OC-4000

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-4000 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. 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.

5. When usage of the device, it should connect with the earth reliable.

6. When connect the terminal or other operations, the power should be cut off.

7. If cut off the power and power on it again, the time interval should be more than 5s.

I. Description

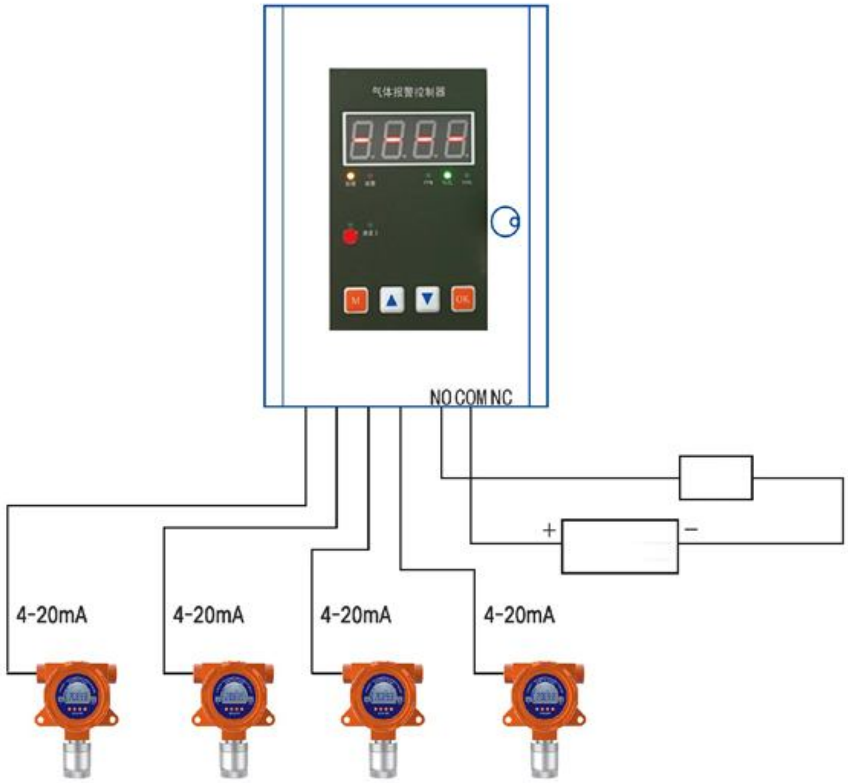
OC-4000 gas detection controller with different channels for choice: 2 channels, 4 channels and 8 channels, It consists of a general metal shell, a switching power supply, a main board, an interface board, a alarm, and so on.

OC-4000 series gas alarm controller (hereinafter referred to as controller) can be used as an industrial gas alarm control system with our 4-20mA current output gas detector.

