



GS241T-H02

Compound Carbon Dioxide Temperature and Humidity Alarm  
Operating Instruction

1 Product Overview

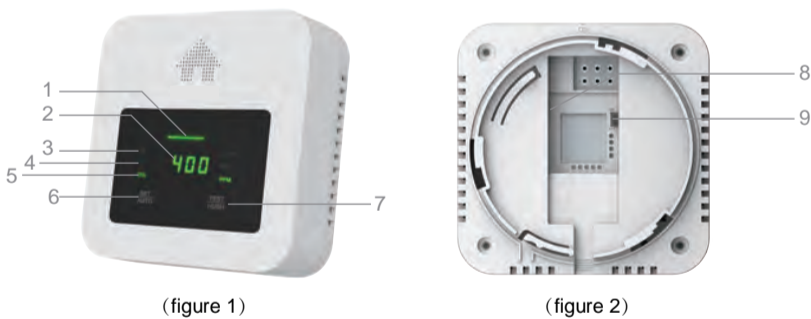
GS241T-H02 compound carbon dioxide temperature and humidity alarm, adopt high-precision NDIR carbon dioxide sensor, digital temperature and humidity sensor chip, is used for detection of the indoor environment of the carbon dioxide content, temperature and humidity and display in the screen, when they tested the carbon dioxide, temperature or humidity is beyond the preset alarm value, the product will be in the form of traffic lights remind users. Avoid excessive CO2 concentration to cause harm to human body, protect the safety of life and property.

This product is suitable for CO2 concentration, temperature and humidity monitoring in ordinary houses, offices, schools and other places. It is built with a 24-hour automatic calibration algorithm program, do not need manual calibration.

2 Product Features

- High precision NDIR carbon dioxide sensor, detection accuracy  $\pm(50\text{ppm}+5\%$  reading value)
- High precision ambient temperature detection, detection accuracy  $\pm 0.5^{\circ}\text{C}$  or  $0.9^{\circ}\text{F}$
- High precision ambient humidity detection, detection accuracy  $\pm 5\%$  RH
- With traffic light indicator, realize fast and intuitive abnormal reminder function
- You can choose Celsius or Fahrenheit to display, according to different areas of use habits
- Own display screen, easy to view
- With light intensity detection function, automatically adjust the display brightness
- With touch button, easy to operate
- The backup battery life is more than 12 hours
- It can be placed on the desktop or mounted on the wall
- The service life of the product can reach 10 years

3 Product Photographs



Number	Function	Number	Function
1	Traffic light indicator	6	SET/AUTO Button
2	Functional indicator light	7	TEST/HUSH Button
3	Temperature	8	Power adapter socket
4	Humidity	9	Backup power switch
5	CO2		

(Tab1)

4 Operating Instructions

This product has the function of CO2 concentration detection and alarm, as well as the function of temperature and humidity detection and display.

LED panel displays information such as CO2 concentration, ambient temperature and humidity

4.1 Power supply and startup

At the same time, the product is equipped with external AC power adapter for power supply and built-in backup rechargeable polymer lithium battery, which can work for 12 hours after AC power is cut off, and remind users to charge when the battery is low voltage;

The product is started when the AC power adapter is inserted or the backup power is switched on. It takes 3 minutes to warm up after the product is started. When AC is powered, the traffic light indicator window is always on, while when backup battery is powered, the traffic light indicator window flashes. When the backup battery is low voltage. The traffic light indicates that every 4S will be bright yellow.

4.2 CO2 detection and display

This product can detect and display the CO2 concentration of the surrounding environment and give corresponding warning. The default warning value is 800ppm, and the default alarm value is 1500ppm. If users have more reasonable suggestions please discuss with us.

Good condition: When  $\leq 800\text{ppm}$ , the warning window shows green color (See figure 3);

Normal condition: When  $800\text{ppm} \sim 1500\text{ppm}$ , the warning window shows yellow (See figure 4);

Poor condition: when  $\geq 1500\text{ppm}$ , the warning window will display red color (See figure 5).



4.3 Temperature detection and display

This product can detect and display the ambient temperature, (the temperature measurement range is  $-5^{\circ}\text{C} \sim 50^{\circ}\text{C}$  or  $23^{\circ}\text{F} \sim 122^{\circ}\text{F}$ ).



4.4 Humidity detection and display

This product can detect the ambient humidity.



#### 4.5 Touch button function

SET/AUTO:

Short press -- manually select the display temperature, humidity, CO2, and automatically scroll display;

Long press -- Convert the temperature unit to °C/°F, press for 3 seconds in the temperature display state;

TEST/HUSH: Short press

Long press - CO2 test alarm.

#### 4.6 Environmental light detection function

When AC power supply is normal, CO2, temperature and humidity are in the normal range, if the ambient brightness is very low (at night, indoor lights are all off), the brightness of the product's display screen and indicator light will automatically decrease to reduce the impact on users' sleep. Normal brightness is displayed when CO2 or temperature and humidity are detected abnormal.

#### 4.7 Installation

This product recommends wall installation.

