国氢智感
SinoHySens

Hydrogen / Methane / Ammonia / Hydrogen Sulfide Gas Detector

User Manual

V1.1

Thank you for choosing our products, when you are ready to use this product, please read this manual carefully and follow the relevant operating procedures. In order to enable you to fully enjoy the services provided by our company, and to avoid damage to the machine or accidents by misuse, please keep this manual in a safe place so that you can refer to it for help in the future.

User service guidelines

1. Before using this product, please check carefully whether the accessories, product certificate and user warranty card are complete according to the product factory list.

2. Within 12 months from the date of sale, if the user complies with the storage, transport and use requirements and the quality of the product is below the technical specifications, the product can be repaired free of charge with the warranty slip.

3. This product can only be repaired by professionals, please don′t disassemble the internal circuit board or replace components at will, otherwise we won't be responsible for any consequences brought about.

一、Overview

This series of gas detectors are independently developed, functional and easy to operate gas detection products that can be installed in hazardous areas and non-explosion-proof areas of Class II explosion-proof environments.

Depending on the characteristics of the gas, the detector is equipped with different gas sensor components to detect the corresponding gas concentration in the surrounding atmosphere. The detector is optionally available with or without a display and an audible and visual alarm.

The product is designed, manufactured and tested in accordance with the following national standards.

Functional features

☆Real-time display of the concentration and indication of the current alarm status;

☆Color breakout screen with HD display and menu display;

☆Multi-point calibration to improve accuracy and linearity;

☆ Simultaneous output of 4-20mA standard signals and RS485 communication;

☆With a high-performance microprocessor for easy operation and a remote control;

☆ 2-stage alarm output, automatic opening of fans and

solenoid valves;

☆Modular design for easy wiring and access;

☆Data is easily backed up and factory settings can be restored with one click.

Precautions for safe use

The detector can be installed in hazardous areas and non-explosion-proof areas in Class II explosion-proof environments, and has a warning "Don't open the cover with electricity" in the obvious place of the housing.

The service life of the sensor of the detector is normally 2~3 years, but it may decrease due to the use environment, so it should be tested and maintained regularly every year. The detector has internal and external earthing bolts and an earthing symbol "⏚".

All fastening bolts or nuts and wire connections of the detector are provided with measures to prevent loosening due to vibration.

二、Technical features

Measurement principle	Catalytic combustion / electrochemical type (different medium detection principle is different)
Test subjects	Hydrogen / Methane / Ammonia / Hydrogen Sulfide

Measurement Range	H2:0-100%LEL / CH4:0-100%LEL/ NH3:0-100ppm / H2S:0-100ppm
Alarm set point	Low alarm point: 20% /High alarm point: 50%
Operating voltage	DC24V power supply
Structural material	Die-cast aluminum
Connection thread	M20*1.5 female thread
Explosion-proof	Exd IIC T6 Gb
Protection class	IP66
Product size	185×143×82mm
Output signal	4-20mA RS485 (communication protocol: Modbus RTU) Passive switching output (max. capacity: 250V 2A)
Using environment	-40℃～+70℃ Relative humidity(10-93)%RH(non-condensing) Atmospheric pressure 86kPa~106kPa Should be in a place without significant shock and vibration The surrounding environment should be free of

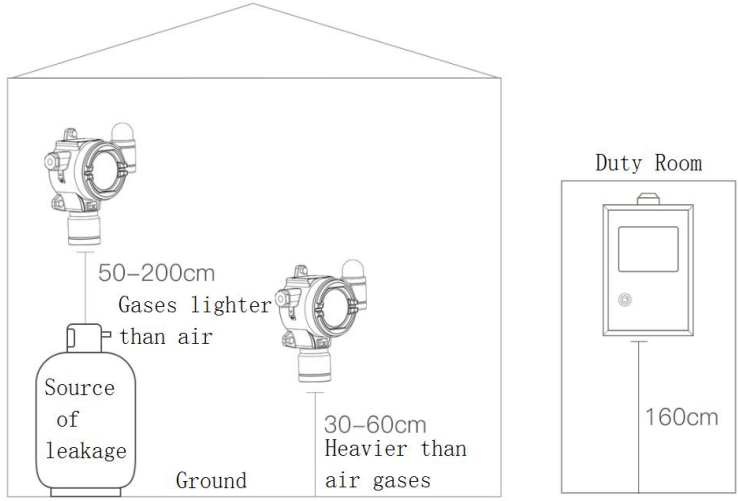
	corrosive metals and insulation-damaging media
Product weight	≤1.5kg
Sensor life	2 to 3 years in clean air

