



OC-8000

Gas detection controller

Operating Manual

Henan Oceanus Import & Export Co., Ltd.

**Notice:**

1. The personnel for operating and testing the device should firstly read the Operating manual. Only when according to our company operation manual to use the device, it could work normally.
2. If repair the device or replace the parts, should be operated by the professional guidance and the parts should be from our company, or our company will not be responsible for the maintenance.
3. The device should be installed and used in the safe place without the explosive gas environment. OC-8000 gas detection controller is not the explosion-proof equipment, so please use it under the safe area and the installation should be according to the national regulations.
4. The resistance type touch screen will be damaged by the scratch easily, so please not use the hard material to operate the screen.
5. Connect the external equipments according to the relay capacity strictly, in order to avoid damaging the device. If the external equipments beyond the capacity, please add the AC contactor.
6. When usage of the device, it should connect with the earth reliable.
7. When connect the terminal or other operations, the power should be cut off.
8. If cut off the power and power on it again, the time interval should be more than 5s.

## **I. Description**

OC-8000 gas detection controller with the 8 inch LCD display touch screen and dual CPU architecture design, on the shell only one the physical silencer key; Embedded 32 bit ARM architecture processor, with the real time operating system and rich embedded software, to complete the detector signal sampling, data real-time calculation, displaying control, big capacity storage, system fault inspection, alarm and peripheral drive and other functions.

OC-8000 gas detection controller is composed of the main board, parameter control board, TFT touch display screen, audible-visual alarm, power supply switch, etc. It with four relay output to connect the fans, solenoid valve, etc., according to real applications; it designed with the national standards and with the advantage of the quick response, strong anti-interference ability, high reliability, easy maintenance, etc.

### **Features:**

8 inch LCD display screen with the touch operation;

With 8 channels 4~20mA signal input;

With 2 channels RS485 digital signal: one channel for connection with the gas detector, one channel for connection with the PC;

The system with double 32bit CPU design, when one fault, the system still could work normally;

With 4 channels passive relay contact output;

With the audible-visual alarm function.

**Remark:**

Please do not expose the instrument to direct sunlight;

Please do not store it under the environments with High temperature and humidity, strong electrostatic.

Please do not use any corrosive liquid to clean the controller.

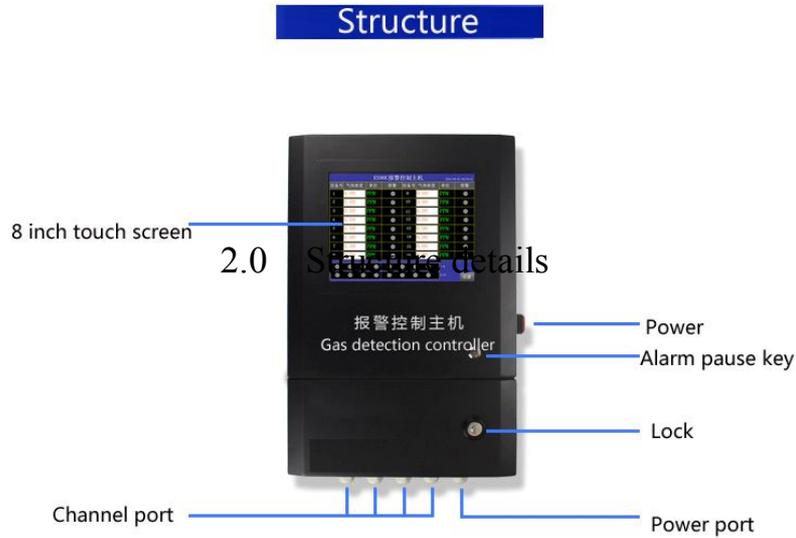
Please do not install the device under the area with massive dust, salt and metal powder.

In order to ensure the safe usage, the shell should be connected with the earth reliable.

