I-9702LW-NG

Addressable Gas Detector

Installation and Operation Manual
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Gulf Security Technology Co., Ltd.

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I Cautions

1. This product should only be installed in the environment specified in the installation and operation manual. It is not suitable for places where explosive or corrosive gas may present (including tobacco warehouse using celphos). It is not suitable for places where special equipment certification is required (including but not limited to ships, airplanes, trains or other vehicles). Please contact our sales staff for special needs.
2. The detector can only detect the gas type specified on the product nameplate.
3. Do not mount the detector at locations with high temperature (such as nearing the stove) or too much soot (such as nearing smoke exhauster) and keep environment around the detector clean.
4. Please do not use a large amount of hair gel, mousse, insecticide, paint, alcohol, diluents and the like near the detector to avoid affecting the normal monitoring of the sensor.

5. It is recommended to test alarm function of the detector at least every six months.
6. It is normal for the detector to be slightly hot in operation.
7. Do not switch off the power randomly.
8. After being stored without power for a long time, the detector will not work normally until it is powered for a period.
9. Please replace the detector promptly when service life of the sensor expires.

II Overview

I-9702LW-NG Addressable Gas Detector (hereinafter referred to as the detector) is used to detect the leakage of natural gas. It is suitable for places such as home kitchens and restaurants where natural gas is used. The detector can be connected to the fire alarm control panel produced by GST to monitor the concentration of combustible gas in installation sites.

III Features

The detector adopts a semiconductor gas sensor, which can work stably and reliably with

long service life and can be easily installed.

Ⅳ Technical Specification

1. Operating Voltage
   Power Voltage: 24VDC, non-polarized, permitted range: 16VDC~28VDC
   Loop Voltage: loop 24V, non-polarized, permitted range: 16V~28V
2. Power Consumption
   Power:
   Quiescent State Consumption≤0.5W
   Alarm State Consumption≤1W
   Loop:
   Standby Current≤1mA
   Alarm Current≤2mA
3. Output Volume and Control Method:
   Use a set of normally open passive output contacts with a volume of 3A 30VDC to control connected device.
4. Detecting Gas:
   Methane (natural gas)
5. Alarm Density: 10%LEL
6. Response time≤30s
7. Indicator

Work indicator: Green; Flashes in preheat state and illuminates in normal monitoring state.

Alarm/Fault indicator: Two-color indicator; Flashes red in alarm state, illuminates yellow in fault state and flashes yellow when the sensor expires.

8. Buzzer:

When alarming, the buzzer sounds about twice per second; When a fault occurs, the buzzer sounds once about every 10 seconds.

9. Self-test:

Press “Self-test”, indicator flashes three colors in turn with three sounds of the buzzer. 10s later, the normally open output contact closes, and 5s later the contact disconnects.

10. Service life of the sensor: Works accumulatively for 5 years with power

11. Operating Environment

Ambient Temperature: -10℃~ +55℃

Relative Humidity≤95%, non-condensing

12. Dimension: 121mm×87mm×58.5mm

13. Enclosure Protection Level: IP30
14. Material and Color of Enclosure: ABS, white
15. Weight: About 180g
16. Mounting Hole Distance: 60mm
17. Standard: GB 15322.2-2019

