



CH100-C series

User's guide

1-way control alarming device

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Product maintenance record form

Maintenance record				
Time	Name of maintenance	Maintenance personnel	The user to confirm	Note

Before using the device ,please first carefully read and follow the following information to operate the device:

- * Please don't use the defective detector.Before using,please check if there is crack or spare part missing.If yes,please contact the seller.
- * In order to keep the accuracy,please calibrate it once before the first time using.
- * Working voltage of the detector is DC18V to DC30V and recommended voltage is DC24V,The voltage exceeding DC30V will damage the detector.
- * Before using ,please make sure the housing is fixed.
- * There should be no speedy gas flow on the installation place Otherwise, it will influence the detection result.
- * Please don't expose the device to the gas which concentration is exceeding the range.Otherwise,it will influence the accuracy and shorten the sensor life
- * Please don't paint the sensor parts or detector.
- * Only sensor spare parts which are specified for FGD2- are allowed to be used.
- * It's suggested to calibrate the sensor once every 6 months.
- * In order to avoid human beings,please operate it when power off. Before opening the cover,make sure there is no mixture gas of combustible gas and air.Otherwise,it will possibly cause fire or explosion.
- * Please avoid water or dust to come into the housing.
- * Please don't expose the device to the environment which has electric shock,strong magnetic field or serious continuous mechanic shocking.
- * When not using,please take out the battery from the remote controller.
- * Installation must abide by the national and local regulations.
- * It's forbidden to disassemble,adjust or repair the device without permission.
- * All the operation inside the device must be carried by professional persons.

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Safety Instructions




Precaution: it is forbidden to uncover the electrified inspector at the working spot.

- * All operations shall be carried out according to local legal regulations or on-site working procedures
 - * Any operation in relation to the inner part of the inspector shall be handled by well-trained workers
 - * Check wiring of the inspector before powering-on
 - * The interval between powering off and a second powering on shall be no less than 5 minutes
 - * The inspector must be powered off before being connected to other devices or added to other access points
 - * The inspector shall use independent power instead of the power connected to large electric devices.
 - * It is forbidden to damage outer shell of the inspector, or the anti-explosion and shield performance will be serious affected.
 - * If no ground wire is available, the inspector can be wired to the ground through ground terminal for the safety cause.
 - * Any unauthorized maintenance and disassemble is strictly forbidden
 - * Please power off the inspector before the following operations
 - * A shield cover is required at the open working spot
1. Wire the terminal of the inspector or connect and disconnection the terminal
 2. Wire to ground
- * It is forbidden to fit the inspector to the following places:
1. Any place beyond detection limits of temperature and humidity
 2. Any place with strong erosive gases
 3. Any place with large quantity of dust, salt and metal powder
 4. Any place easy to be splattered by water, oil and chemical liquids
 5. Any place to be directly shocked or impacted

7.1 RESTOR:

If user conduct incorrect calibration operation when gas concentration is uncertain and result in abnormal reading, this operation could restore the factory calibration parameters and return to factory status.

7.2 Zero point calibration:




If the target gas concentration is below 0 while the reading of the device is not, then you need to conduct the zero-point calibration. Turn menu to "zero calibration / 0.CAL", press OK, wait the displayed value to be stable(whatever the value is, as long as it's a stable value), press OK to enter the confirmation menu, then press  to select "save", finally press OK to confirm saving. If there's no need to save, you can directly press "cancel" to exit.

7.3 Standard point calibration

If the device reading does not match the target gas concentration and the difference is beyond the nominal accuracy of the device after the device is used for a period of time (or replacement of the sensor), then you need to conduct the standard point calibration.

7.3.1: Turn menu to " standard gas concentration / STD.GAS ", confirm the reading is the same as the standard gas, if they are not the same, press OK to modify.

7.3.2: Access the standard gas with certain concentration to the device detection port.

Turn menu to " standard point calibration/ STD.CAL ", press OK to enter, wait the displayed value to be stable(whatever the value is, as long as it's a stable value), then press OK to enter confirm menu, press  to select "save", then press OK to confirm saving.

1. Introduction

CH100-C 4-way wall-mounted gas detection alarm device is used to detect concentration of flammable gases or liquid vapor within the lower explosion limit in the air and the concentration of toxic gases, the system uses single-pair control and advanced microprocessor control unit with fast response. When the flammable gas concentration in the environment reaches or exceeds the preset alarm value, the controller immediately emits an audible and visual alarm reminding you to take safety measures in time, and the controller will drive the exhaust or take other peripheral action to prevent the occurrence of explosion, fire and poisoning, so as to protect the safety of life and property.