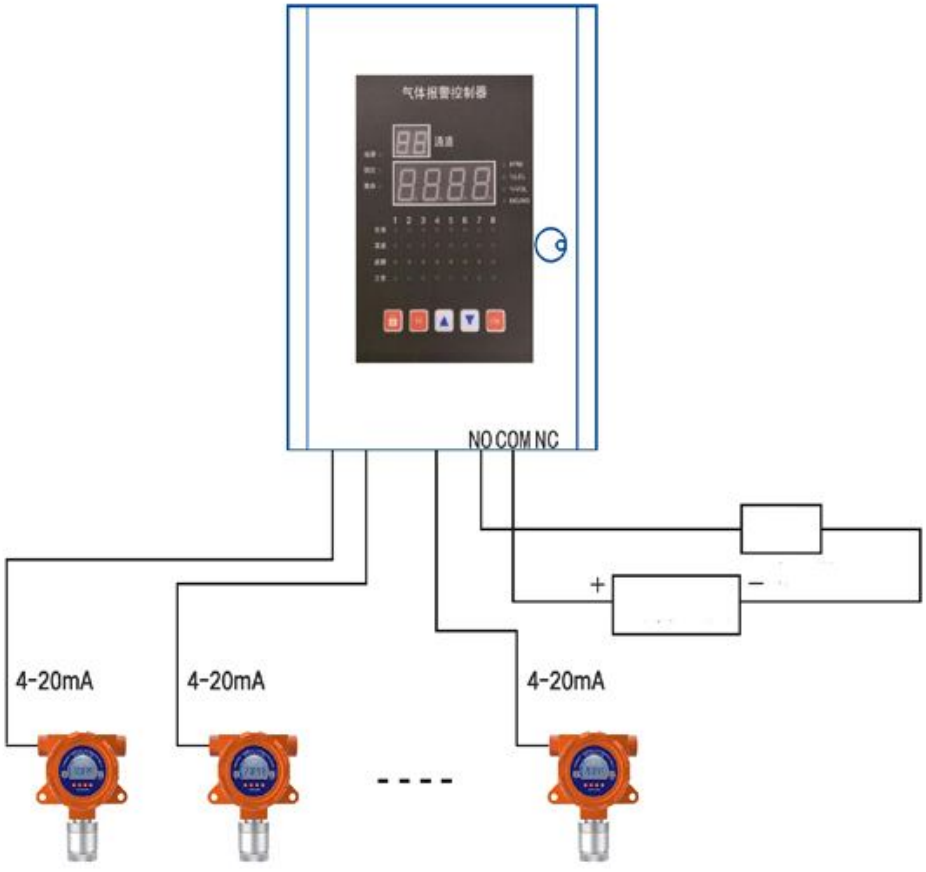
When the air or liquid is evaporated in the air, the detector generates a current signal which is directly proportional to the concentration of the detected gas in the air. The signal is transmitted to the controller, then the concentration of the inspected gas is displayed after the controller is processed. When the measured gas concentration reaches or exceeds the set point, the controller sends out sound and light alarm signals and outputs related control signals, and starts corresponding control devices, so as to avoid major accidents.

OC-4000 Gas detection controller adopts modular design, each channel corresponds to a gas detector, it can monitor various gases such as flammable gas, toxic gas and oxygen through the combination with suitable detectors.

II. System composition

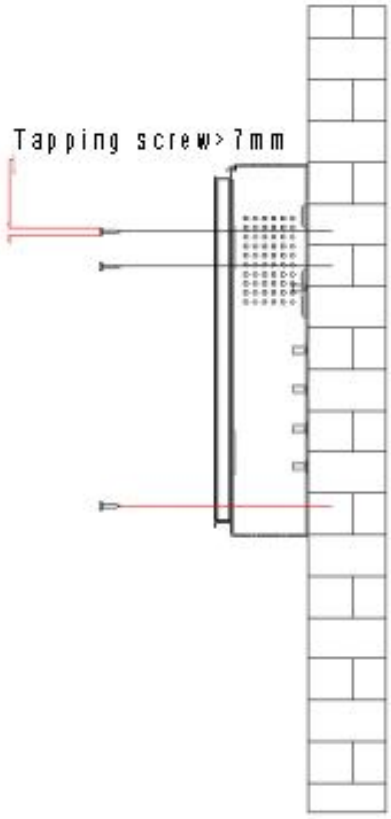


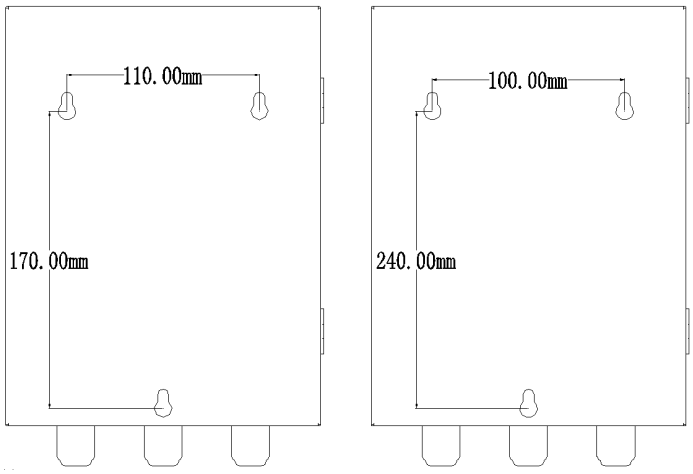
OC-4000 Gas detection controller with Four channels



