OC-905

Portable gas detector

Operating Manual

Henan Oceanus

⚠ **Attention:**

1. All operators who operate and test our company's factory instrument must read this manual carefully before operation. Only the instrument of this company is operated according to the operation manual of this company, can the instrument work normally.

2. The usage of the instrument of this company must conform to the regulations confirmed by the operation manual. The maintenance of the instrument and changing of the parts must adopt accessories offered by this company, and the maintenance operators must be the works who have been trained.

3. If the user repairs this product or change accessories arbitrarily and does not conform to the above-mentioned manual, the operator shall be responsible for the reliability of the instrument. And this company is not responsible for the warranty.

4、The instrument should be calibrated every half year; the flame-proof piece of the instrument sensor or the waterproof and breathable memebrane should be cleared or changed periodically, or the detection sensitivity would be affect because the dust and impurities would block the protective hole.

5. The usage of this instrument also should conform to the laws and regulations of the domestic relevant departments and instrument management of the factory.

6. Determined by the characters of the sensor, the instrument should be calibrated every three months (the company can offer the standard gas).

7. The sensor is the sensitive part, so if the measuring environment is full of lamp black, moisture, and dust, the filtering pretreatment is necessary, or the sensor is easy to be damaged.

8. The instrument adopted the electrochemical sensor must not be exposed in the high concentration gas (except the oxygen), or poisoning and decreasing service life of the sensor is easy to happen.

9、 When pipeline instrument makes the operation of calibration and gas detection, the flow shall be controlled within 160-200ml/min, or the value would be unsteady or inaccurate.

I. Application and fundamental principles:

Firstly, thanks you for choosing OC-905 series portable gas detector .

OC-905 portable gas detector is a high-end detector, which adopts the full metal shell. OC-905 adopts the brand new imported sensor and 32-bit low power processor; the circuit adopts four wiring, which has a good effect on anti-interference and week signals; the independent high precision imported AD chip, and with the signal processing algorithm owned by our company make the accuracy of the measuring result higher and steadier; 2.5 inch lattice display interface makes the numerical reading more intuitional; the top-ranking process design makes the quality of OC-905 monolithic. The performance of this instrument is steady and reliable, which is the advanced level in this industry.

The product is widely used in: the place where need to detect flammable and combustible, poisonous and harmful gas continuously, such as, petroleum and petrochemical industry, metallurgy, chemical industry, scorching, municipal administration, biopharmaceutical, environmental protection, laboratory of school,

automobile exhaust, electric power, shipping, and sewage treatment and so on.

1.1 Safe instruction

● The too high or too low of the content of the oxygen can affect the reading of the flammable gas sensor.

● The sudden change of atmospheric pressure may affect the reading of the oxygen sensor.

● The steam of the silicone compound would catalyze the burn type sensor and cause damage, please make sure that there are no this kind of materials in the application environment.

● In the process of using, please keep cleaning the sensor air inlet. The bulkhead of the air inlet would make the reading of detector low.

● Please do not to disassemble this instrument voluntarily in order to guarantee that the using of the detector is safe and reliable.

● Please do not put this detector in the high temperature, moist or strong static environment.

● Please do not clean this machine using any corrosive liquid.

● The user cannot change the parts of this product voluntarily, and should deal with the breakdown in the process of operation with the maker, which can completely eradicate damage phenomena.

● The installment, use and maintenance should conform to operation manual, GB3836.13-1997 "explosive air environmental electrical equipments the thirteen part: the maintenance of the explosive air environmental electrical equipments", GB3836.15-2000 "explosive air environmental electrical equipments the fifteen part: the electrical installment in the dangerous place
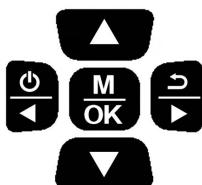
(except coal mine)", GB3836.16-2006 "explosive air environmental electrical equipments the sixteen part: the check and maintenance of the electric installation (except coal mine)" and GB50257:1996 "the relevant regulations of "the explosion of the installation works of electrical equipments and the construction of electrical installation in the fire dangerous environment".

