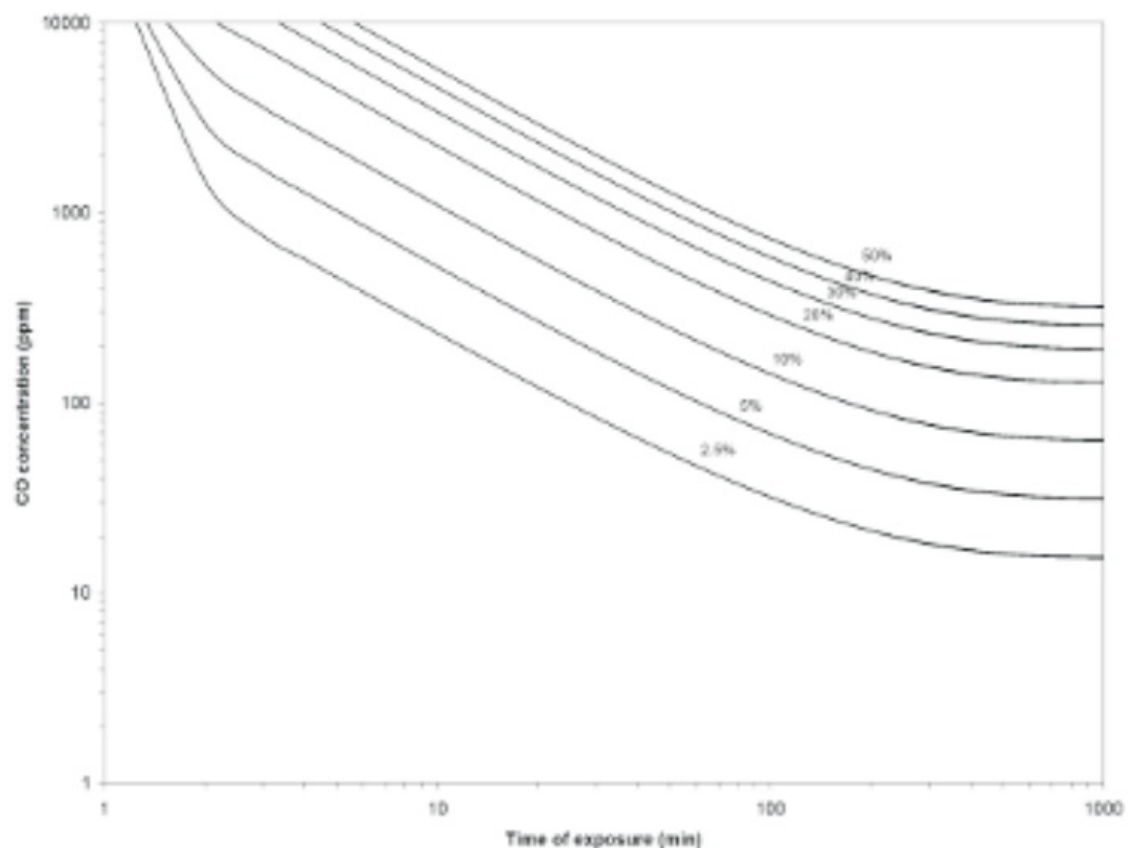


Figure 7.1-Relationship between CO concentration and exposure time for various %COHb (light/moderate exercise)

Chronic effects on high risk groups

Individuals with coronary artery disease exposed to low levels of CO show reduced ability to exercise and the time of onset of exercise-induced angina pectoris in such patients exposed to low levels of CO is reduced. Carbon monoxide readily crosses the placental barrier and may endanger the normal development of the foetus.

A number of high-risk groups are particularly sensitive to the effects of CO because of various organ impairments or specific changes, mainly:

- those whose oxygen carrying capacity is decreased due to anaemia or other haemoglobin disorders;
- those with increased oxygen needs such as those encountered in fever, hyperthyroidism or pregnancy,
- those with systemic hypoxia due to respiratory insufficiency;
- those with heart disease and any vascular insufficiency.

WHO guidance states that in order to protect non-smoking, middle-aged and elderly population groups with documented or latent coronary artery disease from acute ischaemic heart attacks, and to protect the foetuses of non-smoking pregnant women from untoward hypoxic effects, a COHb level of 2.5% should not be exceeded. The following WHO guideline values and periods of time- weighted average exposures have been determined in such a way that the COHb level of 2.5% is not exceeded, even when a normal subject engages in light or moderate exercise: • 100 mg/m³ (90 ppm) for 15 min; | • 60 mg/m³ (50 ppm) for 30 min; | • 30 mg/m³ (25 ppm) for 1 h; • 10 mg/m³ (10 ppm) for 8 h.

Normal COHb levels

Under normal conditions, humans typically have low levels of COHb of between 0.3% and 0.7% present within the body. These levels are considered neither beneficial nor harmful.

Tobacco smoking

Tobacco smokers are exposed to significant concentrations of CO. In cigarette smokers, the COHb concentration varies between 5%-9%, while heavy cigar smokers may exceed 10%.

WARNING! – Exposure to high levels of carbon monoxide can be fatal or cause permanent damage and disabilities.

WARNING! – The device may not prevent the chronic effects of carbon monoxide exposure and that the device will not fully safeguard individuals at special risk.

Battery information

1. Battery installation/replacement: Ideally, the service life of the battery is 7 years, which is equivalent to the service life of the product. Once chirps with corresponding FAULT indicator (yellow LED) flashing once every 40 seconds indicates that the battery is low battery, you must to replace with battery specified, please see “8.

Specification” To install or replace the battery in unit, please perform the following steps:

1. Take down the unit from bracket heads of the wall.
2. Open battery compartment.
3. Remove the old battery, and replaced by new battery.
4. Put the battery into the battery box.
5. Reinstall the alarm on the wall or ceiling.
6. Test alarm using the TEST/SILENCE button, if the testing alarm is ok, means the product can work normally.

WARNING! – Use only the battery specified. Use of different battery may have a detrimental effect on the CO alarm. **Note:** Constant exposure to high or low humidity or temperatures may reduce battery life.

CAUTION! – Please replace new 3pcs same type batteries in the meantime.

CAUTION! – Test the alarm for correct operation using the TEST/SILENCE button, whenever the battery is replaced!

Battery disposal

WARNING! – Fire, explosion and severe burn hazard. Do not recharge, crush disassemble, heat above 100°C, incinerate or expose contents to water.

1. Not to dispose of battery (or the device) as unsorted municipal waste but collect it separately.
2. Dispose of in accordance with all applicable federal, state and local regulations.

Product specifications

- Model: GS888
- Product standards: EN 14604:2005/AC:2008 EN 50291-1:2018
- Type of apparatus: Type B – to provide a visual and audible alarm only
- Power Supply: 4.5V(3pcs AA alkaline battery)
- Recommend battery type: Raymax LR6
- Sensor of Smoke: photoelectric reflection
- Smoke Alarm Sensitivity: 0.099~0.157dB/m
- Smoke alarm silence: about 8 minutes
- Sensor of CO: electrochemical CO alarm sensitivity
- Setting: Conforms to EN 50291-1:2018 30PPM| Without alarm before 120 minutes 50PPM Between 60 to 90 minutes 100PPM Between 10 to 40 minutes 300PPM| Less than 3 minutes
- Product life: 10 years after manufacture Standby Current: <15A (average)
- Alarm Current: <25mA (average)
- Operation Ambient Condition: 0~+40°C, 30~93%RH non-condensing Storage/Transport
- Ambient Condition: -10~+45 C, 20-95% RH non-condensing
- Alarm sound : ≥85dB at 10ft @3.20.5kHz
- Low Battery warning silence: about 10 hours
- Installation Location: ceiling or wall
- Detection range: Max. 40 m' within a room.
- Size: about Φ 140*45mm Weight: 290110g(net)

NOTE: This Combo Smoke/CO alarm is designed to detect carbon monoxide gas from any source of combustion. It is not design to detect any other gas.

Deactivation of the device

The WEEE symbol means that this product and battery must be disposed separately from other household waste. When product reaches its end of life, take them to a designated waste collection point in your area to guarantee a safe disposal or recycling. Protect the environment, human health and natural resources!



Good safety habits – develop and practice a plan of escape

Prepare and practice a home escape plan twice a year, including drills at night. Know of two ways out of every room (door & window) and identify a meeting place outside the home where everyone will gather once they have exited the residence. When two people have reached the meeting place, one should leave to call the fire department's telephone number () while the second person stays to account for additional family members. Establish a rule that once you're out, you never re-enter under any circumstance!

- Make a floor plan indicating all doors and windows and least two escape routes from each room. Second story windows may need a rope or chain ladder.
- Have a family meeting and discuss your escape plan, showing everyone what to do in case of fire and where to meet after they leave the house.
- Ensure that small children hear the alarm and wake when it sounds. They must wake up in order to execute the escape plan. Practice allows all occupants to test your plan before an emergency. You may not be able to reach your children. It is important they know what to do.
- Familiarise everyone with the sound of the smoke/CO alarm and train them to leave your home when they hear it.
- Current studies have shown smoke/CO alarms may not awaken all sleeping individuals, and that it is the responsibility of individuals in the household that are capable of assisting others to provide assistance to those who may not be awakened by the alarm sound, or to those who may be incapable of safely evacuating the area unassisted.
- Install and maintain fire extinguishers on every level of the home and in the kitchen, basement and garage. Know how to use a fire extinguisher prior to an emergency.

Manufacturer and customer service information

Manufacturer:

- SITERWELL ELECTRONICS CO., LIMITED
- **ADDRESS:** No.666 Qingfeng Road, Jiangbei District, Ningbo, Zhejiang Province, China
- TEL: 0086-574-87729581
- **FAX:** 0086-574-87729581
- **E-MAIL:** sales@china-siter.com 12.2
- Customer service: SITERWELL ELECTRONICS CO., LIMITED
- **ADDRESS:** No.666 Qingfeng Road, Jiangbei District, Ningbo, Zhejiang Province, China
- **TEL:** 0086-574-87729581
- FAX: 0086-574-87729581
- E-MAIL: sales@china-siter.com

Warranty information

THREE YEARS LIMITED WARRANTY

Dear customer,

Our products are subject to strict quality controls. However, if this device should unexpectedly not function perfectly, please contact the customer services address given on warranty service information. This is the only way for you to be able to return your device or have it picked up free. The warranty period is 36 months and begins on the day of purchase. Please always keep your till receipt as proof of purchase. Warranty claims can only be made for possible defects caused by material and production faults. During the warranty period, defective devices can be sent to the service address given overleaf for you (postage paid). You will then receive a new or repaired device back free. After the warranty period has expired you still have the possibility of sending the defective device for repair to the address given overleaf. Repairs carried out after the warranty period must be paid for. In the event of misuse or improper treatment, use of force or intervention not carried out by our authorized service branches, the warranty is no longer valid. This warranty does not restrict your legal rights.


NOTE: In the event of a warranty claim, please return the till receipt and completed warranty card with fault description together with the defective device. NOTE: The warranty does not cover the batteries supplied.

Warranty card

- Last Name:
- First Name:
- Phone: Address:
- City: Country:
- Zip Code:
- Fault description:
- Date of purchase:
- Signature:



Documents / Resources

	<p>Putogesafe GS888 Smoke CO Detector with LCD Display [pdf] Instruction Manual GS888 Smoke CO Detector with LCD Display, GS888, Smoke CO Detector with LCD Display, C O Detector with LCD Display, Detector with LCD Display, LCD Display, Display</p>
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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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