V Construction and Operation Principle

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

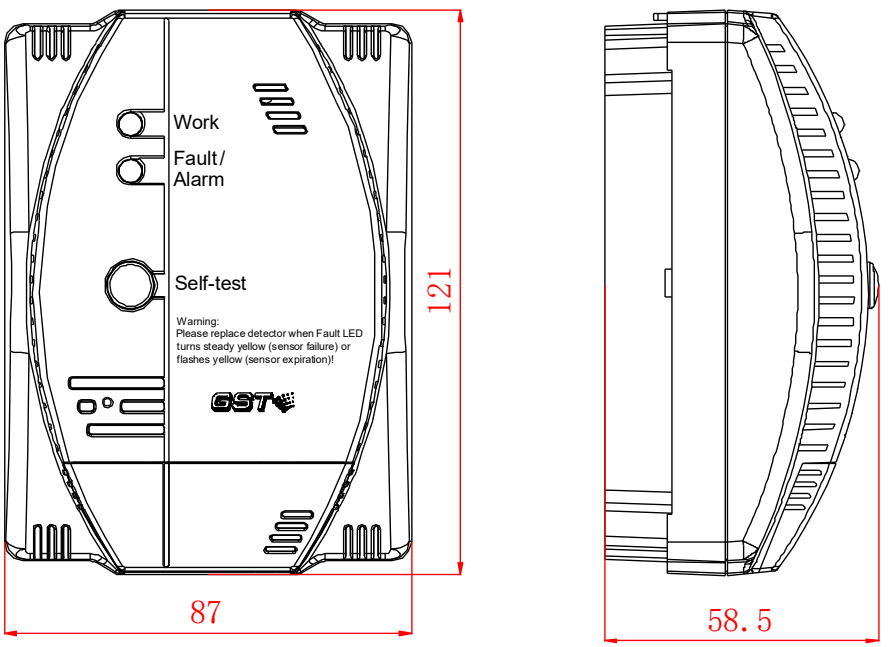


Fig.1 Appearance of the Detector

2. Operation Principle

Connected with the I/O joint of the built-in MCU directly or indirectly, each function module

of the detector can work normally by set interior program of the MCU.

Ⅵ Installation and Wiring

1. Optional installation location

The installation position of the detector (as shown in Figure 2) should be determined according to the actual situation such as the location of gas used and stove, but there are some principles should be followed:

(1) The detector should be placed in the same room with the stove.

(2) The detector should be installed at a vertical distance of 50cm or more from the gas source or stove (because natural gas and manufactured gas are relatively light, they will float upwards in the air and first gather above the room).

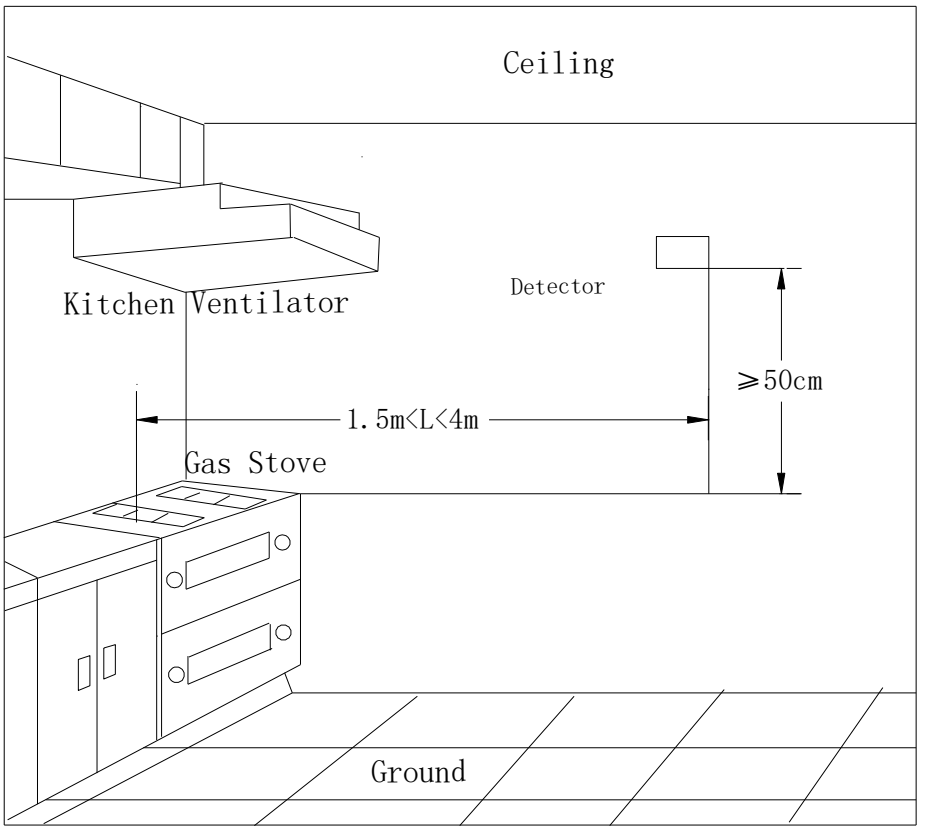


Fig. 2 Installation

(3) The detector should be installed between 1.5m and 4m to gas resource or stove.