II. The appearance of the instrument

The definition of the keypad parts

Key	Definition
▲	[Upper key]the upper direction key
▼	[Lower key] the lower direction key

⏻ ◀	[Left key] startup or shutdown and shift key
⟲ ▶	[Right key] return key
M OK	[M/OK key] menu/confirmation setting

III. The instrument operation instructions

The operating process of machine: in the holding state, press the startup key, and the machine enters into the preheating state interface, at the same time, the backlight is light, the machine enters into the measuring state after completing preheating, in the measuring state, the machine can measure the environment gas, after measuring, press shutdown key. In the measuring process, if some parameters of the machine need to be set, enter into the menu interface to set. The specific operation process is as follow:
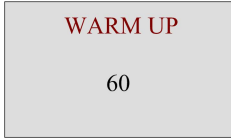
3.1 Startup:

In shutdown mode, long press 【⏻◀】 startup and shutdown key 3 seconds.

3.2. Shutdown:

In the measuring mode, long press 【⏻◀】 key 3 seconds.

3.3 Preheating state:

After startup, the machine would enter into the preheating interface, and the preheating time is 60s. In the preheating state, press conformation key, and then the preheating interface can be skipped. However, this operation is not suggested. There may be some prompt messages after preheating, and then the machine would enter into the measuring state.

```
WARM UP

   60
```

Note: all sensors have the preheating process, if the preheating time is skipped, the numerical value may be unsteady or incorrect, so this operation is not suggested by the maker.

3.4. Measuring state

After completing preheating, the machine enters into the measuring state, and the measuring interface is generally as follows.

```
    13: 26           /////
CO2
     850.6
                  PPM
```

a. The first line displays time and battery capacity**.**

b. In the second line, co_2 is the gas type, and the machine display the different name for the different gas types.

c. In the third line, the big character 850.6 is the air concentration value---the measuring value. The different measuring results display the different values.

d. The fourth line displays the unit. At present, the selectable units of the machine have PPM, %VOL, %LEL, mg/m^3. The other units can be customized specially according to the demand of customers.

3.5 Menu setting interface

The menu interface adopts the classical 9-level menu catalogue, in the

measuring mode, press [menu/confirmation], and then enter into the menu setting mode, the interface will display:

a. 1 ALARM SET the setting of the alarm value;

b. 2 DATE SET used for setting time;

c. 3 CALI SET calibration setting, can enter into the calibration interface;

d. 4 RECORD SET setting the data record (only valid for part machine);

e. 5 PUMP ON/OFF setting the pump switching, the pump is given tacit consent to on.

f. 6 EARSE FLASH delete all data of the storage area, aiming at the machine which has the storage data function;

g. 7 RESTORE SET restore factory setting, the parameter setting of factory can be restored;

h. 8 ABOUT OC-905 some information which is related to this machine, such as version No.

i. 9 RETURN, after pressing confirmation, the machine can return to the measuring interface.

This instrument has 9 setting menus. On the menu interface, press up key, down key or left key to choose the corresponding settings, and then press CONFIRM enter into the corresponding setting interface; if you want to return, press the return key. If the machine has not the pressing operation for a long time, the machine would return to the measuring interface automatically.

3.5.1. Alarm value setting

```
ALARM LO
   0060.0          PPM
ALARM HI
   0080.0          PPM
```

On the interface of the alarm value setting, the alarm value of the machine can be set, of which ALARM LO is the one-level alarm value setting, ALARM HI is the second-level alarm value. Press left key, you can set the number, and the corresponding place would reverse video, press the upper and lower key which can change the corresponding number, after changing the number, press confirmation key. If the number does not need to be changed, you can press return key, and return to the last interface.

Note: the one-level alarm value cannot be bigger than the second-level value, and the alarm value cannot be bigger than the scale span value.

3.5.2 Time and date setting

```
SET DATA
   15 / 06 / 30
SET TIME
   23 - 59 - 56
```
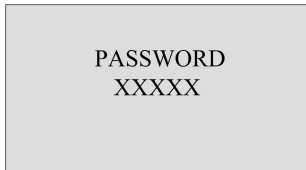
On the menu interface, pick on the TIME SET, press confirmation, and then enter into the time setting interface. The current date and time of the system can be set. Of which the SET DATE is the date setting, from the left to right, it is year/month/date, SET TIME is the time setting, from left to right, it is minute-second. If the time and date does not need to be set, press return key, and the interface can return to the last interface directly.

