



## S-9102R Stand Alone Smoke Detector

Issue.1.02

August, 2014

### 1. Overview

S-9102R Stand Alone Smoke Detector (here called smoke detector for short) detects smoke produced by a fire and gives alarm signals in time.

Using optical smoke sensing parts and art of state production technologies, it has a stable performance, esthetical appearance and can be easily installed, no commission required. It is designed to monitor fires may occur in places such as houses, all kinds of shops, pubs, bars and etc.

Built-in a buzzer can give an alarming sound aloud and silence it. Two AA 1.5V LR6 alkaline batteries will be operating up to three years.

### 2. Technical Specifications

- 1) Power supply: 2 AA 1.5V LR6 alkaline batteries, operates up to 3 years or so.
- 2) Indicator: Red, flashes in every 45 seconds in normal condition.
- 3) Sound Level > 80dB @ 3m
- 4) Switch output terminals C+, C- (polarity-sensitive):

External maximum voltage: 30V

Maximum current: 60mA

- 5) Detection Area: 60m<sup>2</sup> ~ 100m<sup>2</sup>
- 6) Operating Environment:

Temperature: -10°C ~ +50°C

Relative Humidity ≤ 95%, non-condensing

- 7) Dimension: 120mm x 58mm (D x H, with base)
- 8) Material of Enclosure: ABS
- 9) Weight: 181g (without base)
- 10) Mounting Hole Distance: 50mm ~ 74mm

### 3. Installation and Wiring

#### 3.1. Location of Smoke detectors

One smoke detector should be installed in an individual room. Refer to Fig. 1.

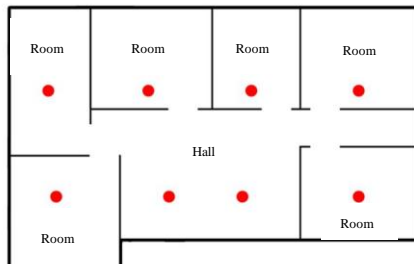


Fig. 1

#### 3.2. Mounting Position

##### 1) Recommended Location

The position of a smoke detector is critical if maximum speed of fire detection is desired. This smoke detector can be mounted on a ceiling or wall. Thus, the best location for a smoke detector is the center of the ceiling. At this location, the smoke detector is closest to all areas of the room.

- When mounted on ceilings, the edge of the smoke detector should be at least 50cm to any wall.
- When mounted on slope or gable roof, the smoke detector should keep a certain distance from the roof. The distance should be 0.2m when slope angle is less than 30°. It should be 0.3m ~ 0.5m if the angle is more than 30°.

##### 2) Locations to avoid

To avoid false alarms, do not install smoke detectors:

- In or near areas where combustion particles are normally present such as kitchens. In garages where there are particles of combustion in vehicle exhausts. Near furnaces, water heater, or gas space heaters. **The smoke detectors should be installed at least 6 meters away from kitchens and other areas where combustion particles are normally present.**
- In air streams passing by applications such as kitchens.
- In damp or very humid areas, or next to bathrooms with showers. The moisture in humid air may cause false alarm. **Install smoke detectors at least 3 meters away from bathrooms**

- Under ultra high or low temperature, where the temperature can go above or below the operating range of the smoke detector. Operating temperature of the smoke detector is  $-10^{\circ}\text{C}\sim 50^{\circ}\text{C}$ .
- In very dusty or dirty areas. Tiny dust and dirt can go through the filter and build up in the chamber to make the smoke detector over-sensitive or block openings to the sensing chamber and keep the smoke detector from sensing smoke.
- Near fresh air inlets or returns or excessively draughty areas. Airflow from air-conditioners, heater, fans or air inlets will blow smoke away from the smoke detector, making the smoke detector less effective.
- In dead air spaces at the top of a peaked roof or in the corners between ceilings and walls. Dead air may prevent smoke from reaching a smoke detector.
- Near fluorescent light fixtures. Electrical "noise" from nearby fluorescent light fixtures may cause a false alarm. **Install smoke detectors at least 1.5m away from such light fixtures.**

**Note: Never take the batter out of a smoke detector to silence a nuisance alarm. Open a window or fan the air around the smoke detector to remove the smoke. The sound will automatically turn off when the smoke in the air is completely gone.**

**Do not stand close to the smoke detector. The sound produced by the smoke detector is loud and may be harmful to your hearing.**

### 3.3 Mounting Method

**Note: For new building, do not install the smoke detector until fit up and cleaned up.**

#### 1) Checking

Before installation, verify that the enclosure and labels complete.

