

C-9602LW
Conventional Gas Detector
Installation and Operation Manual

(Issue 2.0, November 2003)

CONTENTS

I	General	1
II	Features	1
III	Technical Specifications	1
IV	Structure and Operation Principle ...	2
V	Mounting and Wiring	4
VI	Operation	8
VII	Troubleshooting	10
VIII	Maintenance.....	10
IX	Cautions.....	10
X	Manufacturer's Statement.....	11



I General

C-9602LW Conventional Gas Detector (hereinafter called the detector) is used to detect liquefied petroleum gas in such areas as houses, hotels and apartments.

II Features

The detector adopts semiconductor gas sensitive components enabling stable operation and simple installation. It's powered by AC 220V.

III Technical Specifications

1. Operating Voltage: AC220V
2. Power Consumption<5W
3. Output Capacity and Control Mode:
Active Contact: Applicable to 12V one-way DC pulse solenoid valve, driving ability: 1000 μ F capacitance discharge.
Passive Contact: Passive, normally open, capacitance 220V/3A, can easily control connected devices.
4. Alarm Density:
Liquefied Petroleum Gas 3000ppm (15%LEL)

5. Indicator: flashes per 7s~8s normally and 1~2 times per second when alarming.
6. Solenoid Delay Time: 10s~20s
7. Sound Indication: Intermittent whistle when alarming and constant whistle when in fault.
8. Operating Environment:
Temperature: -10°C~ +50°C
Relative Humidity \leq 95%, no condensation
9. Life of Sensor: 5 years
10. Dimension: 176mm \times 80mm \times 45mm
11. Degree of Protection of Enclosure: IP30
12. Material and Color of Enclosure: ABS, ivory white
13. Weight: 420g
14. Mounting Hole Distance: 156mm

IV Structure and Operation Principle

1. Appearance of the detector is shown in Fig. 1.

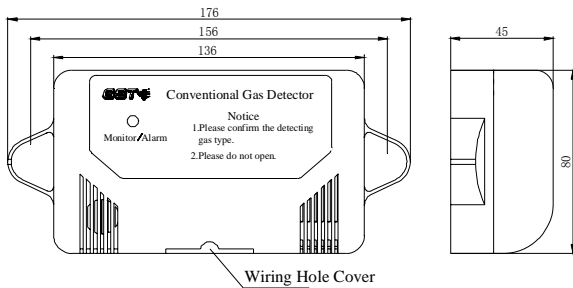


Fig. 1 Appearance

2. Operation Principle

In normal operation, comparator N1B and its peripheral components form an oscillator to make the LED flash. When the sensor checks gas, the voltage at output end of the sensor is reduced, comparator N1A output low voltage; Relay is closed and N1C form an oscillator making the buzzer whistle intermittently. N1B changes duty ratio making the LED flash quickly. After C9 is charged, XT3 outputs a forward pulse. If gas-sensitive component is damaged, comparator N2D outputs low voltage making buzzer B2 whistle.

3

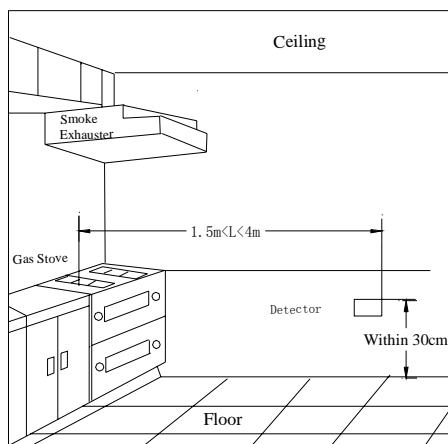


Fig. 2 Mounting position

To use the detector correctly and avoid any possible fault, please do not mount the detector at following locations:

- (1) Where affected by smoke or vapor from the stove.
- (2) Where near strong airflow, such as air-inlets, fans, doors, etc.
- (3) Where near bathroom or places with a lot of vapor.
- (4) Rooms for boiling water and places where power is cut at night.

5

v Mounting and Wiring

1. Selection of Detector Location

The detector is wall-mounted. The mounting position (as in Fig. 2) should be decided according to the position of stove. But there are still some principles to follow:

- (1) The detector should be placed in the same room with the stove.
- (2) The detector should be mounted within 30cm to the floor.
- (3) The detector should be within 1.5m~4m to gas resource or stove.

4

- (5) Where temperature is below -10°C or over 50°C or outdoors.
- (6) Where explosion-proof measures are required.
- (7) Where the detector is partitioned with the gas devices.

2. Terminals are shown in Fig. 3.

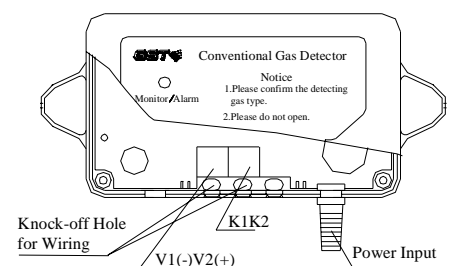


Fig. 3 Terminals

K1, K2: Output a passive normally open contact when alarming, which can match with other products (such as GST intelligent residential products).

