

# Portable Gas Detector Instruction Manual

V1.1

Thanks for purchasing our product. Please read the user manual carefully before using.

## Note before using

- Before using the instrument, please read the product instruction manual carefully.
- It is strictly forbidden to open the cover with power on on site.
- It is strictly forbidden to replace the sensor with electricity.
- Operations such as installation, commissioning and setting must be carried out by professionals.
- The calibration check should be carried out regularly, and the sensor beyond the effective service period and faulty sensor should be replaced in time.
- It is strictly forbidden to use gas higher than the measuring range to impact the sensor.
- Prevent the instrument from being dropped from a height or subjected to severe vibration.
- It is strictly forbidden to expose the instrument to high-concentration corrosive gas environment for a long time to prevent damage to the sensor.
- It is strictly forbidden to use in high temperature and high humidity environment. If the environment humidity is high, a filter and dehumidification device must be added.
- Users are not allowed to start maintenance or replace parts without authorization.
- Man-made damage is not covered by the warranty.
- It is not allowed to arbitrarily replace the components or structures that affect the explosion-proof performance, so as not to affect the explosion-proof performance.
- Warning: Potential electrostatic charge hazard, avoid ignition hazard caused by electrostatic charge during normal use, maintenance and cleaning of the instrument.
- When used in an explosive environment, the device should not be touched and wiped. If it must be wiped or touched, it should be done in a safe place, and wipe the casing with a wrung wet cloth. It is strictly forbidden to wipe the casing with a dry cloth!
- For portable products, before entering the dangerous area, the human body should discharge static electricity first, and then carry the instrument into the site.
- The charging must be carried out in a safe place, and use the special charger for this machine. The charging must be turned off. After charging, please insert the USB dust plug back into the USB charging port.

## Keys Operation:

	Turn on/off: long press for 3 seconds to power on/off, short press to confirm or save data.
	Menu: In the detection mode, press this button to enter the parameter setting mode, and in parameter setting mode, press this button to move the cursor.
	Plus: In parameter setting mode, short press to select items upward or increase values. Long press for 3 seconds to turn on/off the alarm function quickly.
	Minus: In the parameter setting mode, short press to select items downward or decrease value. Long press for 3 seconds to turn on/off the air pump quickly.
	Exit: In parameter setting mode, short press to return to the previous menu. Long press to shift switch the gas concentration unit quickly.

Note: The long press function only work in detection mode. When you change or reset any data, please remember to click "ON/OFF" button to confirm and save the settings. Remember to turn on the pump when start the detection. Please turn off the pump when there is no need to detect, which will be helpful for the service life of the pump

## Power On/Off

Put the detector in clean air, and press the "ON/OFF " for three seconds, the detector will be turned on and the pump will start to work. The screen displays the following interface successively: Brand and Logo, main parameter interface, initialing countdown. The countdown would be 60 or 120 seconds, which is to make sure that the sensors are fully activated. After countdown, the device enter normal detection interface. Take the detector out of the detected environment and wait for the data to get down to zero, then press the "ON/OFF " to turn off the detector.

## Zero Calibration

Zero calibration must be done in clean air. Better to do once after alarming happens . Press "MENU" to enter parameter setting mode, select the "calibrate zero", and press "ON/OFF " to enter the mode. Observe the value of "real time concentration ". If the reading is not zero and the drifting is too big when the reading is

stable, then it is necessary to conduct zero point calibration.

Press "ON/OFF ", the real-time concentration will go back to zero, and press "ESC" to go back to detection mode, gas concentration values also back to zero.

Note: Zero calibration of oxygen detector, nitrogen detector and carbon dioxide detector (target gases are component of the air) can not be done in the air. Only the target point calibration (value of target point concentration is the standard concentration values in the clean air) can be done.

## Process of Over-range incorrect operation

Users should avoid using gases which exceed the measure range to impact the sensor, because it will affect the lifespan and sensitivity of the sensor, even, "poison" the sensor. If there is any over-range incorrect operation makes the detector displaying an concentration at a large reading, the remedy is to take the device out of the environment immediately and put it in clean air for over half an hour, and then observe the reading, if it keeps going down, then wait until the reading back to zero before powering it off, and do the zero point calibration next time before using it. If the reading maintained at full scale, user should send the device back to manufacturer or agent for repair or replacing the sensor.