OC-8000 Gas detection controller with Eight channels

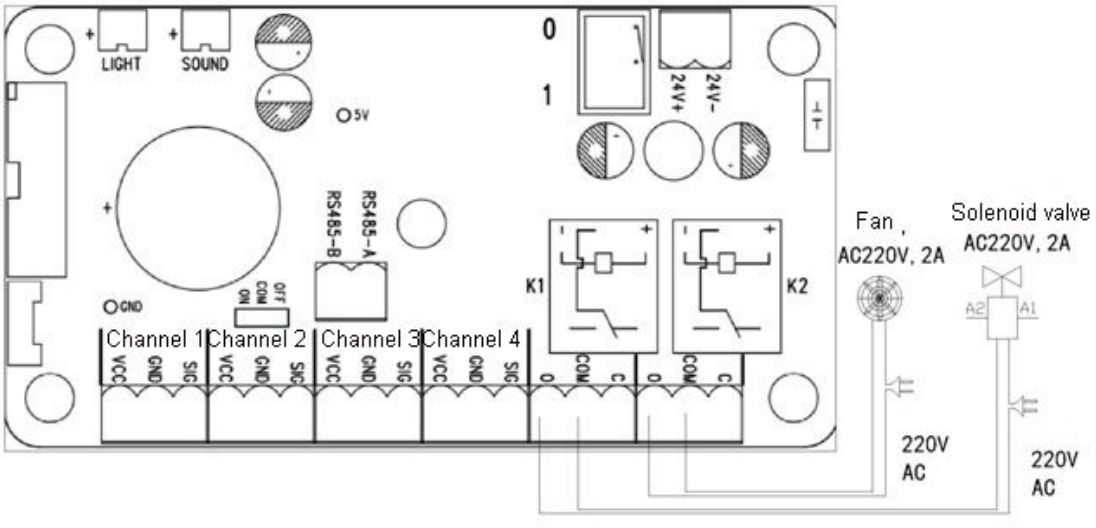
III. Installation instructions





2-4channels 8channels

Ⅳ. Terminal and Connections Instructions



OC-4000 Gas detection controller with 2 channles / 4 channels

1.VCC:24V+

2.GND:24V-

3.SIG:4-20mA Signal input

Connection tips:

1.Connect the VCC of controller with the VCC of detector

2.Connect the GND of controller with the GND of detector

3.Connect the SIG of controller with the 4-20mA of detector

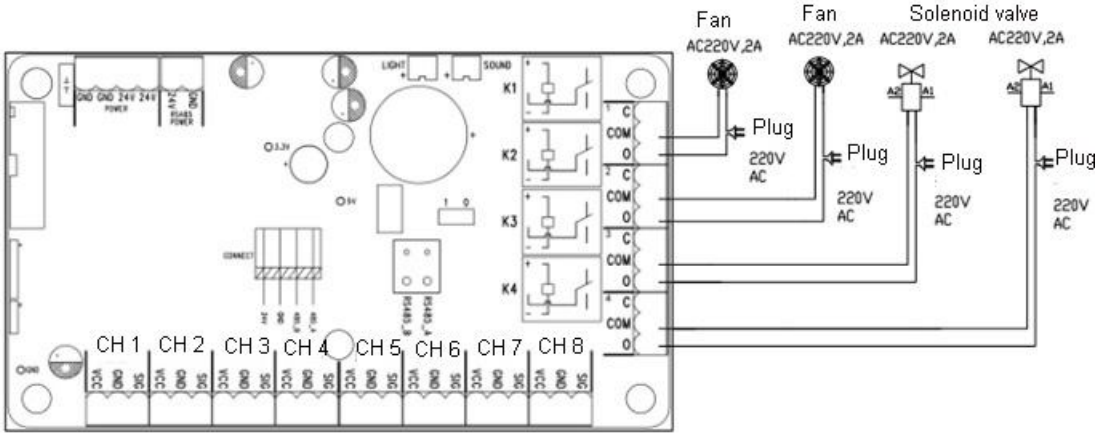
4. COM：Relay common port　　O：Relay normal open contact

C：Relay normal close contact

5. An external device, such as a solenoid valve, a fan, etc.

LIGHT：External connect with alarm lamp (24V+)

SOUND：External connect with alarm (24V+)



OC-8000 Gas detection controller with 8 channels

1.VCC:24V+

2.GND:24V-

3.SIG:4-20mA Signal input

Connection tips:

1.Connect the VCC of controller with the VCC of detector

2.Connect the GND of controller with the GND of detector

3.Connect the SIG of controller with the 4-20mA of detector

4.COM：Relay common port O：Relay normal open contact

C：Relay normal close contact

5.The relay can connect with the external device, such as a solenoid valve, a fan, etc.

LIGHT：External alarm lamp (24V+)

SOUND：External alarm (24V+)

Ⅴ. Function introduction

2 channels / 4 channels gas detection controller:

OC-4000 gas detection controller with Two channels

OC-4000 Gas detection controller with Four Channels

1. Four channel indicator light: switch with channel (two channel only two channel indicator).

2. One general fault indicator: when the current channel has a fault will light, when the trouble shooting will be off.

3. One general alarm state indicator: the alarm state changes with the channel.

4. Three unit indicator light: change with channel switch.

5. Two alarm relay: no output when fault, when the channel concentration reaches the low threshold of alarm, the relay will act. (remark: the relay K1 moves when the monitoring value reaches the low threshold of the alarm, and the relay K2 can choose the output mode).

6. Single channel with the built-in the sound and light alarm: machine

reset, detection the fault, or when the alarm needs to alarm, the sound alarm will start. Remarks: when the alarm occurs, the machine will automatically lock the channel in the alarm state (the alarm type is the most high level alarm), it will continue to work in monitoring mode when pressing the OK key.

7. Alarm type: when the channel is malfunction, the concentration is lower than the low threshold value, the concentration is higher than the high report threshold, the alarm will be produced. The order of alarm is in turn: high alarm > low alarm> fault alarm.

8. Input signal: standard 4 ~ 20mA input.

8 channels gas detection controller:

OC-8000 Gas detection controller with Eight channels

1. Power indicator light: power on the machine, if the voltage is normal, the indicator light is lit.

2. Menu indicator light: if enter into the menu will bright, if exit will be off.

3. Channel lock indicator light: when the channel is locked, it is lit.

4. The two bit channel indicates the digital tube: the number of the corresponding channels is displayed with the channel switch.

5. One line channel normal working light: the channel is light when the channel under normal working.

6. One line channel fault indicator: when the channel fails, the indicator lights up.

7. Two line channel alarm state indicator light: display the channel alarm state, when it reaches the alarm value, it is bright.

8. Four channel unit indicator light: change with channel switch.

9. Four alarm relay: the output mode and the response channel can be selected.

10. One built-in the sound light alarm: machine reset, detection of fault, or when the alarm needs to alarm sound alarm start.

11. Alarm type: when the channel is malfunction, the concentration is less than the low threshold value, the concentration is greater than the high report threshold, the alarm will be on.

12. Alarm order is in turn: high alarm > low alarm > fault alarm.

13. Input signal: standard 4 ~ 20mA input.

Ⅵ. Introduction of key function

Menu / Return

Under the inspection mode, long press this key for more than 3 seconds, after release will enter into the menu.

Under the menu mode, short press this key and release it, will return to the front menu.


Up / Right

It is valid only in the menu mode.


Down / Left / number increase / lock the current display channel

Menu mode: down / left / number increase.

Monitoring mode: lock the current display channel.

OK / Silencer

Monitoring mode: silencer.

Menu mode: OK.


Lock

After the press, the channel will be locked, and then unlocked once press or after the waiting 10min. When the channel locked, use  can switch locked channel.

Special attention: 2/4 channels controller does not have a lock button, does not have the support of the function.

Ⅶ. System workflow

Power supply → Self-checking → Settings → Normal work

In the process of system work, in addition to the channel correction mode, in other cases, the system backstage works uninterrupted according to the current parameters.

After entering into the channel correction mode, the system will temporarily lock the corrected channel. When exiting, the parameters are automatically updated, and the system will work according to the updated parameters.

7.1 Parameter setting

The gas detection controller is equipped with standard factory parameters when they leave the factory. But sometimes they may need to be re - adjusted when they are used by customers. In most cases, there are no order and conditions for the adjustment, except for the following:

Low threshold value, high report threshold, full range. (when the set is lower than the high message can not be saved)

The order of their adjustment is generally:

The decimal point position of high to low threshold, the threshold, the full-scale Report

Note: it is not possible to save when the set lower threshold value is greater than the high report threshold

The relationship between them:

0< low report threshold < high threshold value < full range

7.2 Enter the setting menu

Press [M] for 3s, enter into setting menu, it will display C-08.

Cyclic switching the menu option by [△][▽] .