V2(+), V1(-): Connects with pipe solenoid. When alarming, there is a delayed forward 12V pulse voltage between V2 (+) and V1 (-).

3. Mounting Method

6

Remove the wiring hole cover of the detector, according to output used, knock down the knock-off piece (the one on one side as in Fig. 4 for surface mounting or the one on bottom as in Fig. 5 for flush mounting), thread the cables in and put the cover back after wiring.

After wiring, drill two $\phi 8$ holes with spacing of 156mm at the installation point, put two $\phi 8$ expand tubes, remove the screw hole cover on the detector, fix the detector with $\phi 8$ expansion screws and put the cover back.

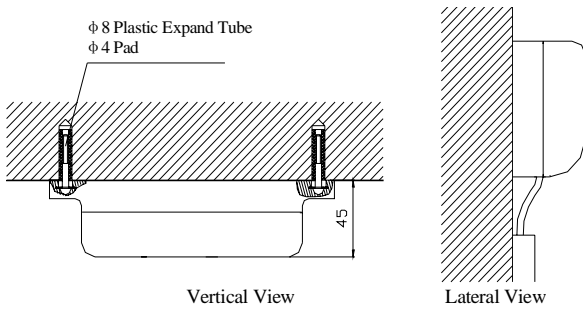


Fig. 4 Surface mounting

7

gives quick intermittent "tick" sound, the indicator flashes per 1s, and K1 and K2 are closed. After alarming, the detector will output a forward pulse current to close the solenoid after 10s~20s. When the gas density goes below the preset value, the detector will automatically stop audio and visual signal, and K1 and K2 open automatically. If, at this time, the solenoid has been closed, it will be kept closed, and you will have to pull it open manually. The sound of solenoid being opened can be heard.

3. When the detector alarms, please immediately open the windows for ventilation; Put out any fire; do not make new fires; Avoid switching on or off any electric appliance, inspect the reason of leaking and call professional engineers.
4. Fault and solution: The detector has self-test function. When finding any fault, it will whistle. Never remove or open the detector by yourselves. Inform professional engineer.

9

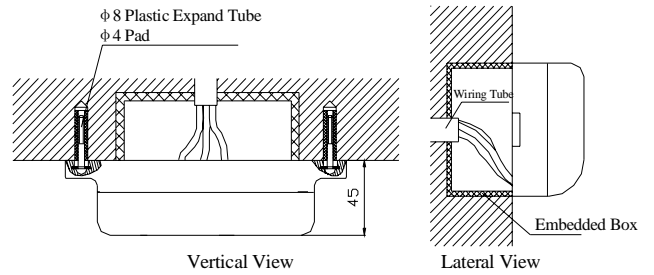


Fig. 5 Flush mounting

4. Wiring

RVS Fire-resistant copper core cable with cross section $\geq 1.0\text{mm}^2$ for V2(+) and V1(-); BV cable with cross section $\geq 2.5\text{mm}^2$ for K1 and K2.

VI Operation

1. After wiring and checking, apply AC 220V power. The indicator flashes after power-up and enters normal operation after warm-up for 5 minutes. the indicator flashes per 7s~8s in normal operation.
2. Alarm: When the monitored gas density is over the preset density of the detector, it

8

VII Troubleshooting

No.	Fault	Reason	Solution
1.	Alarms after power-up	Hasn't been powered for a long time or first time powered up.	It will resume normal after a period.
2.	Solenoid cannot be switched off	Polarity of the solenoid is reversed.	Wire correctly.

VIII Maintenance

1. Avoid using much hair tonic, pesticide, paint, alcohol, diluents etc near the detector, to avoid affecting normal monitoring of the sensor.
2. In case of fault, never remove or open the detector by yourselves. Inform our company or our local office for repair.

IX Cautions

1. Each type of detector can only detect the kind of gas nominated on the nameplate.

10

2. Don't install the detector at locations with high temperature (near stoves) or too much smoke (near smoke exhauster); Keep environment around the detector clean.
3. The detector can only be connected with one-way DC solenoid.
4. The detector should be tested once half a year.
5. **It's allowed to use a cigarette lighter to test the detector, but the distance should be more than 10cm; Never put the cigarette lighter too near to the detector.**
6. The detector will normally be a bit hot in operation.
7. Never cut down the power of the detector.

X Manufacturer's Statement

Replace the sensor in time when it reaches its life period.

In following cases, the manufacturer is not responsible for any warranty:

1. Damage to the detector due to failure to install and use it according to this manual;
2. Damage to the detector due to over voltage

- of power network or change of power supply or opening the enclosure.
3. Damage to the detector due to damp, plunge, knock, crush or breakage;
4. Damage to the detector due to high temperature or humidity exceeding the specified range or due to high dust density.
5. Damage to the detector due to other improper use.