#### 2) Mounting

**Warning: Installation of the smoke detector must comply with local standards. Failure may result in damage to life and property.**

- Fix the base of a smoke detector on the ceiling by two  $\phi 6$  expansion bolts.
- Align the small mark on the side of the smoke detector with the arrow of "start" mark on the base and rotate the smoke detector clockwise.



Fig. 2

### 3) Testing

The smoke detector has a buzzer, a button and a red LED. Install the battery, press and held the test button (as in Fig. 3), the buzzer will generate alarming sound and the LED flashes quickly. C+ and C- of a smoke detector is closed. Release the button, the smoke detector resumes to normal operation. C+ and C- of a smoke detector is opened.

**Note: Remove dust cover for the first testing. Put it on before the smoke detector operates normally to protect again dust.**



Fig. 3

## 4. Usage and Function

### 4.1. Usage of the Smoke detector

This smoke detector is designed to sense smoke entering into the smoke chamber. It does not sense gas, heat or flame.

This smoke detector can monitor the air and, when it senses smoke, activates its built-in alarm buzzer to provide precious time for you and your family to escape from your residence before a fire spreads. Such an early warning, however, is possible only if the smoke detector is located, installed, and maintained as specified in this manual.

**Note: If the smoke detector is not used in a network, it can only be used within single residential living units, that is, it should be used inside a single-family home or one apartment of a multi-family building. In a multi-family building, the smoke detector may not provide early warning for residents if it is placed outside of the residential units, such as on outside porches, in corridors, lobbies, basements, each residential unit should have smoke detectors to alert the residents of the unit.**

## 4.2. Main Functions

- a) Alarm Testing: The smoke detector can work properly after connecting power supply, and the indicator flashes about every 45 seconds. Press the test button, the buzzer generates alarming sound and the indicator flashes quickly. C+ and C- of a smoke detector is closed. Release the button, the smoke detector resumes to normal working condition. C+ and C- of a smoke detector is opened.
- b) Alarming: When smoke density reaches a certain level around the smoke detector, the LED will flash quickly, and the buzzer generate alarming sound. C+ and C- of a smoke detector is closed. When the smoke disappears, the smoke detector can resume to normal automatically. Then C+ and C- of a smoke detector is opened.
- c) Silence: when alarm is given by a smoke detector, the alarming sound can be silenced by pressing the button. The smoke detector will resume to normal after about 55 seconds later.
- d) Indication of low battery: When the battery voltage is lower than 2.7V, the smoke detector will give short "chirp" sound with visual indication and the buzzer alarms about every 45 seconds. These shows the battery is low and should be replaced by new one.
- e) Indication of low sensitivity: When sensitivity of the sensing chamber is low, the detector will give short "chirp" sound between two flashes of the indicator.
- f) Sensitivity drift compensation: the dust can build up in the sensing chamber as time goes by, so the feature of sensitivity drift compensation can delay the date of clearing taking accumulative dust into consideration.
- g) Indicating dirty chamber: When chamber is dirty, the detector will give short "chirp" sound between two flashes of the indicator.
- h) Switch output terminals:  
This smoke detector provides a switch output isolating photoelectric (normally open). The capacity: external volatge can be up to 30V and the current can be up to 60mA. It is used to control associated devices.  
C+ of a smoke detector can connect to anode of the power supply and C- of a smoke detector to cathode of the power supply.  
C+ and C- of a detector is opened when polling, and closed when alarming.

## 4.3. Limitations

**The smoke detector will not work without power.** This smoke detector is powered by batteries; it will not work without batteries, with dead batteries or is the batteries are not installed properly.

**The smoke detector may not sense fire that starts where smoke cannot reach it,** such as in chimneys, in walls, on roofs, or on the other side of closed doors.