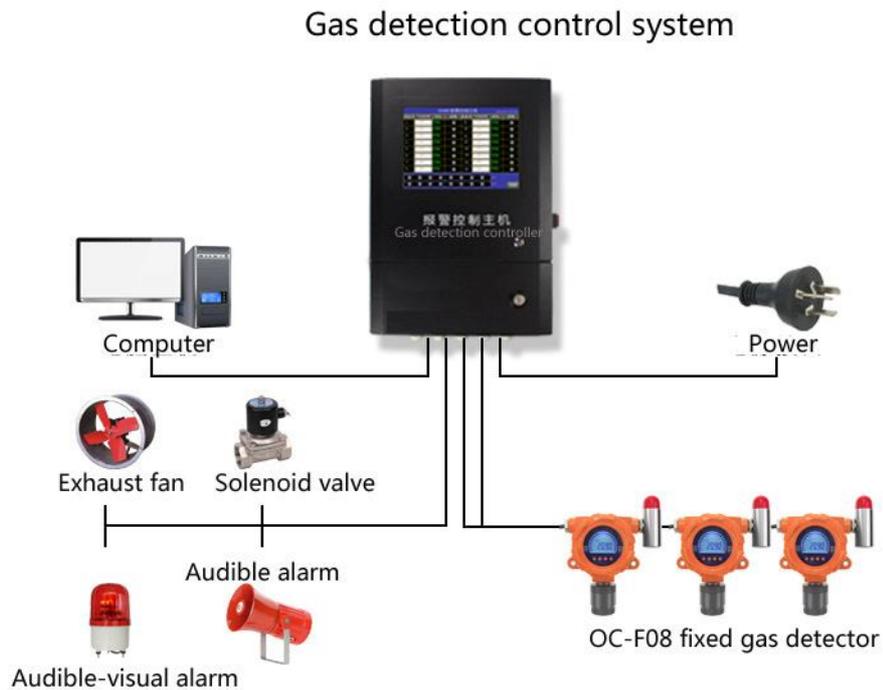
Inside of the shell with the 220V high voltage power supply, so please should be careful.

OC-8000 gas detection controller is designed, produced and tested according to the national standard GB 16808-2008.

## II. Structure



### 2.1 System composition



#### 2.1. The system installation details

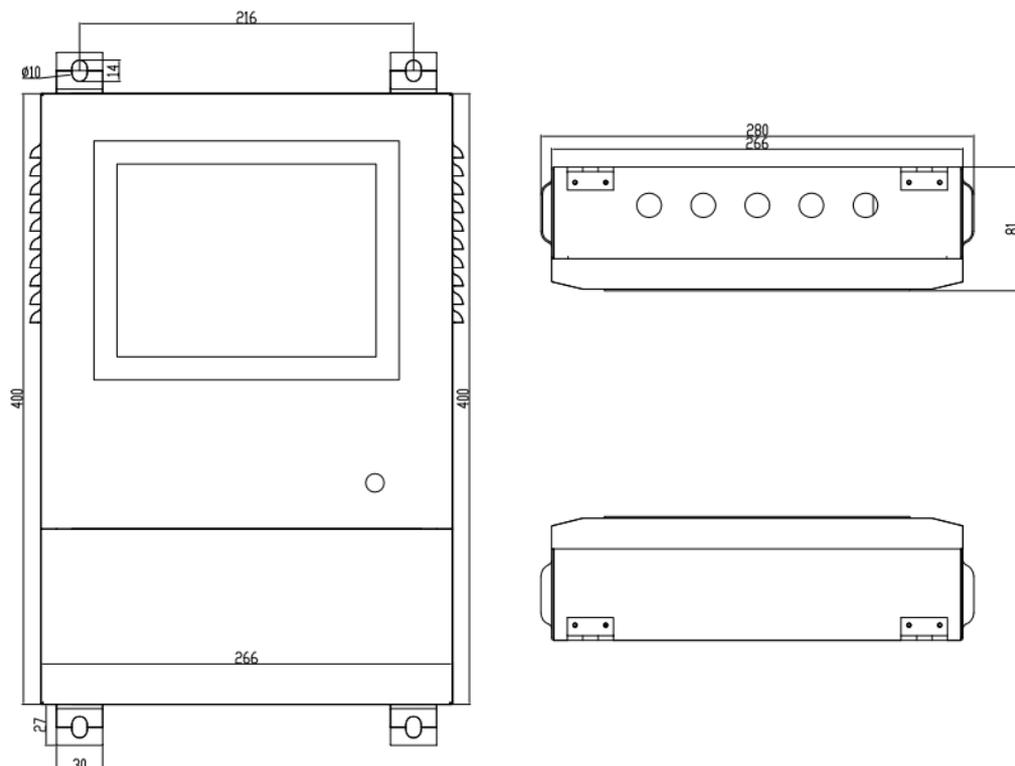
OC-8000 gas detection controller is the center of the system, could connect the 32pcs gas detector(Customized for 64pcs ) and the other equipments as the picture.

## 2.2 Installation for the gas detection controller

### 2.2.1 Installation notes:

- a. Before the installation, please refer to the related regulations to ensure the safety.
- b. The process of installation should be according to the national related standards.
- c. The installation and usage should be the place without the explosive gas.
- d. Correct installation and connect the earth reliable to increase the anti-interference ability.
- d. Please ensure the distance between the controller and gas detector within the working range.

### 2.2.2 Controller size



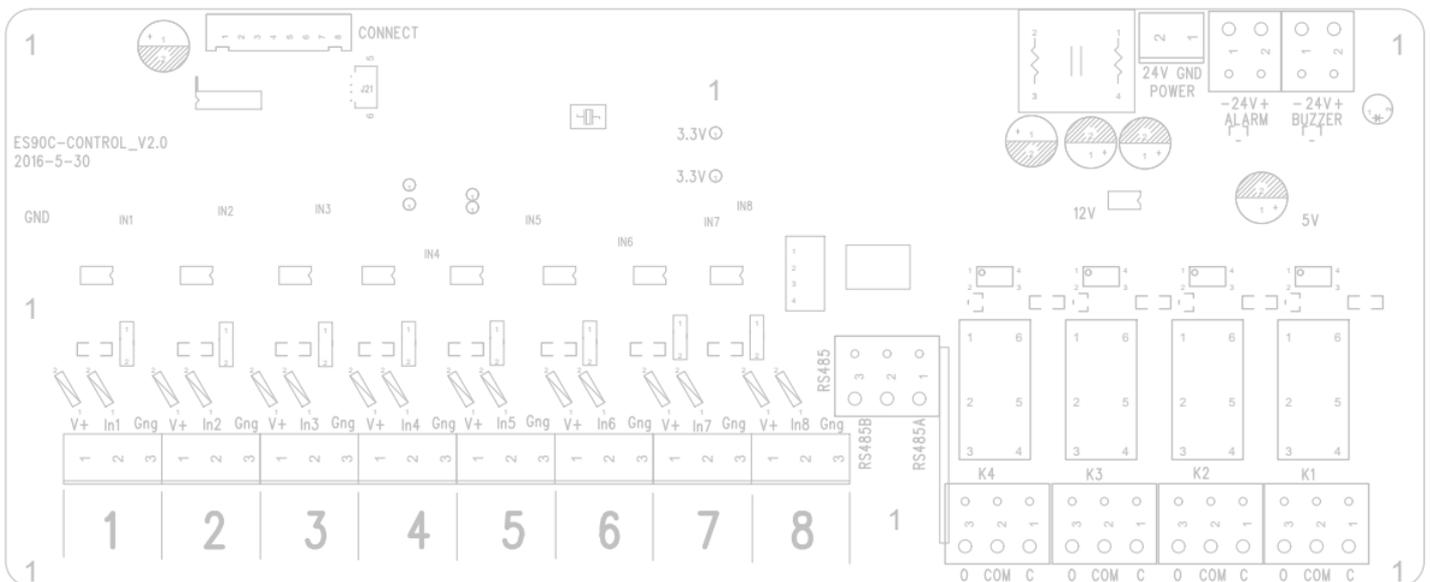
### 2.2.3 Installation mode

Installation mode: Wall-mounted.

Installation steps:

- a. Choose the suitable position, after the installation should be easy operation and the display screen could be seen clearly. Also, the space should be enough large to open controller to connection, maintenance and adjustment.
- b. Confirm the hole position and then drill out the appropriate mounted bracket screw hole.
- c. Fix the device on the wall and then use the screw to install it.

### 2.3 Connection instruction



### 2.3 Internal connection details

## Introduction:

1. From left 1~8 is the 4~20mA connection terminal, could connect 8pcs gas detector with 4~20mA signal output, for each terminal: V+ means the power +24V output; Inx: 4~20mA input; Gnd: Ground.
2. RS485 interface could connect the 32pcs gas detector with RS485 signal output.
3. Four passive relay output: O is the Normal Open contact point; COM is the relay common end; C is the Normal Close contact point.
4. Power is the control board supply power +24V and the ground connection terminal.
5. Alarm is the visual alarm connection terminal;
6. Buzzer is the audible alarm connection terminal.

## Remarks:

All the connection operation must cut off the power.

In the explosive and dangerous place, the users should equip the professional cable lead-in device. And ensure the device connect with the earth reliable.

All the wiring should be in line with the national standards and the industry regulations. The DC signal line and the AC power line can't be in one shielded cable.

### III. Function Introduction

According to the above installation method and wiring method, after the machine is installed, it can be energized to start the test. Make sure all wiring is correct before power on!

#### 3.1 Power on and Self test

When the controller power on, it will enter into the boot interface, under this interface the system will be in the state of the self test. In the process of self test, the audible-visual alarm will auction and this means it with the normal function, but the relay no auction to avoid misoperation other equipments. After the self-test is completed, it will enter into the normal working mode.

**3.2 Normal working mode:** Different channels measurement interface as the following:

#### Different channels display

设备号	气体浓度	单位	气体类型	是否在线	报警
1	0.00	PPM	O3	●	●
2	0.00	PPM	O3	●	●
3	0.00	PPM	O3	●	●
4	0.00	PPM	O3	●	●

1~4 channels

设备号	气体浓度	单位	气体类型	低报	量程	状态
5	0.00	PPM	EX	0.00	0.00	●
6	0.00	PPM	O2	0.00	0.00	●
7	0.00	PPM	CO	0.00	0.00	●
8	0.00	PPM	H2S	0.00	0.00	●
9	0.00	PPM	CO2	0.00	0.00	●
10	0.00	PPM	CH4	0.00	0.00	●
11	0.00	PPM	O3	0.00	0.00	●
12	0.00	PPM	NH3	0.00	0.00	●

5~8 channels

设备号	气体浓度	单位	报警	设备号	气体浓度	单位	报警
9	0.00	PPM	●	9	0.00	PPM	●
10	0.00	PPM	●	10	0.00	PPM	●
11	0.00	PPM	●	11	0.00	PPM	●
12	0.00	PPM	●	12	0.00	PPM	●
13	0.00	PPM	●	13	0.00	PPM	●
14	0.00	PPM	●	14	0.00	PPM	●
15	0.00	PPM	●	15	0.00	PPM	●
16	0.00	PPM	●	16	0.00	PPM	●

9~16 channels

通道号	气体浓度	单位	状态	通道号	气体浓度	单位	状态
17	0.00	PPM	●	17	0.00	PPM	●
18	0.00	PPM	●	18	0.00	PPM	●
19	0.00	PPM	●	19	0.00	PPM	●
20	0.00	PPM	●	20	0.00	PPM	●
21	0.00	PPM	●	21	0.00	PPM	●
22	0.00	PPM	●	22	0.00	PPM	●
23	0.00	PPM	●	23	0.00	PPM	●
24	0.00	PPM	●	24	0.00	PPM	●
25	0.00	PPM	●	25	0.00	PPM	●
26	0.00	PPM	●	26	0.00	PPM	●
27	0.00	PPM	●	27	0.00	PPM	●
28	0.00	PPM	●	28	0.00	PPM	●
29	0.00	PPM	●	29	0.00	PPM	●
30	0.00	PPM	●	30	0.00	PPM	●
31	0.00	PPM	●	31	0.00	PPM	●
32	0.00	PPM	●	32	0.00	PPM	●

17~32 channels

After the system enter into the normal measurement mode, the controller will display different interface according to the different channels, the above picture is for the 4 channels, 8 channels, 16 channels, 32 channels. The displaying information include the Date, Time, Device number, Setting, Gas concentration data, Unit, Gas type, State, Alarm, etc.

When the controller connect with the gas detector, the indicate light  will change into green color and the Gas concentration will display on the controller screen accordingly; if the controller not connect with the gas detector, the indicate light will be grey and the gas concentration will display “-.-”; when the gas detector connect with the controller and alarm, the indicate light will be red.

In the process of measurement, when the gas concentration level up to the alarm value, the gas detection controller will alarm, the indicate light  will be red, also the audible-visual alarm will begin to work; now if press the suspend key, the alarm sound will be closed, but the alarm light still working and flashing and the screen will flash the “ALM PUSE”; if press the suspend key again, the flashing words will disappear.

### **3.3 System setting**

On the measurement interface pressing the setting key on the screen will enter into the System Setting interface. The users can set the time, check the historic data, Copy the data to U disk, Self-test the system, etc.

Remark: Some functions only for partial channels.

### 3.3.1 Time setting

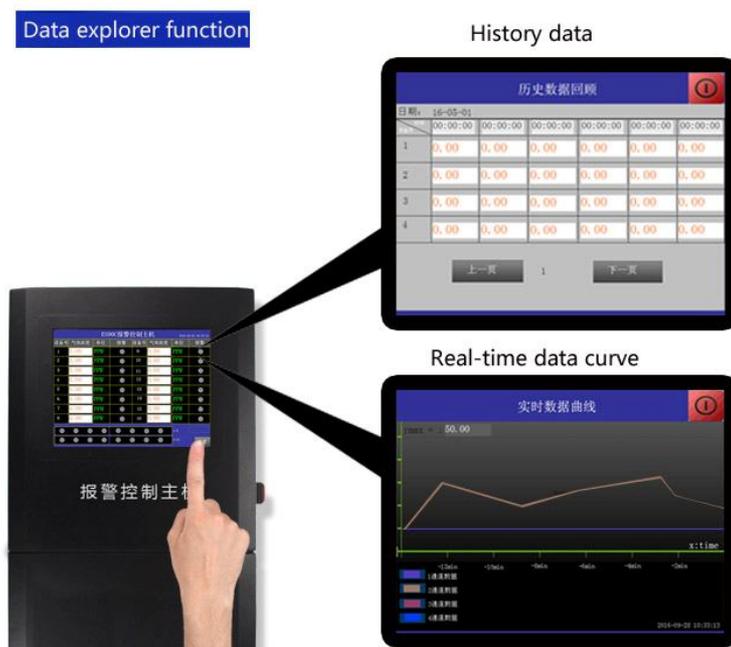
Clicking the Time area, then will appear the Time setting interface. Now input the time in order of the “Year-Month-Date Hour: Minute: Second”, then pressing the “Enter” to finish the setting; then clicking the time synchronization button, or the data storage time will be different with the displaying time. Because the time of the display screen and main control panel time is independent.

### 3.3.2 Formatted storage area

Clicking the “NO” will come out the system keyboard, and inputting into the “YES” will format, after the format is completed, the “NO” will be changed into “OK”, meanwhile, the system will be back to the measurement interface automatically.

Format will delete all the historic data records, so we suggest the users not operate it.

### 3.3.3 Check historic data



On the System setting menu clicking the Check historic data will enter into the historic data interface, pressing the Up or Down key to check the historic data.

Remark: This function only for the 4 channels controller.

### **3.3.4 Copy data to U disk**

On the interface of Copy data to U disk, inserting into the U disk will copy the data and could be checked on the PC.

### **3.3.5 System self test**

This function is used to test the relay and audible-visual alarm performance if normal.

On the Self test interface clicking the different buttons will test the accordingly functions: if press the relay button, the related relay will have auction, pressing the button again, the relay will disconnect. When the relay auction, the alarm will flash but no sound; if press the button of audible-visual alarm, it will work, if press again will stop alarming.

### **3.3.6 Factory maintenance**

This function is for the manufacturer to set some parameters and need the password, now only open for the manufacturer.

#### IV. Normal fault and solution

<b>Fault</b>	<b>Reason</b>	<b>Solution</b>
Starting up failure	No connect the power	Check the 220V power line connection
Connection with the gas detector failure	Wiring wrongly	Check the RS485 if reverse for A and B; Check the gas detector power supply if normal
Bad contact with the gas detector	Connection terminal is bad contact	Check the connection terminal
Screen bad touch	Touch screen need calibration	Click the screen 20times continuously and enter into the calibration
When alarm no sound	Maybe in silence state	Press the alarm suspend key; Check the BUZZER terminal if loosen.

#### V. After-sale service

Before the gas detector controller leave our factory, our company has calibrated and tested it according to the related requirements. We promise

that the product is accord with the national and industry standard.

1. Before the usage of the product, please check the product and accessories according to the products list if complete. If miss some parts, please contact the manufacturer or distributor at once.

2. OC-8000 gas detection controller with the warranty of 12 month(from the day leave our factory). Our company will disclaim all responsibility for the damage caused by misuse, manmade damage or the natural disaster. If it can't work normally because of the quality problems, we will repair or replace parts without charge. If beyond the warranty period, we will charge for the maintenance service.

### Technical Specification

Item	Description
Product name	Gas detection controller
Display	8 inch TFT LCD touch screen
Power supply	AC220V±15%, 50Hz±1%
Consumption	≤10W(according to different channels)
Output voltage	DC24V±15%
Input signal	4~20mA/ RS-485
Relay output	4 relay output with optional NO or NC
Relay contact capacity	5A, 30VDC or 5A, 220VAC
Alarm mode	Audible, visual

Installation mode	Wall-mounted
Suitable gas detector	Gas detector with 4~20mA signal output
Gas detector quantity	≤64pc(At most)
Communication distance	≤2000m
Working temperature	-10℃~+50℃
Working humidity	10~95%RH (Non-condensation)
Size	400mm*280mm*80mm
Weight	About 3.6kg
Protection grade	IP54
Quality standard	GB 16808-2008    GB 15326-1994

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