Method of wall installation:

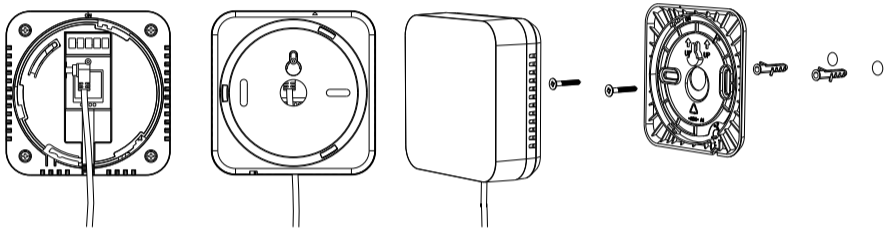
Select the appropriate installation location of the alarm to ensure that there are no wires or pipes in the vicinity or within the walls.

Determine the position of the two fixing screws on the alarm panel, the center distance of the two holes is 58mm, and drill the two diameters 5 mm depth of about 30~40mm hole;

Insert two expansion rubber plugs into the holes respectively in the installation package;

Screw the screws in the mounting package into the rubber plug and set aside about 3~5 mm;

Install the alarm as shown in figure 8.



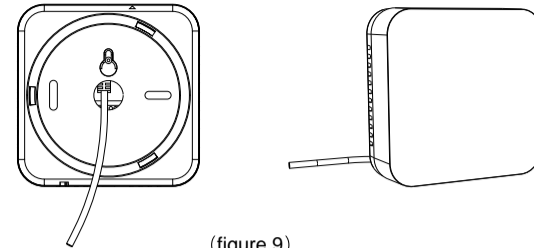
(figure 8)

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Free standing on table is also workable.

Method of free standing: (See figure 9)

Twist off the back cover, get adapter wire through the center hole of back cover, plug in, twist back the cover. Put the detector on a horizontal desktop.



(figure 9)

#### 5 Product Technical Parameters

Working voltage	DC5V (Power adapter 5V/1A)
CO2 measurement range	400 ~ 5000 PPM
CO2 measurement error range	±(50ppm+5% reading value) (Note 1 and Note 2)
Pressure dependence	+ 1.6 % reading per kPa deviation from normal pressure
CO2 measurement resolution and response time	1 PPM ; T90 < 120s
Temperature range	-5°C~ 50°C or 23°F ~ 122°F
Temperature measurement error range	±0.5°C or 0.9°F
Temperature measurement resolution and response time	0.1°C/°F; T90 < 120s
Humidity measurement range	0.0% ~ 99.9%RH
Humidity measurement error range	±5% RH
Humidity measurement resolution and response time	0.1% ; T90 < 600s
Backup battery running time	12 Hours
Extreme Work environment	Working temperature -5°C ~ 50°C, working humidity 0 ~ 90%RH(no condensation)
Storage environment	Storage temperature -10°C ~ 60°C, storage humidity 0 ~ 95%RH(no condensation)
Product service life	10 years (End of product service life display "End")
Level of prevention and care	IP40
Environmental protection standard	RoHS
Overall dimensions	99mm*99mm*37mm
Product weight	Net weight 268g

Note 1: In indoor air CO2 detection applications, the accuracy is measured after 24 hours of continuous operation of the equipment.

Note 2: The nominal accuracy of the data at room temperature +25°C and atmospheric pressure 101.3kPa, the device used for calibration and the gas have an uncertainty of ±1%.

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#### 6 Matters Needing Attention

6.1 In the process of product use, due to transportation, installation and other factors, may cause NDIR carbon dioxide sensor zero drift and detection accuracy reduction, the first use or change the use of the environment, should let the product continue to work for more than 24 hours, automatically correct the drift.

If CO2 concentration is obviously abnormal or above 1500PPM when it is used for the first time, manual calibration can be adopted to quickly correct the drift. The method of manual calibration is as follows: after the product is started, it is placed in a fresh outdoor environment for more than 5 minutes, and the wire or metal wire is short-connected to the manual calibration port as shown below for 2 seconds and then released. The equipment will be manually calibrated to 400PPM in 6 seconds.



6.2 This product cannot be used in factories, warehouses and other industrial environments that may be in high CO2 concentration for a long time. The CO2 detector used in industrial environments needs regular manual calibration.

6.3 If the product is to be placed in a narrow space, the space should be well ventilated, especially the two diffusion Windows should be in a well-ventilated position.

6.4 The product should be away from heat source, and avoid direct sunlight or other thermal radiation.

6.5 This product should not be used in the environment with high dust density for a long time.

6.6 Do not use the device in potentially explosive rooms.

6.7 Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels legible condition.

6.8 Do not open the device in case it is damaged.

6.9 Clean the device with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Do not use any sprays, solvents, alcohol-based cleaning agents or abrasive cleaners, but only clean water to moisten the cloth.

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6.10 The icon with the crossed-out waste bin on waste electrical or electronic equipment stipulates that this equipment must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.

#### 7 Troubleshooting

Number	Fault phenomenon	Cause analysis,	Solution
1	The device is not displayed, the indicator light is not on, and there is no response to the button operation	Controller is not powered on	Check the power supply
		Equipment failure	Contact the after-sales
2	The measurement of CO2 concentration value is not accurate	The 24-hour self-calibration process is not complete	Power on for 24 hours
		CO2 sensor failure	Contact the after-sales
3	Intermittent device voice low voltage	The backup battery voltage of the device is too low	Connect AC power and turn on the backup power switch for charging



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