**The smoke detector may also not sense fire on another level of a residence building.** For example, a second-floor smoke detector may not sense a fire on first floor or in basement. Therefore, smoke detectors should be placed on every level of a residence or building.

The buzzer in the smoke detector meets or exceeds audibility requirements of relative standards.

## 5. Troubleshooting

### 5.1. A smoke detector gives alarm on power up.

- Make sure there is not too much smoke, dust or vapor in the room.
- The smoke detector may be in an unstable state. Please press the test button for 3 seconds or so then release it to resume the smoke detector back to proper operation.
- If two cases above are excluded, the smoke detector still doesn't work properly. Please return the smoke detector for repair (see 7. Return a Smoke detector) .

### 5.2. A smoke detector doesn't give alarm when the button is pressed.

- Check battery if it is low voltage. Replace it with a new one.
- It is not the case above, return the smoke detector for repair.

## 6. Maintenance

1. The smoke detector should be tested after installed and after every one week. For any problems, please contact our local distributor or agent for technical support.

2. In normal environment, the battery can last for about three years. But adverse circumstance like high temperature and humidity may shorten its life. Please replace battery when the smoke detector alarms low battery. Please use two AA 1.5V LR6 batteries.

**Note: Please use recommended batteries. Otherwise the smoke detector may be damaged.**

3. Replacing the battery, as shown in Fig. 4.

- Use screwdriver to open the battery cap.
- Slightly take the battery out of battery holder.
- Replace two new batteries.
- Put the battery cap back.



Fig. 4

**Note: after replacing the battery, test the smoke detector by pressing the button to ensure that it is able to operate normally.**

4. After the smoke detector has been in operation for a long period or it's installed before completion of the construction, the smoke detector may have dirt build-up in the chamber, which could cause false alarm. In case of this, contact local distributor for technical support. If the reason is accumulative dust, return the smoke detector for cleaning.

5. If the smoke detector gives short "chirp" sound and visual indication, this means sensitivity is low and the smoke detector is not working properly. Please do not try to repair it by yourselves. This will void your warranty. See "Return a Smoke detector" for instructions to return the smoke detector. Or you can inform local distributor or agent. We will respond as soon as possible.

6. It's recommended to replace the smoke detector for every 10 years.

**Warnings:**

- Dust cover can't be removed until the project is plunged. Protect the dust cover for the future use. Dust cover provides limited protection against airborne dust particles. So, remove the smoke detector prior to heavy remodeling or construction and inform the proper authority.
- **Never use any kinds of open flames to test your smoke detector. You may ignite and damage the smoke detector as well as catching a fire. The test button is designed to accurately simulate smoke conditions and test the smoke detectors functions as required by relative standard.**
- **Don't cover, paste, or block the openings of a smoke detector. Those openings are used for ventilation to sample the air around.**
- Dust covers are an effective way to limit the entry of dust into smoke detector sensing chambers. However, they may not completely prevent airborne dust particles from entering the smoke detector. Therefore, we recommend the removal of smoke detectors before construction or other dust producing activity begin. Be sure to notify the proper authority for the removal of the smoke detectors.

- **A false alarm will be given if the smoke detector is not cleaned regularly. If dust is build-up, the smoke detector may give the alarm without fire.**
- **When fire test is made, output switch signal will caused the connected device to give alarming sound. Please isolate such devices to avoid false alarm.**

**7. Return a Smoke detector**

Should you experience problems, please follow the steps to return the faulty smoke detectors.

- 7.1 Remove the smoke detector and take out the battery.
- 7.2 Carefully pack (the manufacturer cannot be responsible for consequential damage) and return to the manufacturer (or local distributor and agent). Please attach complete details as to exact nature of difficulties being experienced and date of installation.



**Gulf Security Technology Co., Ltd.**

No. 80, Changjiang East Road, QETDZ,  
 Qinhuangdao, Hebei,  
 P. R. China 066004  
 Tel: +86 (0) 335 8502434  
 Fax: +86 (0) 335 8502532  
[service.gst@fs.utc.com](mailto:service.gst@fs.utc.com)  
[www.gst.com.cn](http://www.gst.com.cn)