



Water Heater Gas Leakage and Incomplete Combustion Detection Module

(Model: ZE33)

User's Manual

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Zhengzhou Winsen Electronics Technology Co., Ltd
ISO9001 Certificated Company

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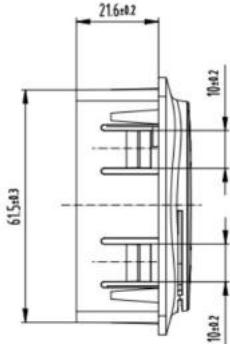
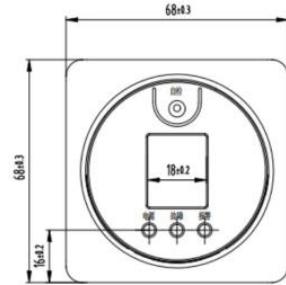
Please keep the manual properly, in order to get help if you have questions during the usage in the future.

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Water Heater Gas Leakage and Incomplete Combustion Detection Module

Description

Water heater gas leakage and incomplete combustion detection module using electrochemical carbon monoxide sensor and combustible gas sensor developed a special detection of gas water heater incomplete combustion and gas leakage module. It uses the electrochemical principle to detect carbon monoxide gas produced by incomplete combustion in the air, and has good selectivity and stability.



Sensor characteristics

The module has sound and light alarm output, and PWM digital signal output mode.

Main applications

Detection and alarm of gas leakage and incomplete combustion of household gas water heater.

Pic 1. Module Structure

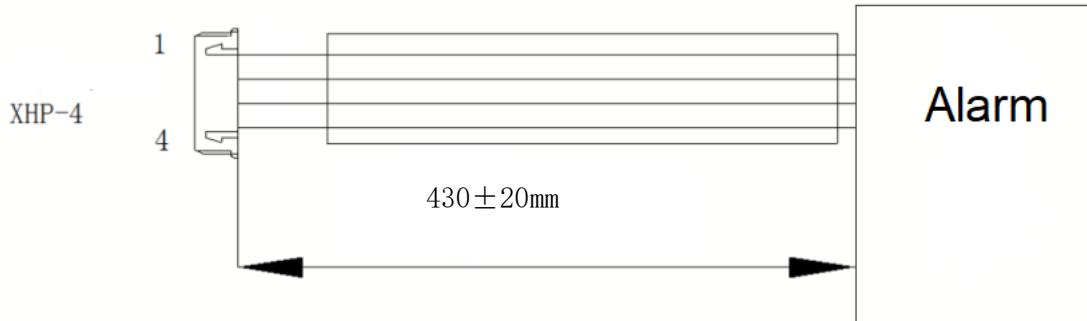
Technical Data:

Table 1.

Model	ZE33	Recovery Time	≤ 30 s
Detection Gas	CO, CH4	Detection Range	CO: 0~500ppm CH4: 0~5000ppm
Interfering gas	Alcohol, etc.	Alarm concentration	CO: Alarm 1: 250±50ppm Alarm 2: 350±50ppm CH4: 8%±3% LEL
Output	PWM	Working Temperature	-10°C ~55°C
Alarm mode	Audible and visual alarm	Working Humidity	15%-90%RH (non-condensing)
Working Voltage	5V DC	Storage Temperature	-10°C ~55°C
Preheat Time	CO 30s/CH4 3min	Lifespan	5 years (in air)
Response Time	≤ 60 s		

Pin Definition **Table 2**

PIN1	GND
PIN2	NC
PIN3	PWM
PIN4	+5V

**Pic2 : Module connection diagram****Function description**

After the module is powered on, the buzzer rings, the indicator flashes, and then the green indicator flashes into the preheating state. About 30 seconds later, the CO sensor is preheated, the green indicator will steady on, then the CO concentration can be detected and warned. About 3 minutes later, the CH4 sensor is preheated, and the CH4 concentration can be detected and warned. After pressing the self-test button, the CO indicator and CH4 indicator will blink red, and the buzzer will sound. After 10 seconds, the self-test will stop and return to the normal working state. When the concentration of CO or CH4 exceeded the alarm value, the corresponding indicator blinked red and the buzzer sounded at the same time, and the alarm was automatically stopped after the concentration was reduced.

PWM frequency refer to the following table:

Working Status	Preheat	Normal work	CO Alarm1	CO Alarm2	CH4 Alarm	Fault
PWM frequency (Hz)	100	100	20	14	8	33

Cautions:

1. Do not insert, remove or touch the sensor on the module.
2. Do not change or shift the installation status of electronic components.
3. Avoid contact with organic solvents (including silica gel and other adhesives), coatings, pharmaceuticals, oils and high concentration gases.
4. The module can not withstand excessive impact or vibration.
5. The module needs to be preheated for more than 20 minutes when it is first powered on.
6. Do not use the module in the system involving personal safety.
7. Do not install the module in a strong air convection environment.
8. Do not place the mold in high concentration of organic gas for a long time.

Zhengzhou Winsen Electronics Technology Co., Ltd

Add: No.299, Jinsuo Road, National Hi-Tech Zone, Zhengzhou 450001, China

Tel: 86-371-67169097

E-mail: sales@winsensor.com

Website: www.winsen-sensor.com