7.3 Setting menu content

C-01 channel 1 setting: choose this by press [ok], enter channel1.

C-02 channel 2 setting: choose this by press [ok], enter channel2.

C-03 channel 3 setting: choose this by press [ok], enter channel3.

C-04 channel 4 setting: choose this by press [ok], enter channel4.

C-05 channel 5 setting: choose this by press [ok], enter channel5.

C-06 channel 6 setting: choose this by press [ok], enter channel6.

C-07 channel 7 setting: choose this by press [ok], enter channel7.

C-08 channel 8 setting: choose this by press [ok], enter channel8.

C-AL channel AL setting: choose this by press [ok], enter all channel setting.

Remark: Four channels controller with the C-03 and C-04, Two channels without this.

H-01 relay 1 setting: press [ok], enter relay 1 setting.

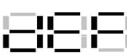
H-02 relay 2 setting: press [ok], enter relay 2 setting.

H-03 relay 3 setting: press [ok], enter relay 3 setting.

H-04 relay 4 setting: press [ok], enter relay 4 setting.

V1.E4 software version: press [ok], enter check the software

version.

 restore factory settings: press ok, enter restore factory settings, use up/down key to choose yes or no.

After the execution of the recovery factory setting, the menu list is returned, and the system automatically updates the current parameter to be the factory default parameter.

7.4 Introduction of relay setting

2/4 channels: relay K2 output mode

 relay K2 setting: after press ok, Relay K2 action when the monitoring value is higher than the low threshold value.

 relay K2 setting: after press ok, Relay K2 action when the monitoring value is higher than the low threshold value, and the output is a pulse.

 relay K2 setting: Relay K2 action when the monitoring value is higher than the high threshold value.

 relay K2 setting: Relay K2 action when the monitoring value is higher than the high threshold value, and the output is a pulse.

Note: This equipment is economical equipment and does not configure the fault alarm relay.

The two alarm is only output for the alarm.

8 channels:

 Selection of relay action mode: press , there are 3 mode for

selection, as follow:

 press ok, to select this option to monitor the concentration to reach low threshold relay action.

 press ok, to select this option to monitor the concentration to reach high threshold relay action.

 press ok, to select this option when the channel state is failed and the relay action.

 relay output type selection: The output type is divided into ordinary output and pulse output. The output pulse is a 5S pulse, press ok , if choose  , output is a pulse; if choose  , output is ordinary.

 relay corresponding channel enable options: This option can select which channels to enable the current set of relay actions. (that is, if a channel is lost, the channel will not move the corresponding relay, no matter what state it is.) press ok , there are 8 options correspond to 8 channels, respectively:

 the channel 1 option corresponding to the relay: press ok, switch  or  by up / down key, choose the  relay will enable the channel 1 to enable the relay; choose the  relay will not enable the channel 1.

 the channel 2 option corresponding to the relay, same as CH01.

CH03 the channel 3 option corresponding to the relay, same as CH01.

CH04 the channel 4 option corresponding to the relay, same as CH01.

CH05 the channel 5 option corresponding to the relay, same as CH01.

CH06 the channel 6 option corresponding to the relay, same as CHO1.

CH07 the channel 7 option corresponding to the relay, same as CH01.

CH08 the channel 8 option corresponding to the relay, same as CH01.

7.5 Introduction of channel parameters

AL-L low threshold setting: enter this menu, will display as follow:

display low threshold, modify it by up / down key. After modified, press ok to save, if press M not save.

AL-H high threshold setting: operation same as AL-L.

Decimal point setting: enter it display , modify it by up / down key. After modified, press ok to save, if press M not save.

full range setting: operation same as AL-L.

Oxygen mode switch: enter this menu, display

, choose by up/ down key, press OK confirm.

Note: oxygen mode, the channel value is less than the low threshold value or higher than the high threshold value of the alarm.

unit setting: there are 4 kinds for choice, PPM, LEL, VOL, Mg/M3 , modify it by up / down key. After modified, press ok to save, if press M not save.

4mA correcting: Correcting the current value received by the current channel to 0.

20mA correcting: do not provide customer modification.

Channel switch: to set channel open or close.

485 address setting: same as AL-L.