The setting method is as follows. Press left key, the corresponding setting
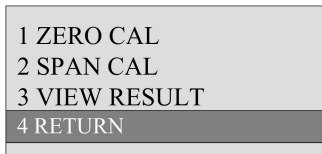
place can be changed, the up and down key can change value. After changing, press CONFIRM to keep the time and date which have been changed. If the time and date which have been changed do not need to be kept, press return key, logout the time and date setting interface.

3.5.3 The process of calibration setting

```
        PASSWORD
        XXXXX


```
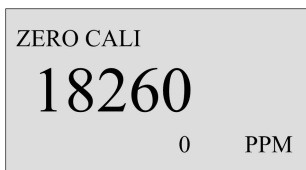
After picking on the calibration setting menu, the system would enter into the password interface firstly, and put into password 88, and then enter into the calibration interface. On the calibration interface, the zero and span can be set, and the calibration result can be checked.

```
1 ZERO CAL
2 SPAN CAL
3 VIEW RESULT
4 RETURN

```
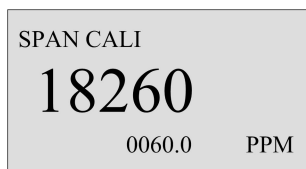
The menu of the calibration interface

On the calibration interface menu, choose 1 ZERO CAL, and then enter into the zero calibration, when the display number is steady, press confirmation, and the zero calibration is completed.

```
ZERO CALI
 18260
           0    PPM
```

Zero calibration

On the calibration interface menu, choose 2 SPAN CAL, and then enter into the span calibration interface, put into the concentration value when calibration, such as, 60PPM, when the value is steady, press confirmation, and the span calibration is completed.
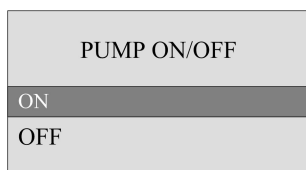
```
SPAN CALI
 18260
        0060.0    PPM
```

Span calibration

Note: 1. If the machine has not been used for a long time, the zero may be have some excursion, at this time, enter into the zero calibration interface, make the zero cleaning operation. This operation is made on the situation that there is no object gas.

2. The span calibration needs the participation of the object gas, if customer does not have the object gas, please do not make this operation.

3. If the inaccuracy of the calibration value is caused by your wrong operation, you can enter into the factory interface, and make the restoring factory setting, and then enter into the zero calibration interface to make zero operation.

3.5.4. Pump switching setting

```
         PUMP ON/OFF
 ON
 OFF
```

This machine has the high-performance pump. After entering into the pump

switching setting interface, choose ON, and open the pump, while choose OFF, close the pump. The pump is open when the machine is open, and this state cannot be kept.
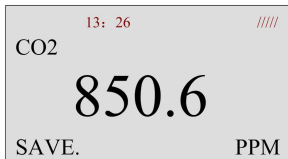
3.5.5. Storage setting

RECORD SET
OFF

When the machine is open, the storage function is in the OFF state, if you want to open storage function, enter into this interface to set. The storage time interval can be: 1 second, 5 seconds, 10 seconds, 30 seconds, 1 minute, 5 minutes, and 10 minutes. After choosing the corresponding storage time internal, press confirmation key, and open the storage function. If the measuring is completed, choose OFF again, and then press confirmation or OFF can close the storage function. The storage file of TXT form can be produced in the system, copy this file to the computer by USB.

Note: 1. The storage function is the optional functions, only valid to the machine which has the data storage function.

2. When open the storage function, the measuring interface would display SAVE blinking character.
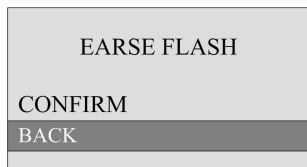
13：26 /////
CO2
850.6
SAVE. PPM

3. When the storage data is great, please copy the data into the computer, and

then open the file to check. Please do not directly open the file on the situation that the USB connects the machine.