### Note

\*If detector is used for the gas cylinder detection, considering the high pressure in the cylinder, please use a pressure regulator, and keep it as the below data:

Flow rate: 900mL~1200ml/minute

Pressure: 0.1MPa or 1Bar

\*Please put the detector in clean air for about 5 minutes and waiting for the data falling down to normal before turning it off after measurement.

## Read before operation (For PID sensors)

If the detector is equipped with a high-resolution PID sensor (means the resolution is 0.001ppm), after the detector is turned on in clean air, it must be placed in clean air for 10-15 minutes before enter to the target environment for detection.

If the detector is equipped with a Normal-resolution PID sensor (means the resolution is 0.01ppm,0.1ppm,1ppm), after the detector is turned on in clean air, it must be placed in clean air for 5 minutes before enter to the target environment for detection.

The factory default of the detector is the standard VOC gas detection mode, the CF coefficient of this mode is 1, so when the detector is turned on, it is in the standard VOC detection mode. If you want to detect other VOC gases, let's say N2H4 as an example. Before detecting N2H4, it is necessary to enter the "Gas CF set" and change the coefficient to 3, and then perform the detection. If you press the ESC key to exit after the modification, then this coefficient is only valid at the current startup. After the detection is completed and the shutdown is completed, you need to set the above settings again at the next startup; if you press the " " key to save after the modification, the coefficient will still be valid for the next startup.

Customers can detect other VOC gas by correcting the corresponding CF coefficient according to the CF coefficient table of other gases provided by us.

When there are different Voc gases in the environment at the same time, the displayed gas value is the comprehensive concentration value of the mixed gas.

## Operation Interface

When the detector is turned on completely, the device will enter the detecting interface. The gas type will be showed on the top left, and the time and battery power will be at the right. In the middle, there is the real- time concentration. If the detector is with data storage function, there will be the storage status at the top of the concentration: ON or OFF, and the total storage number. There will be BEEP-ON at the bottom left, which means the alarm is on. The PUMP-ON at the bottom right, which means the pump is working.



- ①-Air Inlet
- ②-Air Outlet
- ③-air chamber of sensor
- ④-LCD
- ⑤-PLUS
- ⑥-MINUS
- ⑦-MENU
- ⑧-ESC
- ⑨-ON/OFF

## Power On / Off

Put the detector in clean air, and press the “ON/OFF” for three seconds, the detector will be turned on and the pump will start to work. The screen displays the following interface successively: Brand and Logo, main parameter interface, initialing countdown. The countdown would be 60 or 120 seconds, which is to make sure that the sensors are fully activated. After countdown, the device enter normal detection interface.

Take the detector out of the detected environment and wait for the data to get down to zero, then press the “ON/OFF” to turn off the detector

## Alarm point set

Press “Menu”, choose the “Alarm point set”, and start to set the alarm value.

There are LOW POINT and HIGH POINT for set, press “MENU” to move the cursor to the value you want to set, and press the “PLUS” or “MINUS” to change the value. After the setting is done, press “ON/OFF” button to save the settings.

## Pump speed set

Press “Menu”, choose the “Pump speed set”, and start to set the pump speed.

Change the pump speed doesn't have influence on gas detection now.

## Zero Calibration

Zero calibration must be done in clean air. Better to do once after alarming happens.

Press “MENU” to enter parameter setting mode, select the “calibrate zero”, and press “ON/OFF” to enter the mode. Observe the value of “real time concentration”. If the reading is not zero and the drifting is too big when the reading is stable, then it is necessary to conduct zero point calibration.

Press “ON/OFF”, the real-time concentration will go back to zero, and press “ESC” to go back to detection mode, gas concentration values also back to zero.

Note: Zero calibration of oxygen detector, nitrogen detector and carbon dioxide detector (target gases are component of the air) cannot be done in the air. Only the target point calibration (value of target point concentration is the standard concentration values in the clean air) can be done.

## Process of Over-range incorrect operation

Users should avoid using gases which exceed the measure range to impact the sensor, because it will affect the lifespan and sensitivity of the sensor, even, “poison” the sensor. If there is any over-range incorrect operation makes the detector displaying an concentration at a large reading, the remedy is to take the device out of the environment immediately and put it in clean air for over half an hour, and then observe the reading, if it keeps going down, then wait until the reading back to zero before powering it off, and do the zero point calibration next time before using it. If the reading maintained at full scale, user should send the device back to manufacturer or agent for repair or replacing the sensor.

## Calibrate span

Note: Calibration needs to be done by professionals and with necessary accessories and standard gas.