Ⅷ. Specific operation steps

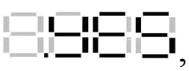
8.1 Restore factory settings

When the self-checking is finished, it will be in the monitor interface, press M 3 seconds and then release into the menu setting interface. Enter the menu display , then select by up / down, until , restore factory settings.

8.2 Channel open or close

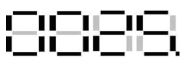
For example as close channel 2 :

After self-checking finished, it will be in the monitor interface, press M 3 seconds and then release into the menu setting interface. Choose

by up/down key, select channel 2 , display  . Then press OK enter channel 2 setting, display  , use up/down to select, until display  , enter by OK, if the channel is open will display  , if the channel is close will display  , select open or close by up/down, OK to confirm, back by M.

8.3 Modify the low threshold

For example as modify channel 2:

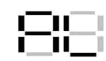
After self-checking finished, it will be in the monitor interface, press M 3 seconds and then release into the menu setting interface. Choose by up/down key, select channel 2 , display  . Then press OK enter channel 2 setting, display  , enter it, display  , modify by up/down, save by OK. Note: the low threshold can't be higher than high threshold.

8.4 Modify the high threshold

For example as modify channel 2: After self-checking finished, it will be in the monitor interface, press M 3 seconds and then release into the menu setting interface. Choose by up/down key, select channel 2 , display  . Then press OK enter channel 2 setting, display  , use up/down key to select  , enter it, display  , modify by up/down, save by OK.

8.5 Modify the full range

For example as modify channel 2: After self-checking finished, it will be

in the monitor interface, press M 3 seconds and then release into the menu setting interface. Choose by up/down key, select channel 2 , display  . Then press OK enter channel 2 setting, display  , use up/down key to select  , display  , modify by up/down, save by OK.

8.6 Decimal point setting

For example as modify channel 2: After self-checking finished, it will be in the monitor interface, press M 3 seconds and then release into the menu setting interface. Choose by up/down key, select channel 2 , display  . Then press OK enter channel 2 setting, display  , use up/down key to select  , enter it display  , modify by up/down, save by OK.

Note: Due to the decimal point change, the low threshold, the high threshold and the full range decimal point also change, so we need to modify the current channel's high and low threshold and full range. When the decimal point is changed from less to more, the order of modification is in turn high, low, full range. When the decimal point is changed from more or less, the order of modification is in turn low, high and full range. When all are set up, the current channel can monitor and alarm normally.

Ⅸ. 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.

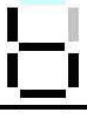
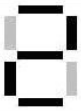
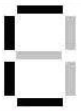
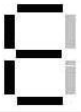
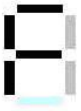
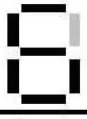
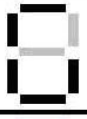
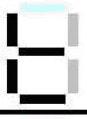
1. Before the usage of the product, please check the product and accessories according to the products list if complete. If miss some parts, please contact the manufacturer or distributor at once.

2. OC-4000 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 parameter:

Item	Description
Display	LED display
Output voltage	AC220V±20%，50HZ
Consumption	＜2W
Channel quantity	Two channels, Four channels, Eight channels
Detector power supply	DC24V, 300mA/channel
Input signal	4~20mA (Optional RS485)
Relay output	AC220V/2A, DC24V/2A
Audible-visual alarm	Audible alarm ＞80dB(1m), visual is optional
Working temperature	-20℃～+50℃
Working humidity	≤95%RH(non-condensing)
Body material	Metal
Installation type	Wall-mounted
Dimension	L263mm*W180mm*H70mm(2/4 channels) L325mm*W220mm*H74mm(8 channels)
Weight	4.0kg
Standards	GB 16808-2008
Warranty	12 months

Nixie tube character correspondence table:

Number	Seven code	English letter	Seven code	English letter	Seven code
0		A		N	
1		B		O	
2		C		P	
3		D		Q	
4		E		R	
5		F		S	
6		G		T	
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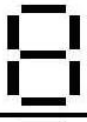
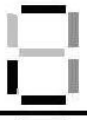
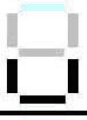
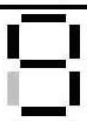
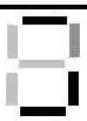
8		I		V	
9		J		W	
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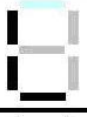
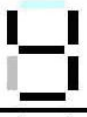
		L		Y	
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