4. Periodically copy backups and clean the data of the storage area.

3.5.6 Erase memory

```
        EARSE FLASH

CONFIRM
BACK
```

On the erase memory interface, choose CONFIRM, and the system memory can be erased in the formatting manner. In the process of formatting, if the memory is erased successfully, the interface would display MKFS OK, or, would display MKFS ERR. Choose BACK to return, and also can press return key to return.

Note: 1. This function is only valid to the machine which has the data storage function.

2. After conducting formatting, the all measuring date stored in the system would be deleted. So before conducting this operation, you had better copy the previous date into computer by USB to make a backup, in case the lost of the important date.

3.5.7. Restore factory setting

```
        RESTORE

CONFIRM
BACK
```

After entering into the restore factory setting interface, choose CONFIRM,

the parameter set in the factory can be restored. Please make a confirmation before restoring factory setting every time, because restoring factory setting would cover all parameters set by customer, including the calibration parameter. After restoring factory setting, if the extent of zero wander is bigger, enter into the calibration interface, and make the zero clearing operation.

3.5.8. About this machine

After entering into the interface, you can check the software version of the system, and relevant information.

3.5.9. Return

Pressing CONFIRM can return to the measuring interface, you also can press return key to return to the measuring interface.

IV. Basic calibration

The product has been calibrated before leaving factory. If the user has the calibration conditions, they can make the periodic calibration according to the manual in the process of using; if the calibration is not convenient for the user, they can go to the relevant metrological service or mail the product to our company to make the paid calibration.

In order to guarantee the measuring accuracy of the probe, the normal calibration period of the instrument is 3-6 months. The gas detected is high concentration in the application environment; the calibration period can be shortened properly. In order to guarantee the measuring accuracy of the instrument, the instrument should be calibrated at regular intervals, and record it.

V. After-sale service Information

Before leaving factory of the products, the products have been calibrated and

checked seriously by our company according to requirements. We promise that the products conform to the relevant standards and laws and regulations of national and industry.

The customer who purchases the instrument of our company enjoys 12 months warranty period. In the process of using, the user should abide by the application instructions, if the damages which is caused by the improper using, or the harsh working environment in the warranty period, the company would not be responsible for it. If the machine cannot work because of the quality problem, our company would maintain or change in free for the user. The company would accept the production cost after one year.

Product specification

Name	Description
Products name:	OC-905 portable gas detector
Working principle	Electrochemistry, infrared detection, PID, thermal conductivity, catalytic
Display mode:	2.5 inch Lattice LCD liquid crystal digital display
Backlight:	Highlight white LED backlight
Display unit:	Optional units: %VOL、%LEL、PPM、PPH、PPB、mg/m^3
Alarm method:	Sound-light alarm, double color LED alarm light, sound ≥75dB@25cm
Accuracy:	≤±3% (actual concentration, the higher accuracy requirements is determined according to the performance of the sensor.
Preheating time:	≤60 seconds
Data storage function:	More than 200,000 group of data, transmitted to computer by USB port
Body material:	Shell: aluminum alloy, strong, wear-resisting, anti-corrosion
Working mode:	Pump/ diffusion type
Operation mode:	Press key (the key life is 200 thousand times)
Working temperature:	-20℃～+60℃ (the special requirements can be customized)
Working humidity:	≤95%RH, no condensation (humidity >90%RH, the condensation can
The relative humidity:	10%～95%RH, no condensation

Working voltage:	High-performance imported lithium battery, nominal voltage: 3.7VDC, 2500mAh
Charger:	The travel charger with USB interface, the USB can supply power of DC5V, the scope of the charging temperature: 0℃～40℃
Charging time:	≤ 6hours, charging completely needs 12 hours.
The continuous working	≥12 hours (normal temperature, electrochemical sensor)
Power consumption	0.5W
Working pressure:	86kPa~106kPa
Weight:	About 0.46 Kg
Explosion-proof sign	Exd ib IIC T4 Gb
Protection grade：	IP66
Quality standard：	GB15322.1-2003，GB3836.1-2010，GB3836.2-2010，GB3836.4-2010

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