三、 Installation, Adjustment

3.1 Mounting position

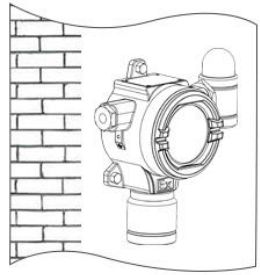
The detector is installed in the place where the gas to be detected is likely to leak, and the installation position is determined by the specific gravity of the gas to be detected in relation to the air. When detecting heavier gases than air, the detector should be installed close to the leak point, at a height of 0.3 to 0.6m from the floor (or floor) and with the sensor part downwards.

When detecting gases lighter than air, the detector should be installed close to the leak point, at a height of 0.5 to 2m above the source of release, and with the sensor part downwards.

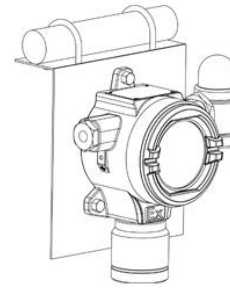


Note: The detector should be installed in a non-shock, non-vibration, non-strong electromagnetic field interference, easy access, and the installation site should have a clearance of not less than 0.5m and access between the surrounding pipelines or equipment.

3.2 Mounting method

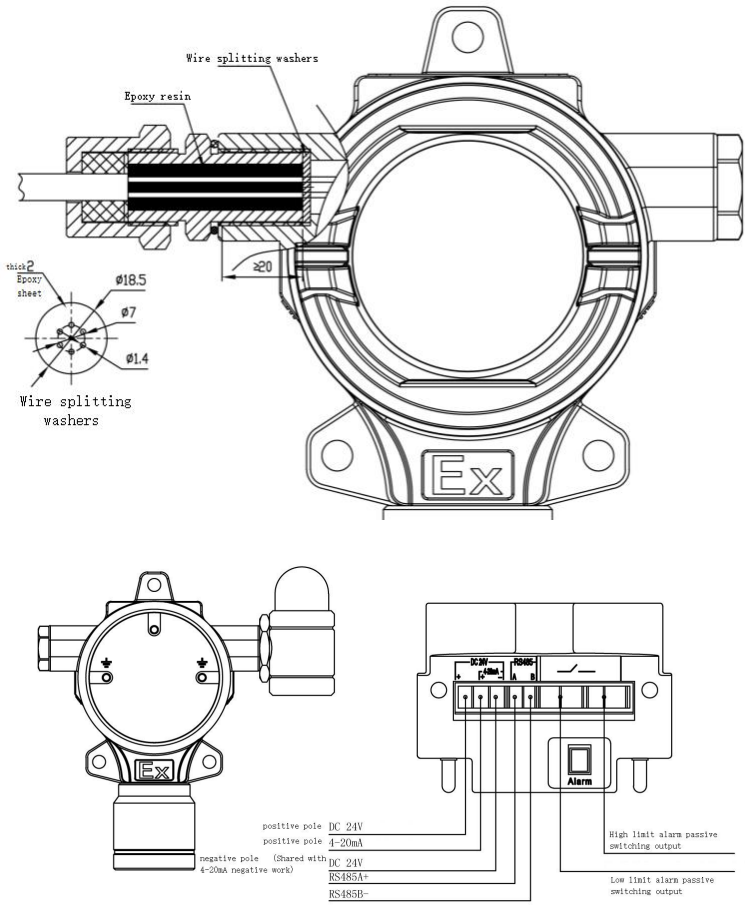


Wall mounting



Tube mounting

Distance between mounting holes: 48±3mm.



四、 Product wiring

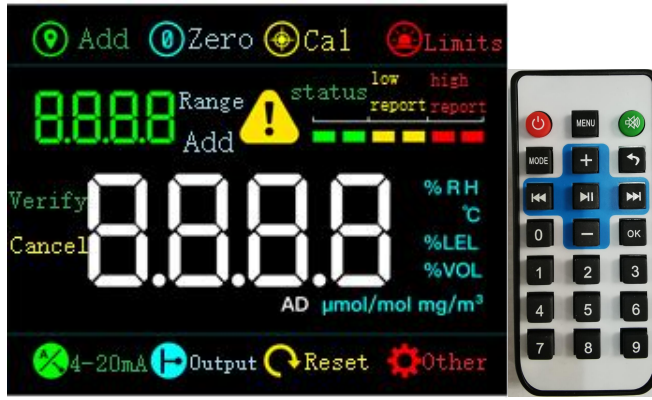
☆When wiring, the wires need to be threaded out at the split gasket on the inside of the terminal port and filled with 2CM of epoxy resin for sealing operation.

☆4-20mA is a 3-wire system (24V+ 24V- S signal).

☆The 485 uses a four-wire system (24V+ 24V- A+ B-).

☆Baud rate 9600 (4800 optional), no check digit, data bit 8, stop bit 1.

五、 Use, Operation



After the detector is powered on and running, the power on will display: range and version number, enter the main interface, long press the [Set] key, the upper and lower menus are expanded from left to right in turn, and so completely expanded after releasing the key, enter the password input interface, enter the password through the [numeric keypad], the password is the current address code of the device, enter the password again after the [Confirm] key pops up "Confirm ""Cancel" option, select by [Shift Left], [Shift Right] key, "Confirm" to enter the setting interface, "Cancel" to return to the main interface, press [Confirm]

key to select. After entering the settings menu, you can switch up and down the menu by using the [Move Left] and [Move Right] keys, and the menu is explained as follows:

Address	485 bus address setting
Zeroing	Zero calibration
Calibration	Gas calibration
Limit values	Low limit and high limit alarm settings
4-20	4mA calibration
Output	Low limit and high limit alarm output mode setting
Reset	Restore factory settings
Other	Number of calibration points set
Cancellation	Exit menu

The icon flickering means entering the level 1 menu, the icon and the indication text flickering together means entering the level 2 menu, and the option in the blinking state means that it is in an adjustable state.

5.1 Address

When in the "Address" option， press the [Confirm] button to enter the address， the default address of the detector is: 255， settings can be made via the [Increase] and [Decrease] keys or by

direct input via the [numeric keypad]，if the current display address is 0255, press [Delete] key to display 0000, you can input the address, after [Confirm] key again, "Confirm" and "Cancel" options will pop up, select by [Shift Left] and [Shift Right] keys, "Confirm" to save the current setting, "Cancel" not to save the current setting, [Confirm] key again to exit.

5.2 Zeroing

When in the "zeroing" option, press the [Confirm] key to enter the zero calibration state, then the LCD screen shows the AD sampling value, please put the detector into pure air, after the AD sampling value is stable, again [Confirm] key pop-up "confirm" "cancel" options, through the [left shift], [right shift] key to choose, "confirm" to save the current settings, "cancel" does not save the current settings, again [Confirm] key to exit.

5.3 Calibration

When in the "calibration" option, press the [Confirm] key, the LCD screen shows the calibration concentration value of the first calibration point (CAL1), press the [Confirm] key to enter the calibration state, at this time the LCD screen shows the AD sampling value and the current calibration concentration, adjust the current calibration concentration by [Shift Left], [Shift Right] key, please pass the detector into the standard substance, wait until the AD sampling value is stable, after the [Confirm] key pop-up

"Confirm" "Cancel" option, select by [Shift Left], [Shift Right] key, "Confirm" to save the current settings, "Cancel" not to save the current settings, again [Confirm] key to exit.

If there are more than one calibration point, adjust the current calibration point (CAL1/CAL2/CAL3) by using the [Shift Left] and [Shift Right] keys, then press the [Confirm] key to enter the calibration state, in the same way as above. Calibration concentration CAL1 <CAL2 <CAL3. When calibration is complete, select "Cancel" by using the [Shift Left] and [Shift Right] keys, then [Confirm] again to exit the current settings screen.

5.4 Limit values

When in the "calibration" option, press the [Confirm] key, the LCD screen shows the set value of the low limit alarm (low alarm), adjust the current low alarm set value through the [Increase], [Decrease] key, you can also adjust the low alarm set value through the [numeric keypad] operation, such as the current alarm value of 10, press the [Delete] key until the screen shows 0, press The [numeric keyboard] can complete the low alarm set value input, press the [confirm] key to save the high limit alarm (high alarm) settings, set the same method; [confirm] key after the pop-up "confirm" "cancel" options, through the [left shift], [right shift] key selection, [confirm] key to save the current settings. "Confirm" to save the current setting, "Cancel" not to save the current setting,

[Confirm] key again to exit.

5.5 4-20

When in the "4-20" option, press the [Confirm] key to enter, then the LCD screen shows the compensation value, the default is 50, press the [Increase] key to increase the value, the current output increases, press the [Decrease] key to reduce the value, the current output decreases; press the [Confirm] key again to pop up the "Confirm ""Cancel" option, select by [Shift Left], [Shift Right] key, "Confirm" to save the current setting, "Cancel" not to save the current setting. Confirm] key again to exit.

In order to ensure the accuracy of the value, you can use a multimeter during adjustment, adjust to the DC milliamp range, connect the test leads to the "S" and "-" of the detector, and adjust the current 4mA current through the [Increase] and [Decrease] keys.

5.6 Output

When in the "Output" option, press the [Confirm] key to enter, then the LCD screen shows the output mode of low limit alarm output (low alarm) 1, "Stad" is the standard output, the relay will be activated after the alarm. Switch output mode by [Shift Left] and [Shift Right] keys, "Puls" is the pulse output, the relay will be activated after the alarm and disconnected after 3s. Press the [Confirm] key again to save the output mode setting of high limit

alarm output (high alarm) 2, switch the output mode by [Shift Left] and [Shift Right] keys, press the [Confirm] key to save the output mode and exit.

5.7 Reset

When in the "Reset" option, press the [Confirm] key to enter the reset function, then the LCD screen shows the configuration information storage operation, "LOAD" is to load configuration information from the sensor module to the detector. Press [Confirm] to load the configuration information from the detector module to the detector. Switching operation by [Move Left] and [Move Right] keys, "COPY" is to back up the configuration information from the tester to the sensor module. Select "Cancel" with the [Shift Left] and [Shift Right] keys to exit the current setup screen.

5.8 Other

When in the "Other" option, press the [Confirm] key to enter the other 2 levels of function settings, then the LCD screen displays the first parameter configuration - calibration point number setting and the current setting number, "CALn " is the number of calibration points. At this time, press the [Confirm] key to enter the adjustment of the calibration quantity, which supports up to 3 points of calibration. Press the [Confirm] key again and the "Confirm" and "Cancel" options will pop up, select by [Shift Left]

and [Shift Right] keys. "Cancel" does not save the current setting, [Confirm] key again to exit the current 2 level function setting. Select "Cancel" with the [Shift Left] and [Shift Right] keys to return to the level 1 settings menu.

六、Maintenance, Repairs

1. The detector has been strictly calibrated before leaving the factory, please don ′ t replace the components at will after installation, if you need to replace them, they must be re-calibrated;

2. The service life of the sensor of the detector is normally 2~3 years, and its service life may decrease due to different usage environment, and should be tested and maintained regularly every year;

3. Prohibit the use of high gas concentrations to shock the detector sensor and prevent damage to the sensor;

4. Avoid frequent power failures of the detector, which can lead to unstable operation of the detection components;

5. To ensure the reliability and accuracy of the detector, it should be calibrated at regular intervals, which should not exceed one year.

七、 Fault analysis and troubleshooting

Common faults	Fault judgment	Treatment
Power indicator doesn't light up	Power supply failure	①Is the power cable loose ②Is the supply voltage normal, normal 24V ③Re-powering and observe ④Return to factory for repair and disposal
No response to ventilation	Sensor failure	①Checking the sensor cable ②Check for loose sensor sockets ③Replace the protective cover to see ④Replace the sensor to see
Show exclamation mark	Sensor failure	①Sensor needs to be recalibrated ②Replace the sensor

八、Warranty service provisions

1. This product is covered by a three-package service;

2. Free warranty for one year (from the date of purchase), please follow the instructions and precautions for use and contact the manufacturer in case of instrument failure;

3. The following conditions are not warranted within the warranty period:

① Not used in accordance with the precautions for use instructions, equipment damage and malfunction caused by;

②Self-disassembly, equipment failure and damage caused by renovation and maintenance.