Prepare the standard gas before starting the span calibration. In detection mode, press “MENU”, select “calibrate span”, press ON/OFF button to enter. Then you will need to enter password. (If you need password, please contact the manufacturer to get it)

After entering the password successfully, press ON/OFF to enter the span calibration interface, as shown in the picture. The interface will display “concentration”, “set value. The concentration is the result got from the calculation of several internal calibration parameters. The process of calibration is the process to recalculate the internal parameters of the device. The set value is the value need to be entered manually; it should be the concentration of the standard gas to be calibrated. Select the parameter under the current interface, modify its value with “PLUS” and “MINUS” button.

The calibration process is as below:

1. Connect the detector with standard gas cylinder by T-shape hose, Ensure that the bypass flowmeter has flow to empty.
2. Enter the span calibration interface, set the “SET value” as the standard gas concentration.
3. Release the standard gas to the detector in a flow rate of 900-1200mL/min. The value of “concentration” will become larger gradually, and become stable after 30seconds.
4. When the value of “concentration” is stable, press the “ON/OFF” button, the value of “concentration” will be same with or almost same with the “Set value”. The calibration is finished.
5. Cut off the standard gas supply. Press “ESC” to go back to detection interface.

## Date & Time Set

Press menu to enter “Date & Time set” to change the date and time

## Language select

Press menu to enter language set to change the language if need.

## Gray Level set

Press menu to enter “Gray level set” can change the back light of the detector

## Restore Setting

When all the settings are wrong, or users operate the detector in a wrong way, you can restore the detector to factory settings. But if the detector works normally, please don't operate this setting. In order to avoid wrong setting, password is needed. If you want to restore the detector to factory setting, please contact the supplier.

## Storage set

In the storage setting, you can set the storage status and the interval. Every time you turn on the detector, the storage status defaults OFF, so you need to set the storage status if you want to record the data.

Press MENU, choose the “Storage set”, move the cursor by pressing MENU at the “ENABLE”, press MINUS to change NO to YES.

The storage interval can be 5 seconds, 10 seconds, 15 seconds, etc. The highest interval is 1 hour.

## View history data

Press the MENU, choose “view history data”. Then at the top is the record total number, and the reminder “PLEASE SELECT”. Now, if you press MINUS, then the record data will be from the first record to the second in turn. If the record number is above 10, and you want to check the specific number, you press the MENU again, then you can input the exact number and check that record (press the MENU to move the cursor, and press the MINUS and PLUS to change the number), press ON/OFF to confirm and then you will see the detailed record.

In the detailed record interface, at the top are the record total number and current number. In the middle are the date and time, and the concentration is at the bottom.

## Erase history data

To make sure the detector work perfectly and you can check the history data quickly, we suggest you to erase the history data regularly. Press MENU, choose the “Erase ex\_flash”, password is needed (the password is 9999), then press ON/OFF, it shows that “erasing”, and when finished, it will turn back to the detecting interface.

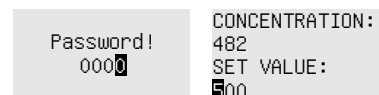
Note: Storage function is an optional function. If you don't add this function when making purchase, then the instrument will not have “storage set”, “view history data”, “erase history data” functions.

## Gas CF Set (Only for PID sensors)

The factory default of the detector is the standard VOC gas detection mode, the CF coefficient of this mode is 1, so when the detector is turned on, it is in the standard VOC detection mode. If you want to detect other VOC gases, let's say N2H4 as an example. Before detecting N2H4, it is necessary to enter the “Gas CF set” and change the coefficient to 3, and then perform the detection. If you press the ESC key to exit after the modification, then this coefficient is only valid at the current startup. After the detection is completed and the shutdown is completed, you need to set the above settings again at the next startup; if you press the “” key to save after the modification, the coefficient will still be valid for the next startup.

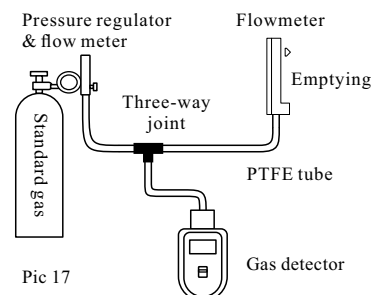
Press menu and select to enter “Gas CF set”. Press “Menu” key to select the place you want to modify.

Press the “” and “” key to change its number



Pic 15

Pic 16



Pic 17