In order to properly use the detector and prevent fault, please do not install it in the following locations:

(1) Where directly affected by the exhaust, steam and soot produced by the stove;

(2) Where near strong airflow, such as air-inlets, fans, doors, etc;

(3) Where near bathroom or places with a lot of vapors;
(4) Where temperatures below -10 ℃ or above 55 ℃ or outdoors;
(5) Where explosion-proof measures are required;
(6) Where the detector is partitioned with the gas devices.
2. External wiring terminals are shown in Fig. 3.

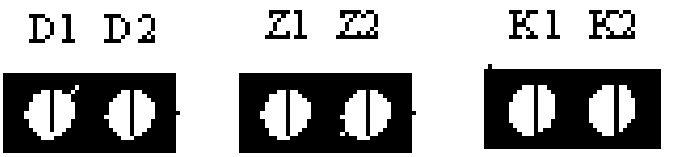


Fig.3 Wiring Terminals

In Fig. 3:

D1, D2: power cable, non-polarized;

Z1, Z2: Loop, non-polarized;

K1, K2: Normally open passive output contact, it will be closed when alarming.

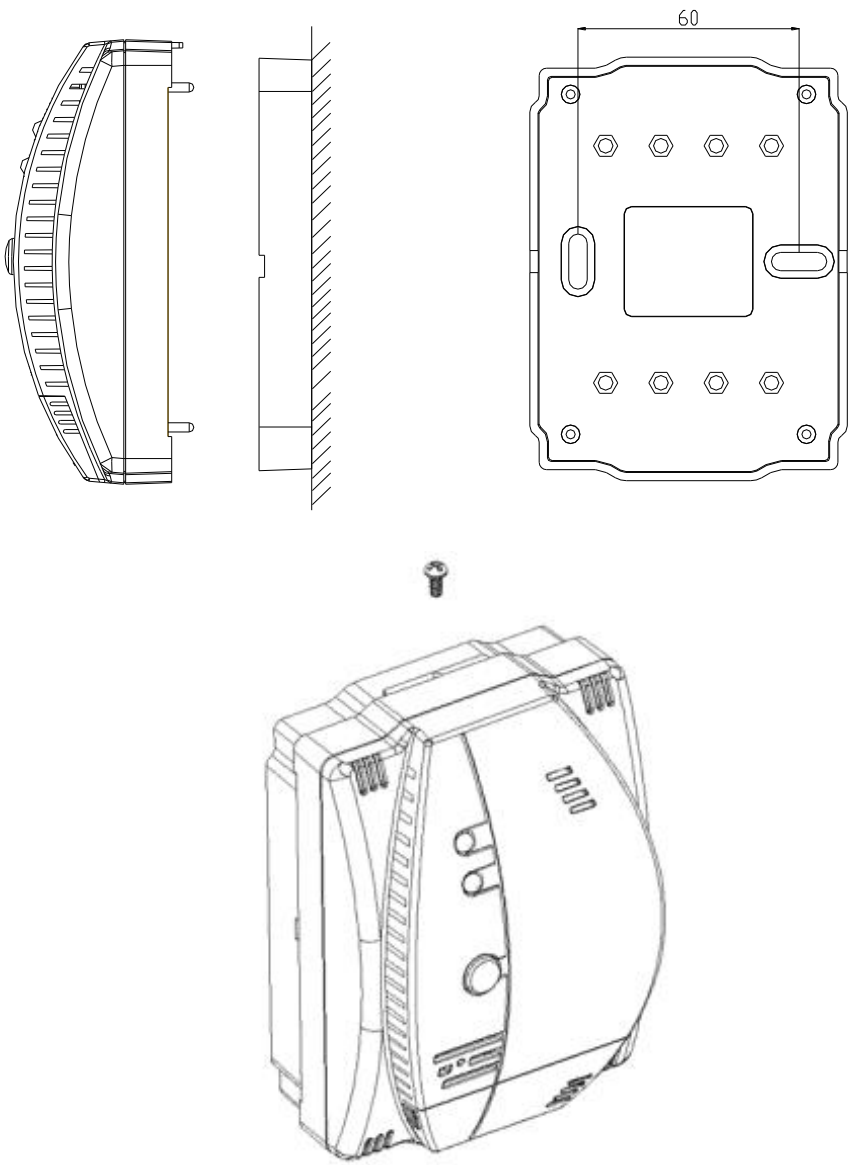
3. Installation Method

(1) Fix the base of the detector on the 86H50 embedded box (For wall-mounted detector, pay attention to the mounting direction of the base: the arrow on the base should be upward), then fix