This device has (4 ~ 20) mA current signal output to connect with other devices; And it is equipped with two switch control signal output, which can control the exhaust and other equipment.

一、Product features

- 1.1 independent unit
- 1.2 simulation menu, convenient operation
- 1.3 secondary alarm settings, more powerful
- 1.4 intelligent system, convenient online zero calibration
- 1.5 good anti - interference, stability
- 1.6 standard 4 ~ 20mA signal output
- 1.7 alarm point linkage output, relay output always open
- 1.8 continuous monitoring target gas concentration, four digits digital tube display measured values
- 1.9 three LED lights display operating mode and three LED lights indicate the state



二、 Product specifications

CH100-C		
Technical indicators	gas detection accuracy	±3%FS (probe & device integrated)
	temperature detection accuracy	±2@25℃ (only probe & device integrated has this function)
power supply	operating Voltage	220VAC, 50/60Hz
	power supply rated power	25W (internal AC / DC power supply rated output power)
input interface output interface	analog signal	optional, 1~2-way 4~20mA input (2/3-wire)
	external output voltage	24VDC, 0.5A
	switch signal	2-way relay output (passive), contact capacity 1A, 250VAC
	audible and visual alarm	1-way
communication Interface	analog signal	optional, 1-way 4~20mA output
	RS-485	optional, 1-way RS-485 interface, support MODBUS protocol, customizable for master / sub mode
exterior	size	290*240*82(LWH)
	weight	3.5Kg
	shell material	cold plate paint
working environment	temperature	-20℃ ~ +60℃
	humidity	10% ~ 95% RH (no dew)

三、 Installation Notes


3.1 choose install position


position to install CH200 single channel gas detection alarm device








The following recommendations for the user reference:

- A. Fire control room, instrument power distribution room, where there is a special duty in the room.
- B. Installation height is about 1.5 meters higher from the ground, a height convenient to operate is preferred.






六、 Parameter setting (warning)

6.1: In the main interface, press “menu”, display “set” menu, then press  OK to enter.

6.2: Press  to find the parameters, the current parameter value is displayed below the subject.

6.3: If you need to modify, press  OK/ to enter edit mode, then press  or  to modify the parameters, then press  OK/ to enter confirmation menu, then press  or  to select cancel or save menu, finally press  OK to confirm operation. If there's no need to save, you can directly press “cancel” to exit.









七、 Calibration (range, zero point calibration, target point correction)

In the main interface, press “menu”, then press  until it display calibration/CAL menu, then press  OK to enter. At that time, the LCD display 0***, it is input password mode. Press  or  to enter the password, then press  OK/ to confirm. Repeat the above to enter 4 digits' password, the default password is “9999”, without correct password you can not conduct the calibration.

After entering the secondary menu, you can do the following:

A: Select “channel 1/AIN-1” to modify the corresponding gas range, or standard gas depth, and zero point calibration, calibration operation.

B: Select “channel 2/AIN-2” to modify the corresponding gas range, or standard gas depth, and zero-point calibration, calibration operation.

C: Press  to check the parameters, the current parameter value is displayed below the subject. If you need to modify, press  OK/ to enter edit mode, then press  or  to modify the parameters, then press  OK/ to enter confirmation menu, then press  or  to select cancel or save menu, finally press  OK to confirm operation. If there's no need to save, you can directly press “cancel” to exit.

5.2 The controller powered on:

When the controller is powered on, the start interface appears, the digital tube displays some of the relevant parameters of the controller in turn, and began to preheat the countdown.

The controller conduct hardware detection on the acquisition board. If the acquisition board is faulty, the error code "ADC.ERR" is displayed. Finally, the controller detects whether the 4 ~ 20mA port has an access probe.

If channel 1 has an access probe, 1-on will be displayed, then normal concentration value will be displayed;

If channel has no access probe, 1-off will be displayed, then 3 "---" will be displayed, controller will no longer process signal of this channel.

If the probe is detected when power on but disconnected after a period of time, or the probe is faulty without current signal, then 4 "----" will be displayed.

V1.00	-> Software version number
R 100	-> Range
L 20.0	-> Low at point(AL)
H 50.0	-> The points higher(AH)
16	-> The instrument preheats the countdown, seconds
1 - ON	-> The input channel is connected to the probe
---	-> The channel is not connected to the probe and the channel is disabled
----	-> This channel probes the line/fault in the running process

5.3 Normal working state of controller

In normal working state, the home page displays the current gas concentration value.