the cables to the base according to instruction of wiring terminals.

(2) Install the detector onto the base.

(3) Twist tamper-proof screw (accessories) into the hole on the side of the base.



Wall-mounted Detector

Fig.4 Installation

4. Wiring

2.5mm^2 or above BV cable for power cable D1, D2.

1.0mm^2 or above fire-resistant copper core cable for loop Z1, Z2 and passive control cable K1, K2.

Ⅶ Operation

1. After wiring and checking, switch on the power, the buzzer will sound once and green indicator will flash. After preheating for about 4 minutes, the detector will enter the normal monitoring state. Green indicator illuminates when the detector works normally.

2. Alarm: When the concentration of combustible gas in the air exceeds the alarm threshold, the detector will emit a rapid “beep” audible signal, the alarm indicator (red) will flash and K1 K2 will close. When the concentration drops below the alarm threshold, the detector will automatically cancel audible and visual alarm signal and K1, K2 will automatically disconnect.

Note: The detector can only alarm when it enters

the normal working state after preheating. During the preheating period, the detector does not have alarm function.

3. Alarm handling: When the detector alarms, immediately open the window to ventilate the room, extinguish all ignition sources, avoid creating ignition sources and switching on/off various electrical appliances, check the cause of gas leakage and promptly turn to professional personnel for repair.

4. Sensor expiration: The sensor will be timed while the detector is working. When its cumulative use time reaches 5 years, the Alarm/Fault indicator of the detector will flash yellow to remind the user that the sensor has expired. Although the detector still has alarm function after sensor expires, it is recommended to replace the detector as soon as possible.

5. Alarm test method: The detector can be tested using a lighter. Ignite the lighter and blow out the flame, repeat several times to let the gas enter the detector until the detector alarms. Do not ignite the lighter directly towards the inlet hole of the sensor for a long time, in order to avoid

high concentration gas affecting sensor performance. Please note that the site is well ventilated during testing.

Ⅷ Troubleshooting

Item	Fault	Cause Analysis	Troubleshooting
1	The indicator does not light and “self-test” can not respond	24V power failure or the detector damage	Check 24V power supply. If normal, replace the detector.
2	The control panel reports the detector fault	24V power failure or the sensor failure	Check 24V power supply. If normal, replace the detector.
3	The detector	The sensitivity	

	cannot alarm during test	of the sensor decreases or the sensor failure	Replace the detector

If a fault occurs, please do not disassemble the detector unauthorizedly for maintenance. Notify GST or the local office of GST, we will handle it for you as soon as possible.

Ⅸ Scrap

Product scrapping shall be carried out in accordance with GB 29837-2013 Maintenance and Discard for Fire Detection and Alarm Products. Normally service life of fire detection and alarm products should not exceed 12 years, and that of gas sensitive elements in combustible gas detectors, and laser devices in fiber optic products should not exceed 5 years. When the product reaches its service life, it should be scrapped. If it continues to be used, the product should be tested and maintained according to requirements of the above-mentioned standard.

System performance testing should be also done. The product can only be used after all tests are passed.

X Disclaimer

GST shall not be liable for warranty in any of the following situations:

1. Product damage caused by failing to install or use according to the requirements of this manual.
2. Damage caused by high voltage of electric grids, unauthorizedly changing the external power of the machine or opening the machine cover without permission.
3. Damage caused by dampness, falling, touching, pressing or smashing.
4. Damage caused by ambient temperature or humidity exceeding the specified range of the product or by using product in a dusty environment.
5. Artificial damage caused by improper use for other reasons.

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