Three status lights on the left:

Normal: green light

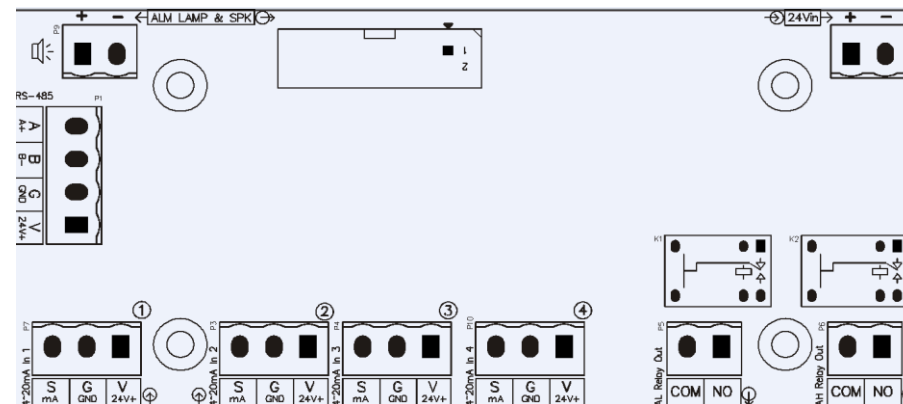
Low concentration warning: red light. When current concentration value is lower than the preset value, the light will turn red. (oxygen not included, Oxygen determine the condition is: the current concentration value is higher than the preset value, the light will turn red.)

High concentration warning: red light. When current concentration value is higher than the preset value, the light will turn red

3.2 installation steps

Use the expansion bolts to fix the device to the wall mounting position, make sure the direction of the sensor is down, otherwise the device will not work properly.

四、Installation and wiring



4.1 Product interface description

Note: some of the interface are optional, not all devices are equipped, actual configuration refers to the packing list.

P2: Control panel power supply input, DC 24V power supply.

- : negative

+ : positive

P1: RS-485 communication interface , half duplex type, A+/B-2-wire

A+: RS-485 cable

B-: RS-485 cable

G: GND; external (probe) negative power supply

V: 24VDC+。 external(probe) positive power supply

(note: There are 2 types of RS-485 controller interface, host/sub mode, either of them is optional. Please confirm the device before using. The host mode is used to connect to probe, collect and display the data received from probe, the sub mode is used to connect to PC, uploading the collected data)

P3/P4: 1/2-way 4~20mA current input interface, connected to probe.

S: 4~20mA current signal input;

G: GND; external (probe) negative power supply, common port of current signal;

V: external (probe) positive power supply

P5: low warning relay output, contact type NO always on.

P6: high warning relay output, contact type NO always on.

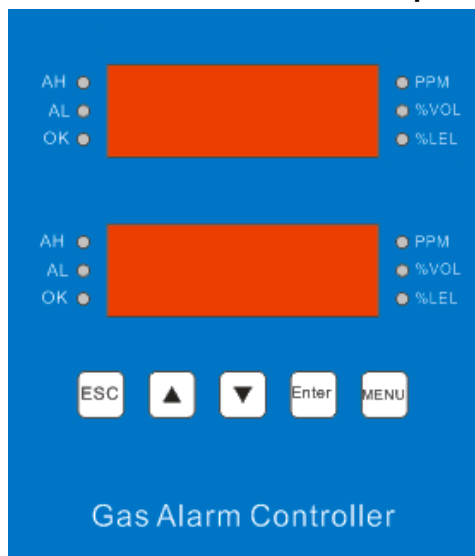
P7: current signal output interface, connect to the upper controller.

S: 4~20mA current signal output

G: GND. common port of current signal, GND

五、 Operating instructions

5.1 the structure of menu and operation



uman-computer interaction is made up of 1 ~ 2 LED digital tube display, and 5 keys.

⬆️ up/+ key. In normal mode, press this key to flip menu; In edit mode press(hold on press) this key to increase the number.

⬇️ down/- key. In normal mode, press this key to flip menu; In edit mode press(hold on press) this key to decrease the number.

⬇️ OK/confirm key. In normal mode, press key to enter submenu; In edit mode press this key to save/confirm

MENU Menu. Press this key to enter setting menu.

ESC cancel/exit/mute key. In normal condition, press this key back to upper menu; In edit mode, press this key to cancel current modify operation. When the device alarms, press key to mute; The mute only works for once, when then device alarms again, there will still be audible and visual alarm.

5.2 structure of menu:

