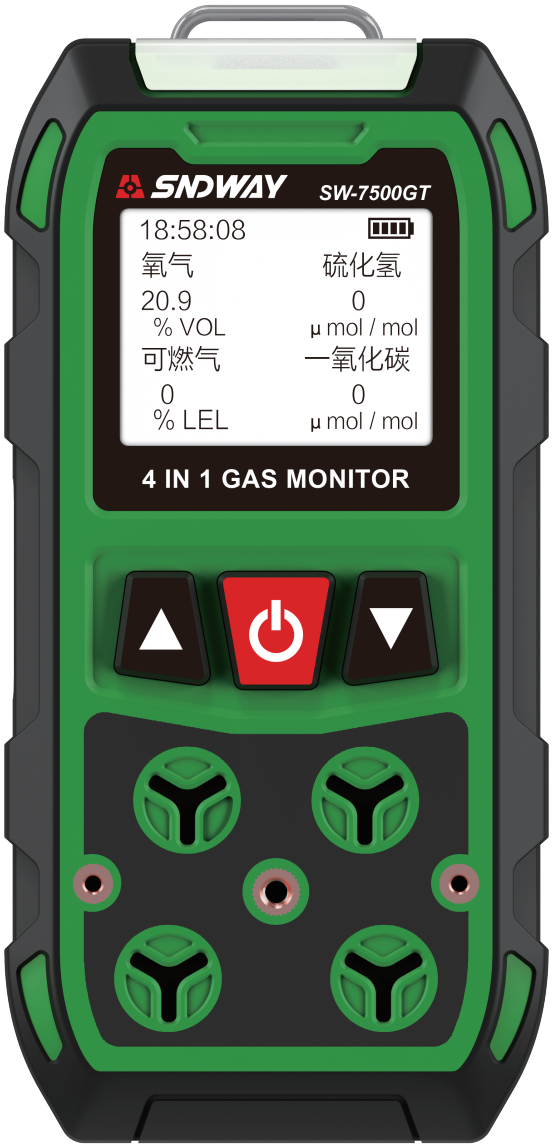
SNDWAY

四合一气体检测仪

4 IN 1 GAS MONITOR

用户手册

User Manual



SW-7500GT

1. 产品介绍

便携式语音型四合一气体检测仪（以下简称检测仪）是一种可连续检测泄露气体浓度的安全型设备。采用了先进的集成电路技术、嵌入式微机控制，优质的进口气体传感器，具有优秀的灵敏度和出色的重复性；使用点阵式LCD显示器，支持中英文界面和中英文语音提示，用户可以快速的了解本产品，使用及维护简单；外壳采用高强度工程塑料，抗振好，强度高，外型高档大气并具有防尘防水防爆功能。

本检测仪广泛应用于石油、化工、环保、冶金、炼化、燃气、生化医药、农业、消防、考古等需要安全监测有毒有害，防爆炸行业和场所。检测仪能有效预测危险气体浓度报警，保证工作人员的生命安全不受威胁， 生产设备不受损失。

本产品设计、制造、检定遵守以下国家标准：

（1）GB3836.1—2010《爆炸性环境第 1 部分：设备通用要求》

（2）GB3836.4—2010《爆炸性环境第 4 部分：由本质安全型“i”保护的设备》

（3）GB15322.3—2019《便携式可燃气体探测器第 3 部分：测量范围为（0-100)%LEL 的便携式可燃气体探测器》

（4）JJG693—2011《可燃气体检测报警器的检定规程》

（5）JJG365—2008 电化学氧气测定仪检定规程

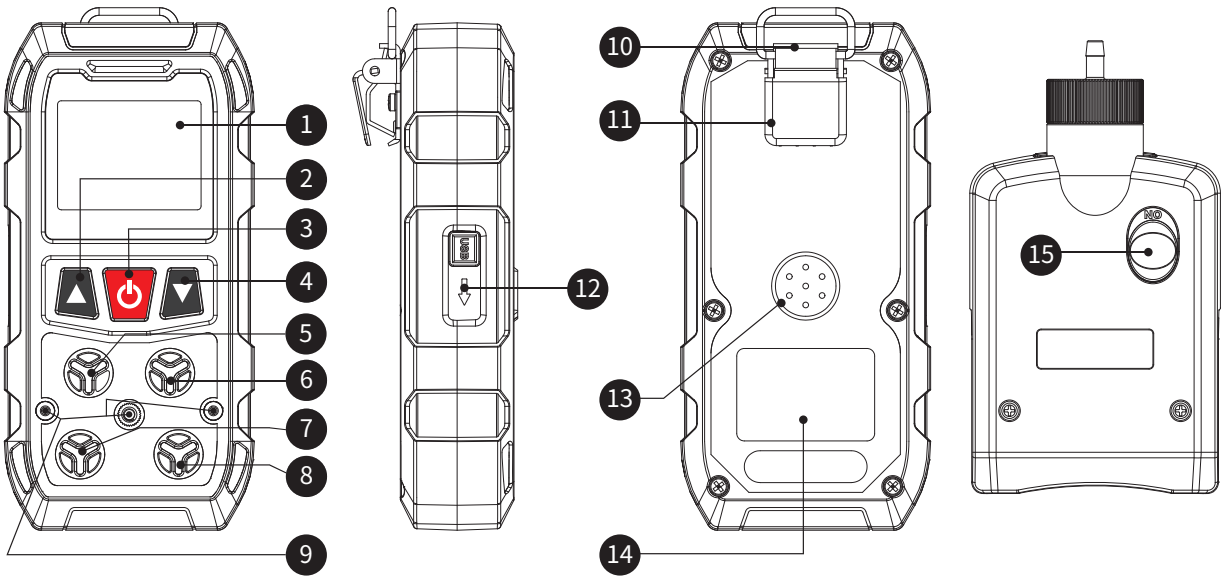
（6）JJG695—2003 硫化氢气体检测仪检定规程

（7）JJG915—2008 一氧化碳检测报警器检定规程

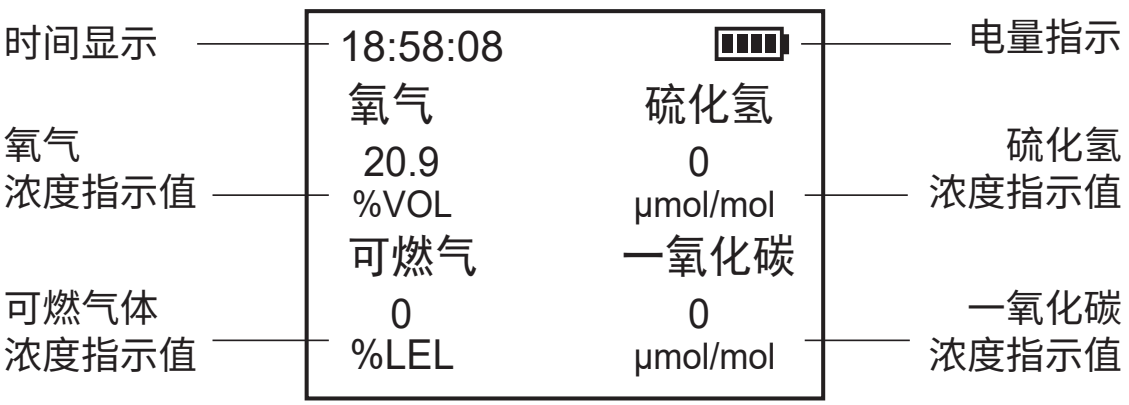
2. 结构特征

2.1 结构功能对比图

① 显示屏
② 向上键
③ 电源键
④ 向下键
⑤ 氧气检测口
⑥ 硫化氢检测口
⑦ 可燃气检测口
⑧ 一氧化碳检测口
⑨ 校准盖安装座
⑩ 警示灯
⑪ 背夹
⑫ Type-C USB
⑬ 喇叭
⑭ 铭牌贴纸
⑮ 气泵开关



2.2 主显示界面



3. 技术参数

常规气体检测范围				
气体种类	量程	低报警点	高报警点	分辨率
CO	0~1000 μmol/mol	50 μmol/mol	150 μmol/mol	1 μmol/mol
H_2S	0~100 μmol/mol	10 μmol/mol	35 μmol/mol	1 μmol/mol
Ex	0~100% LEL	20% LEL	50% LEL	1% LEL
O_2	0~30% VOL	19.5% VOL	23.5% VOL	0.1% VOL

其它参数	
显示误差	≤ ±5%FS
响应时间	＜30秒
指式方式	LCD 液晶显示实时数据和系统状态，灯光，振动 及真人录音语音（中英文）提示
工作环境	温度 -10°C ~ 55°C ; 湿度 < 95%RH 结露
工作电压	DC 3.7V（2000mAH锂电池）
充电时间	约2.5h
满电续航	约10小时(气泵关)
充电规格	Type-C DC 5V 1A
防护等级	IP54
传感器寿命	1年
传感器原理	电化学式和催化燃烧式
外观尺寸	134x66x43mm
重量	220g

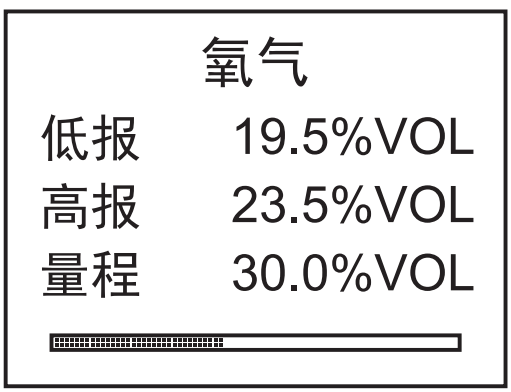
4. 设置与操作

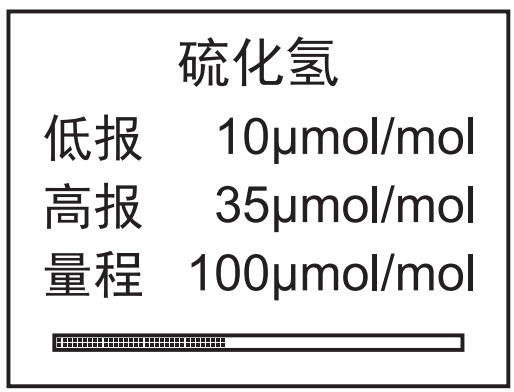
4.1 开关机及充电指示

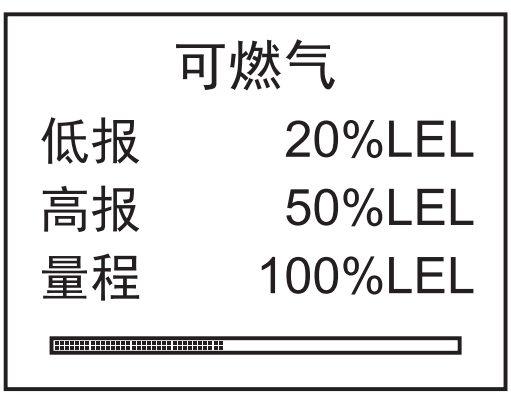
4.1.1 开机

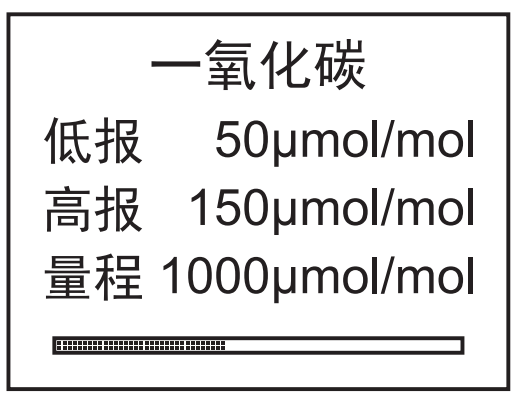
检测仪在关机状态下，长按 键，此时液晶屏显示开机欢迎页面。指示灯闪亮2秒并机身振动自检，同时可以听到“欢迎使用智能语音型气体检测仪，正在启动请稍后”的语音提示，并预览通道信息。

请在空气洁净环境开机。

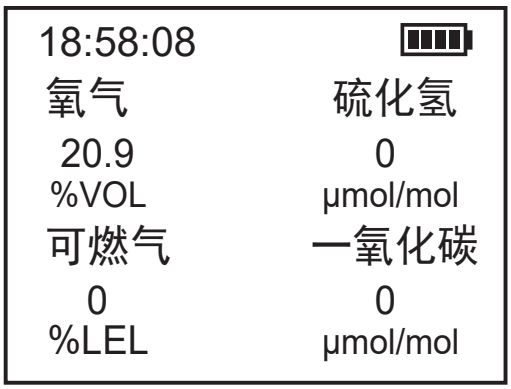








在开机完成后，显示正常待机的气体主页面，可以看到实时气体浓度。按 ▲ 键，可以查看系统状态信息。



4.1.2 关机

在气体显示主页面状态下，长按 ⏻ 键，屏幕显示关机确认界面。

按下 ▲ 键，关机成功。

按下 ▼ 键，取消关机，返回气体检测主页面。

4.1.3 充电指示

当电量不足时，仪器会有“电量过低，请充电”语音提示;当电量过低时，检测仪会自动关机。请关机充电，当在关机状态插入USB充电线，屏幕显示充电中及充电示意符号。

4.2 设置菜单

检测仪菜单共有报警记录、低报设置、高报设置、零点设置、标定设置、时间设置、背光设置、密码设置、通道信息、语言设置功能。

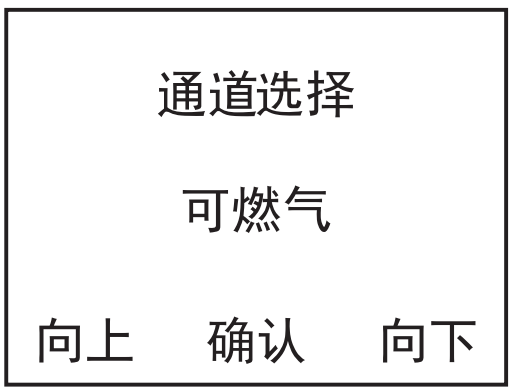
在显示气体浓度主页面状态，按下 ▼ 键，进入到菜单选择。

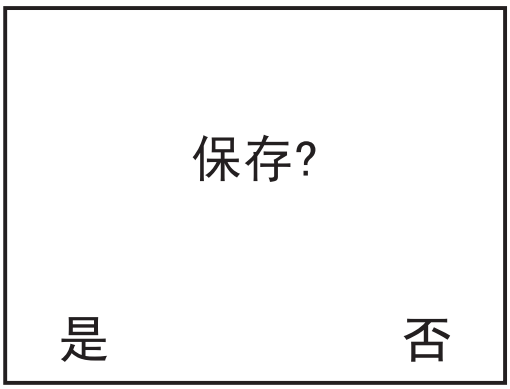
4.3 报警记录

在菜单选择报警记录时，按下 ⏻ 键，切换到报警记录界面，按 ▲ 或 ▼ 键浏览记录，按 ⏻ 键进入选项。

4.4 低报设置

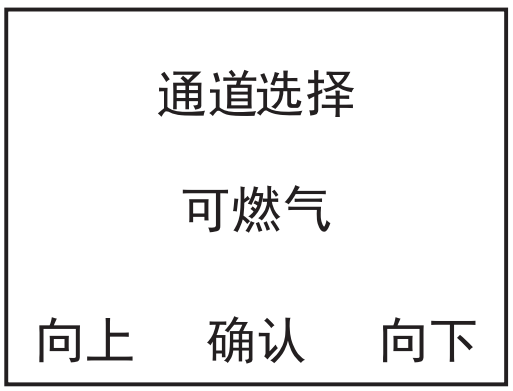
在菜单选择低报设置时，按下 ⏻ 键，切换到选择低报通道界面；可以通过 ▲ 或 ▼ 键来选择可燃气体、氧气、一氧化碳、硫化氢通道；选好需要设置的通道后按下 ⏻ 键，进入到低报浓度设置页面；用户可以根据增加、减少来调节实际需要的报警浓度，按下 ⏻ 键后进入保存确认页面，按下 ▲ 或 ▼ 键选择是否保存修改值。

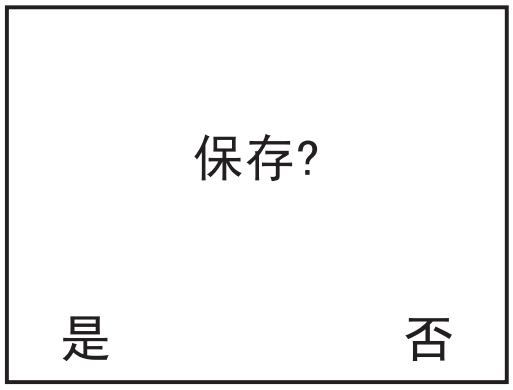




4.5 高报设置

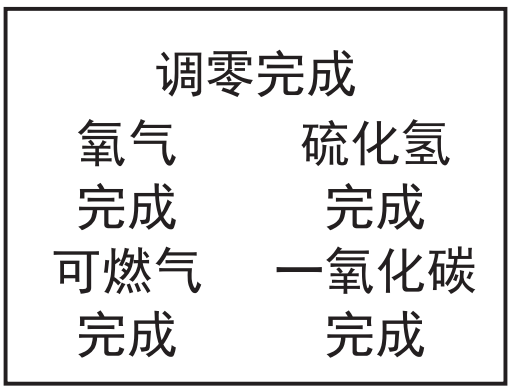
在菜单选择高报设置时，按下 键，切换到选择高报通道界面；可以通过 或 键来选择可燃气体、氧气、一氧化碳、硫化氢通道；选好需要设置的通道后按下 键，进入到高报浓度设置页面；用户可以根据增加、减少来调节实际需要的报警浓度，按下 键后进入保存确认页面，按下 或 键选择是否保存修改值。





4.6 零点设置

在菜单选择零点设置时，按下 键，输入密码：1111，切换到零点设置界面，进度条动态推进完成后，生成调零完成页面，按 键返回至菜单页面。此项操作，请在自然通风环境好的环境操作。

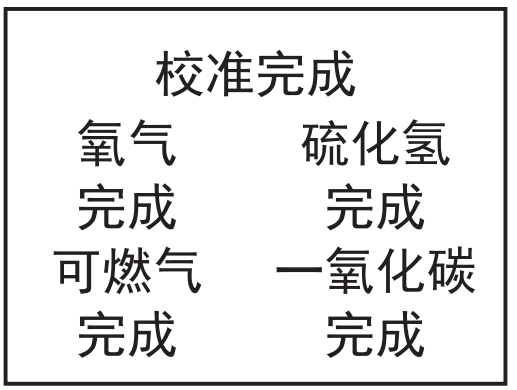


4.7 标定设置

标定前准备好标气、限压阀、流量计、气管、螺丝固定好标定气罩。

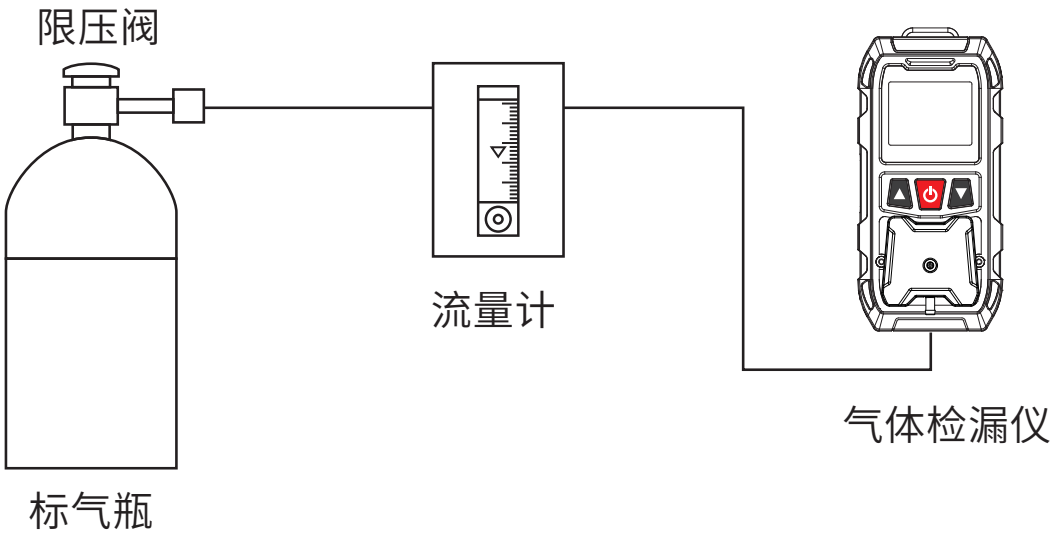
在菜单选择标定设置时，按下 键，输入密码：1111，仪器会先自动校准零点，校准完成后按 键切换到气体校准界面，通入指定浓度的四合一标准气体*，按 键进入校准状态，30秒后进度条推进完成，四合一气体标定OK，生成校准完成页面。按 键返回至菜单页面。没有标准气体，请勿进行此项操作。

* 四合一标气：氧气18%VOL，一氧化碳100μmol/mol，硫化氢25μmol/mol，可燃气体50%LEL（甲烷）



警告：非专业人员严禁进行此操作，否则一切后果自行承担！

检测仪在出厂时已经统一进行过标定测试，如果用户想重新进行标定，请严格按照步骤，先零点设置，再进行重新标定设置。用户如误操作此设置，请及时联系生产厂家退回重新标定处理。



标定示意图

4.8 时间设置

在菜单选择时间设置时，按下 键，切换到设置时间界面；通过按 键增加数值，按 键减少数值。 键确认切换年，月，日，时，分，秒，最后进行保存。

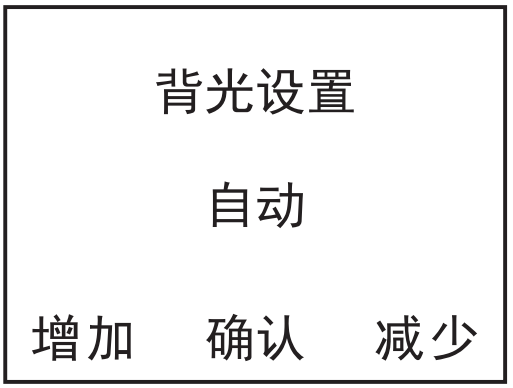
由于检测仪内部时钟芯片会因为温度、电磁干扰、电池电量不足等影响时钟误差，建议用户每隔一段时间进行一次时间设置。

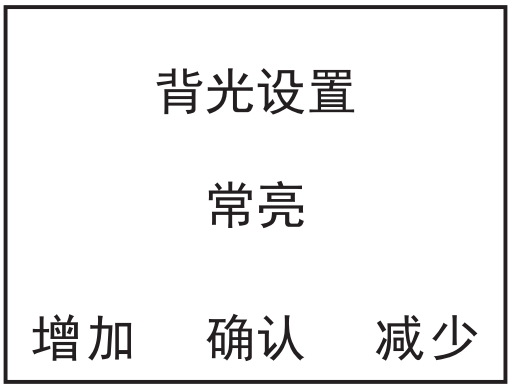
4.9 背光设置

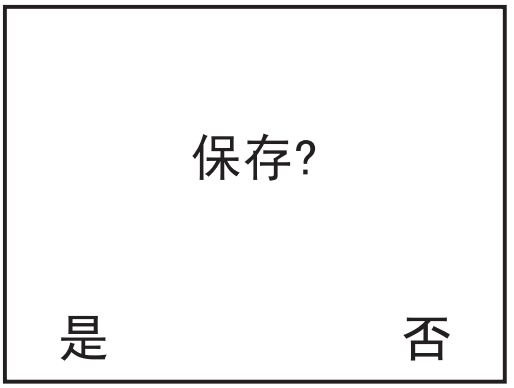
在菜单选择背光设置时，按下 ⏻ 键，切换到背光设置界面；通过按 ▲ 键或按 ▼ 键切换背光设置选项；

“自动”为每按一次按键时都会唤醒背光并重新计时30秒，时间结束后液晶背光灯熄灭;

“常亮”为当用户需要在光线不足的地方长时间观察气体变化情况时，可选择常亮功能设置，液晶背光会一直保持常亮。







4.10 密码设置

在菜单选择密码设置时，按下 ⏻ 键，切换到密码验证界面；输入验证密码，按 ⏻ 键跳转到密码设置页面；出厂默认密码为 1 1 1 1。为防止其他人误操作， 用户可以重新设置新密码。

输入密码	密码设置
1 1 1 1	0 0 0 0
增加 确认 减少	增加 确认 减少

注意：请用户妥善保存密码，一旦丢失只能退回厂家重新恢复出厂设置。

4.11 通道信息

在菜单选择通道信息时，按下 键，会依次显示氧气、硫化氢、可燃气体、一氧化碳四种气体的低浓度报警阀值，高浓度报警阀值以及最大量程信息；

氧气	
低报	19.5%VOL
高报	23.5%VOL
量程	30.0%VOL

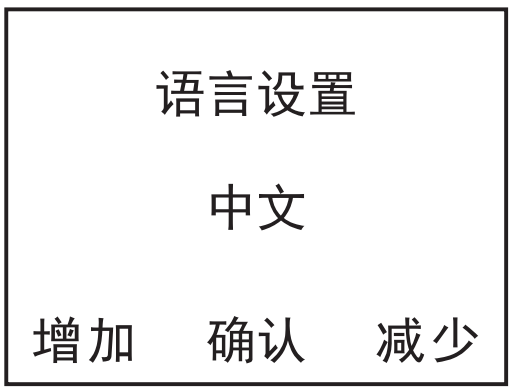
硫化氢	
低报	10μmol/mol
高报	35μmol/mol
量程	100μmol/mol

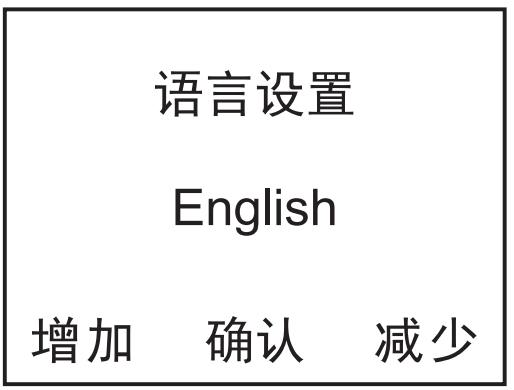
可燃气	
低报	20%LEL
高报	50%LEL
量程	100%LEL

一氧化碳	
低报	50μmol/mol
高报	150μmol/mol
量程	1000μmol/mol

4.12 语言设置

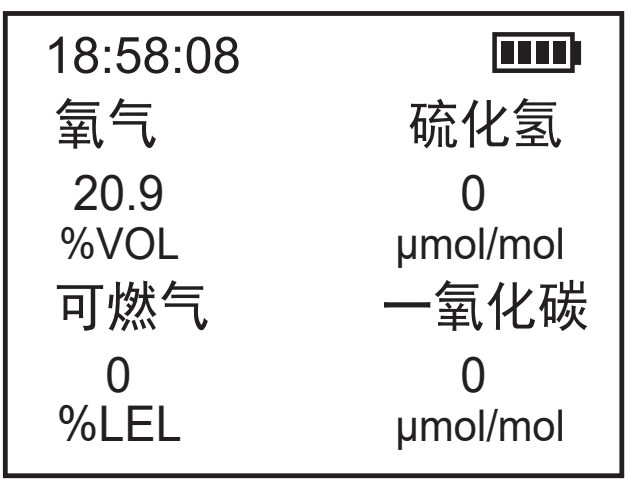
在菜单选择语言设置时，按下 键，会跳转语言设置页面；通过按 键或按 键切换语言设置选项；按下 键后进入保存界面选择是否保存。（检测仪支持中英文语言切换，播放的提示语音和系统设置的语言保持一致）





4.13 退出

在菜单选择退出时，按下 键，系统退出菜单选择，返回到显示气体实时浓度主页面。



5. 功能使用

5.1 实时显示

打开检测仪，检测仪自检后，显示屏处于实时显示可燃气体、氧气、一氧化碳、硫化氢四种浓度的待机状态。显示屏背光关闭时，按中间键即可再次点亮背光(背光在任意操作后保持30s)。

5.2 可燃气体报警

当检测到可燃气体的浓度高于系统设置的最低报警阀值，检测仪会语音播报“请注意，可燃气体浓度超标”后并一直模拟警号报警声，检测仪机身振动及报警灯闪亮；当检测仪监测到可燃气体的浓度恢复到低于最低报警值时，语音、灯光、振动报警状态停止。

5.3 氧气报警

当检测到氧气的浓度低于系统设置的最低报警阀值，检测仪会语音播报“请注意，氧气浓度过低”，高于系统设置的最高报警阀值，检测仪会语音播报“请注意，氧气浓度超标”并一直模拟警号报警声，检测仪机身振动及报警灯闪亮；当检测仪监测到氧气的浓度恢复到正常值时，语音、灯光、振动报警状态停止。

备注：正常空气中氧气的浓度为 20.9%，用户可根据实际需要调整低报阀值和高报阀值。

5.4 一氧化碳报警

当检测到一氧化碳的浓度高于系统设置的最低报警阀值，检测仪会语音播报“请注意，一氧化碳浓度超标”后并一直模拟警号报警声，检测仪机身振动及报警灯闪亮；当检测仪监测到一氧化碳的浓度恢复到低于最低报警值时，语音、灯光、振动报警状态停止。

5.5 硫化氢报警

当检测到硫化氢的浓度高于系统设置的最低报警阀值，检测仪会语音播报“请注意，硫化氢浓度超标”后并一直模拟警号报警声，检测仪机身振动及报警灯闪亮；当检测仪监测到硫化氢的浓度恢复到低于最低报警值时，语音、灯光、振动报警状态停止。

5.6 报警数据保存

检测仪触发报警后，当检测报警气体恢复到设置的正常阀值以内时，检测仪会将当前报警信息保存到检测仪内部存储，并根据用户设置的低浓度报警阀值、高浓度报警阀值区分为低报、高报。使用人员可通过菜单栏的报警记录查询。

22-02-23 08:43:44		
氧气	低报	0.0
硫化氢	低报	5
可燃气	低报	5
一氧化碳	低报	5

注：报警语音支持中英文语音报警，和系统语言设置保持一致。

警告：

1. 检测仪只有在开机后并处于气体检测页面才会触发报警；
2. 请不要在有危害气体监测现场对检测仪进行充电，以免在插拔过程中的火花引起火灾或者爆炸。
3. 尽量不要在开机状态下对检测仪充电，以免影响充电速度。

6. 充电功能

1. 检测仪内置大容量锂电池，满电状态下可以连续待机监测使用10H 以上。当检测仪提示电量不足时请及时充电。
2. 使用Type-C充电线，接入USB 5V电源（电源输出电流不小于1A）即可给检测仪充电。充满显示：充电完成。
3. 在关机状态下充电是不能打开检测仪的。可以在充电完成后拔掉充电线，再对检测仪开机进行气体监测操作。

7. 使用注意事项

1. 防止本机从高处跌落或受剧烈震动。
2. 在高浓度气体存在时，或许检测仪无法正常使用。
3. 请严格按照说明书操作和使用，否则可能导致检测结果不准或者损坏检测仪。
4. 检测仪不得在含有水蒸气、酸性气体、碱性气体、强氧化性气体及灰尘过高的环境中使用。
5. 本产品不得在含有腐蚀性体（如氯、含硅气体等）的环境中存放或使用，也不要在其它苛刻环境，包括过高、过低的温度、较大的湿度、电磁场以及强烈的日光照射）下使用和储藏本机。
6. 检测仪表面有污物时，请用干净的软布蘸水轻轻擦拭，不要使用带腐蚀性的溶剂和硬物擦拭本机表面，否则可能导致检测仪表面划伤或损坏。
7. 为保证检测精度，本检测仪应定期进行标定，标定周期不得超过 1 年。
8. 任何超出本说明书叙述的应用或故障请联络我公司寻求解决。

8. 常见故障及解决方法

故障现象	可能的故障原因	处理方式
无法开机	电压过低	请及时给仪器充电
	死机	请联系经销商或制造商维修
	电路故障	请联系经销商或制造商维修
对检测气体 没有反应	电路故障	请联系经销商或制造商维修
显示不准确	传感器超期	请联系经销商或制造商更换传感器
	长期未标定	请及时标定
时间显示错误	电池电量完全耗尽	及时充电并重新设置时间
	强电磁干扰	重新设置时间
零点设置失败	传感器漂移过多	及时标定或更换传感器
仪器正常检测界 不归零(氧除外)	传感器漂移	进行零点校准
当仪器正常检测 界面显示满量程	传感器故障	请联系经销商或制造商更换传感器

9. 储存

检测仪应储存在环境温度 0°C ~ 40°C、相对湿度不大于 85% 的通风室内。避免阳光直射，且空气中不能含有对检测仪起腐蚀作用的有害气体或杂质。

10. 装箱清单

请按下列清单认真检查仪器所有附件是否完整。如不完整，请及时联系经销商或生产厂家。

序号	名称	单位	数量	备注
1	主机	台	1	
2	Type-C线	条	1	
3	彩盒	个	1	
4	说明书	本	1	
5	保修卡	张	1	
6	标定气罩	个	1	含1颗螺丝
7	布包盒	个	1	仅旗舰款配铝盒
8	吸气泵罩子	个	1	仅旗舰款配置
9	软管	条	1	仅旗舰款配置

1. Product Introduction

Portable voice type 4-in-1 gas monitor (hereinafter referred to as detector) is a kind of safe equipment that can continuously detect the concentration of leaking gas. It adopts advanced integrated circuit technology, embedded microcomputer control, high-quality imported gas sensor, and has excellent sensitivity and repeatability; It uses a dot-matrix LCD and supports Chinese and English interfaces and voice prompt to help users quickly understand the product; Its housing is made of high-strength engineering plastic, with good vibration resistance, high strength, simple appearance and dustproof, waterproof and explosion-proof features.

The monitor is widely used in petroleum, chemical industry, environmental protection, metallurgy, refining, gas, biochemical medicine, agriculture, fire protection, archaeology and other safety monitoring industries and places. The monitor can effectively predict the dangerous gas's concentration and alarm to ensure that the life safety of the staff is not threatened, and the production equipment is not damaged.

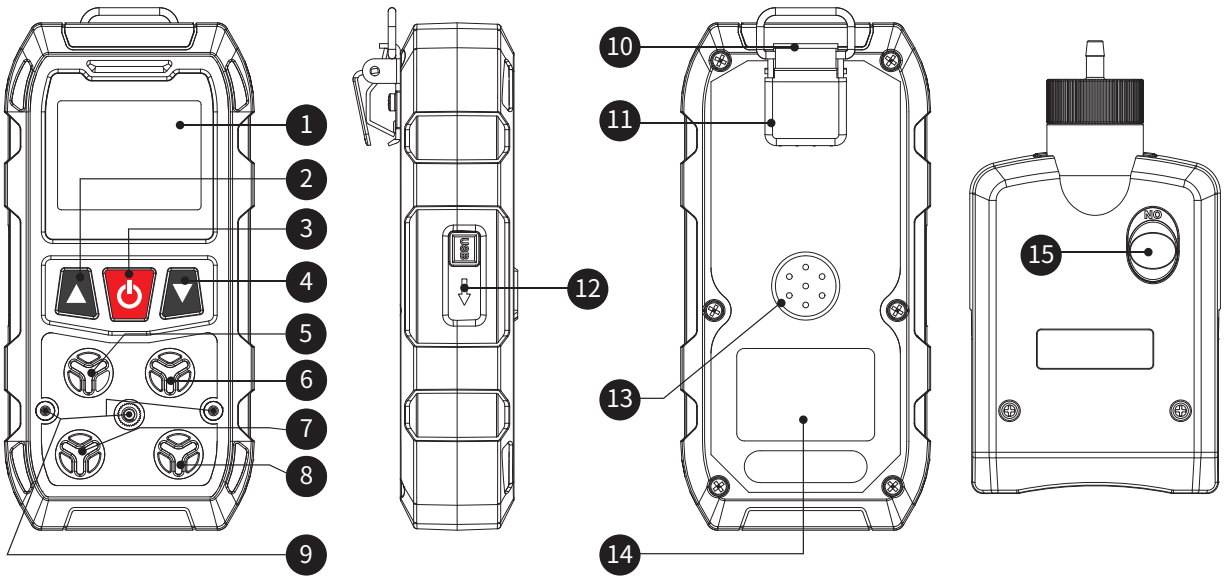
The design, manufacture and verification of this product comply with the following national standards:

(1) GB3836.1—2010 "Explosive environments - Part 1: General requirements for equipment"
(2) GB3836.4—2010 "Explosive environments - Part 4: Equipment protected by intrinsically safe 'i' "
(3) GB15322.3—2019 "Portable combustible gas detector - Part 3: Portable combustible gas detector with measurement range of (0-100)% LEL"
(4) JJG693—2011 "Verification Regulations for Combustible Gas Detection Alarms"
(5) JJG365—2008 Verification regulation for electrochemical oxygen detector
(6) JJG695—2003 Verification regulation of hydrogen sulfide gas detector
(7) JJG915—2008 Verification regulation of carbon monoxide detection alarm

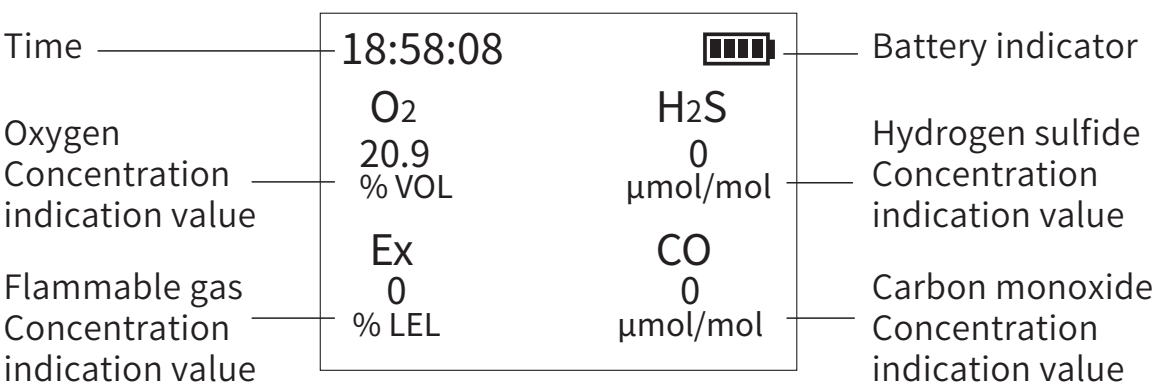
2. Structural Features

2.1 Comparison

1. LCD Screen
2. Turn Up
3. Power button
4. Turn Down
5. Oxygen detection port
6. Hydrogen sulfide detection port
7. Combustible gas detection port
8. Carbon monoxide detection port
9. Calibration cover mount
10. Warning lights
11. Back clip
12. Type-C USB
13. Speakers
14. Stickers
15. Air pump switch



2.2 Main Display



3. Technical Parameters

Conventional gas detection range				
Gas Type	Range	Low Limit	High Limit	Resolution rate
CO	0~1000 μmol/mol	50 μmol/mol	150 μmol/mol	1 μmol/mol
H_2S	0~100 μmol/mol	10 μmol/mol	35 μmol/mol	1 μmol/mol
Ex	0~100% LEL	20% LEL	50% LEL	1% LEL
O_2	0~30% VOL	19.5% VOL	23.5% VOL	0.1% VOL

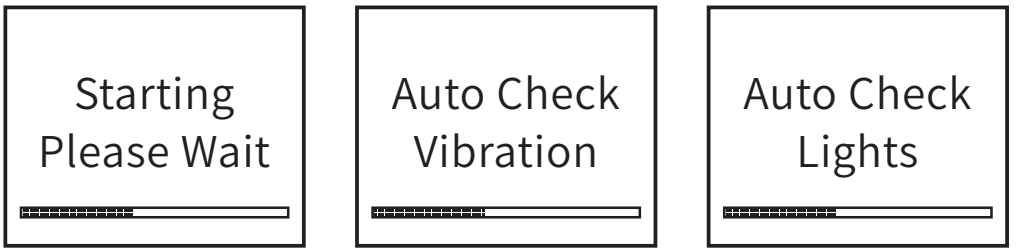
Other Parameters	
Display erro	⩽ ±5%FS
Response time	<30 seconds
Indication method	LCD liquid crystal display real-time data and system status, light, vibration and real voice recording (Chinese and English) prompts
Working environment	temperature -10°C ~ 55°C ; humidity < 95%RH condensation
Working voltage	DC 3.7V (2000mAh Lithium battery)
Charging time	About 2.5h
Battery life	About 10h (air pump off)
Charging	Type-C DC 5V 1A
IP class	IP54
Sensor life	1 year
Sensor principle	electrochemical and catalytic combustion
Dimension	134x66x43mm
Weight	220g

4. Setup and Operation

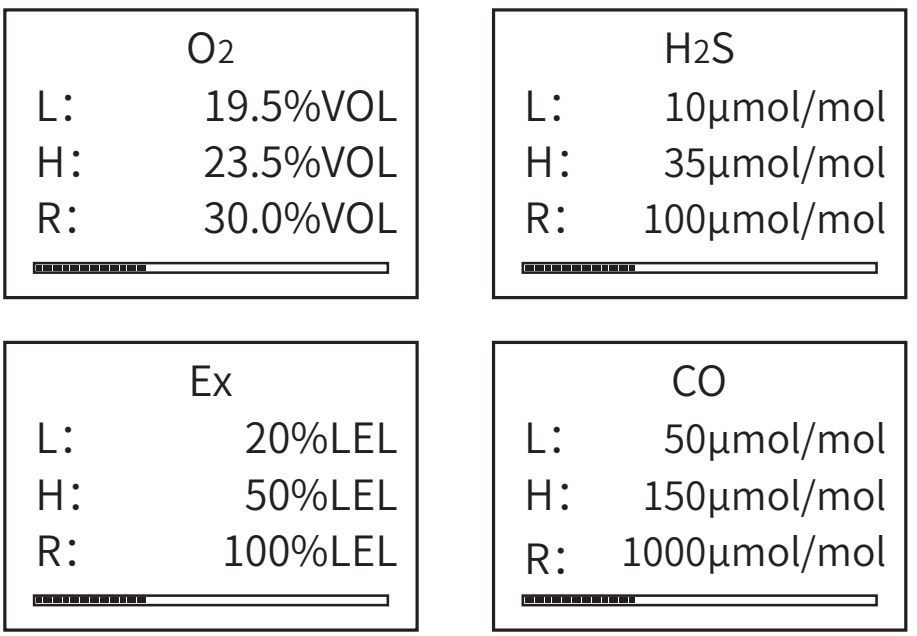
4.1 Turn On, Turn Off, Charging

4.1.1 Turn On

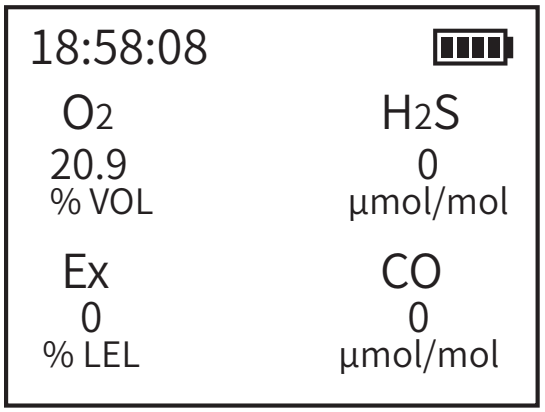
When the detector is off, long press , then the welcome page is displayed on the LCD. The indicator light will shine for 2 seconds, and the device will vibrate to test the concentration of a gas. At the same time, you can hear the voice prompt "Welcome to use intelligent voice type gas detector, it is starting, please wait", and preview the channel information.

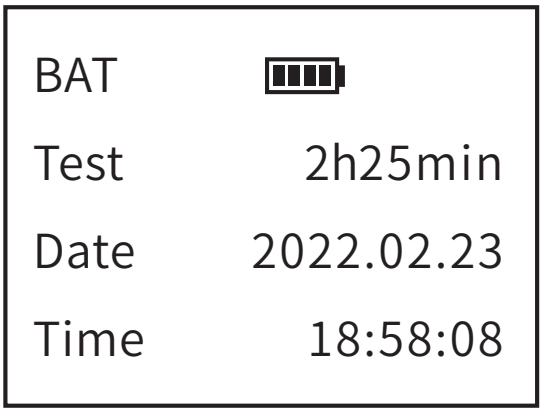


Please start the device in a clean environment.



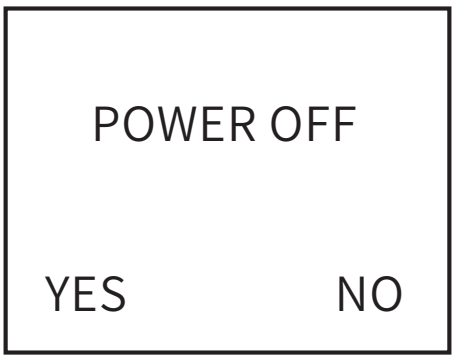
After the boot is completed, the normal gas main surface can be displayed, and the real-time gas concentration can be seen. Press ▲ to view the system status information.





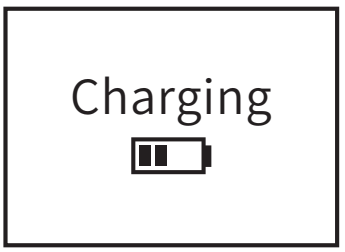
4.1.2 Turn Off

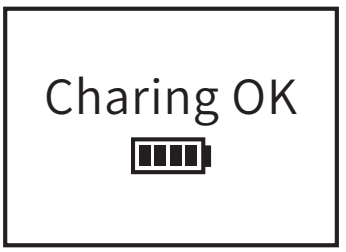
Under the main screen of the gas display, long press ⏻ , the screen will display the shutdown confirmation interface.
Press ▲ to power off the machine.
Press ▼ cancel the shutdown and return to the main screen of gas detection.



4.1.3 Charging

When the power is low, the instrument will prompt "power is low, please charge" by voice; When the power is too low, the detector will automatically shut down. Please insert the USB charging cable in the shutdown state, and the screen will show the charging state and charging symbols.

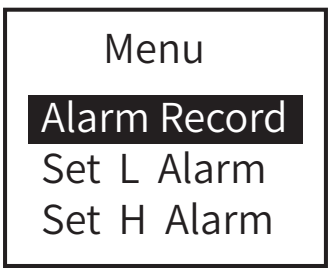


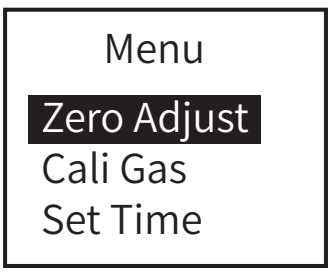


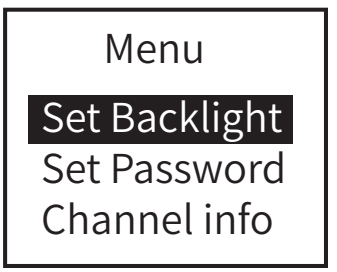
4.2 Settings Menu

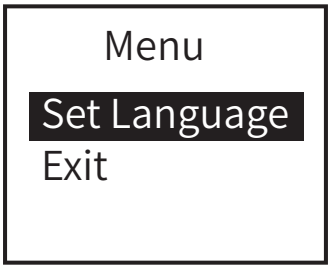
The menu of detector contain as follow: Alarm Record, Set Low Alarm, Set High Alarm, Zero Adjust, Calibrate Gas, Set Time, Set Backlight, Set Password, Channel Info, Set Language, Exit.

Under the gas concentration page, press the ▼ key to enter the menu selection.



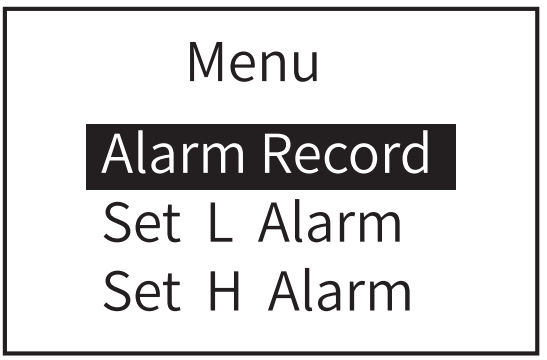






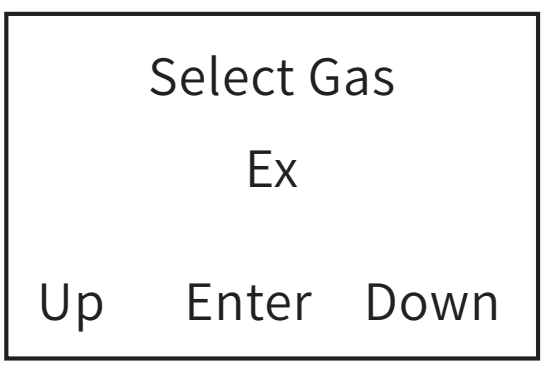
4.3 Alarm Record

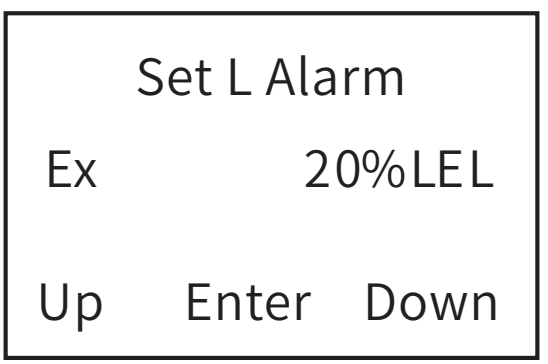
When selecting alarm record from the menu, press ⏻ to switch to the alarm record interface, press ▲ or ▼ to browse record, press ⏻ to enter options.

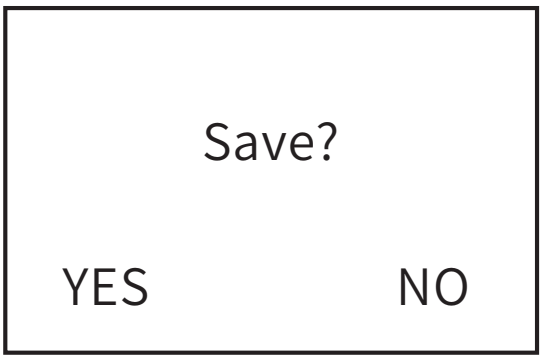


4.4 Low Limit Setting

Under the menu list choose the Set L Alarm, press the ⏻ key then you can enter the setting interface; you can select the channels of combustible gas, oxygen, hydrogen sulfide and carbon monoxide by ▲ and ▼ keys; after selecting the channels you need to set, press the ⏻ key to enter the page of setting low alarm concentration; The alarm concentration can be adjusted according to the ▲ and ▼, and press ⏻ key to enter the save and confirmation page, and select whether to save the modified value by pressing the ▲ or ▼ .

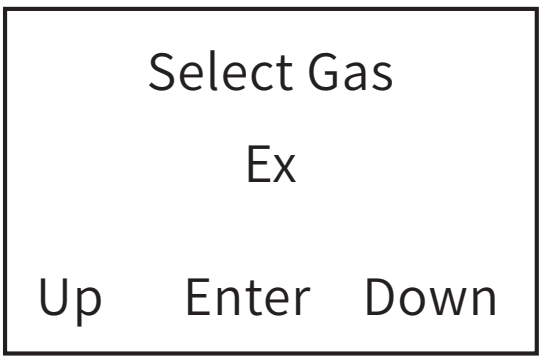


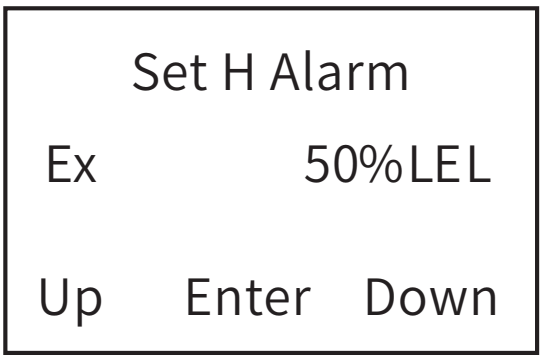


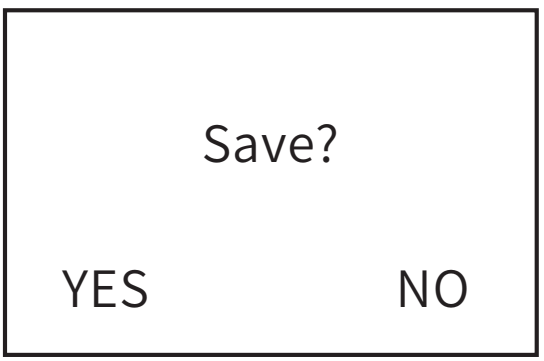


4.5 High Limit Setting

Under the menu list choose the Set H Alarm, press the key then you can enter the setting interface; you can select the channels of combustible gas, oxygen, hydrogen sulfide and carbon monoxide by ▲ and ▼ keys; after selecting the channels you need to set, press the key to enter the page of setting high alarm concentration; The alarm concentration can be adjusted according to the ▲ and ▼ , and press key to enter the save and confirmation page, and select whether to save the modified value by pressing the ▲ or ▼ .

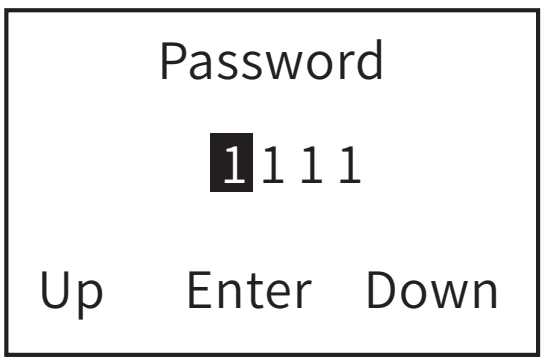


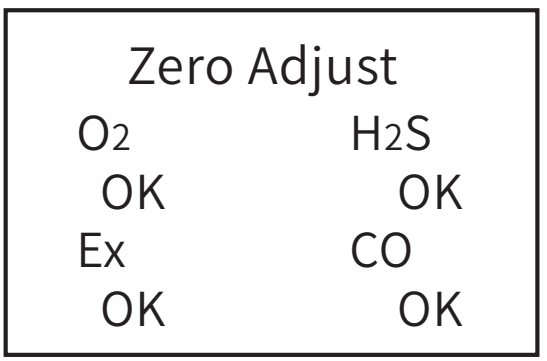




4.6 Zero Setting

When selecting zero setting in the menu, press and input password: 1111 to switch to the zero setting interface. After the progress bar is dynamically advanced, the zero setting completion page will be generated. Press to return to the menu page. Perform this operation in a naturally ventilated environment.



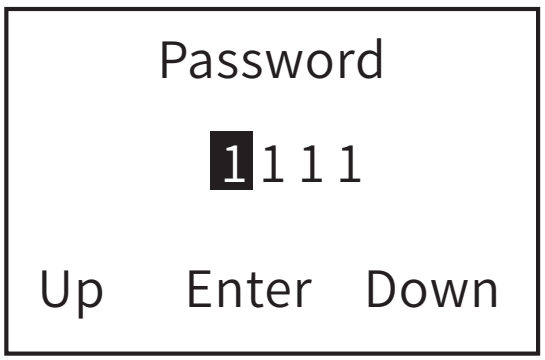


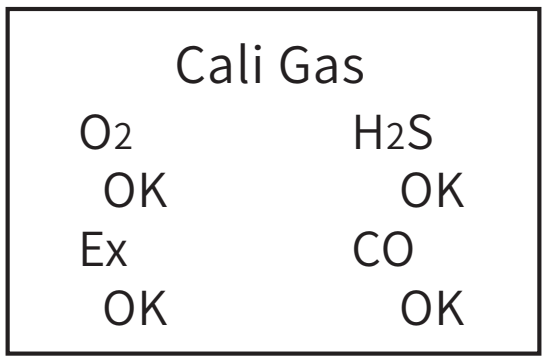
4.7 Calibration Settings

Prepare standard gas, pressure limiting valves, flow meters, gas pipes, and fix calibration air cover with screws.

When selecting calibration settings from the menu, press and input password: 1111, the instrument will automatically calibrate the zero first. After the calibration is complete, press to switch to the gas calibration interface, enter the four-in-one standard gas* with specified concentration, and press to enter the calibration state. After 30 seconds, the progress bar is completed, the four-in-one gas calibration is OK, and the calibration completion page is generated. Press to return to the menu page. Do not perform this operation without standard gas.

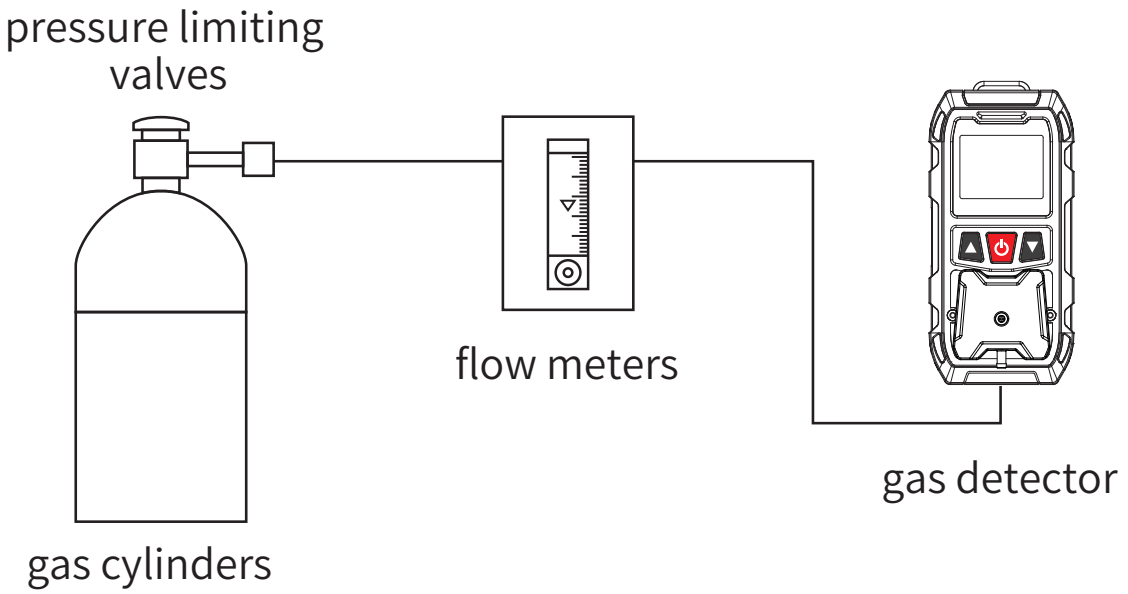
* Four in one standard gas: oxygen 18%VOL, carbon monoxide 100umol/mol, hydrogen sulfide 25umol/mol, combustible gas 50%LEL(methane).





Warning: Non professional personnel are strictly prohibited from carrying out this operation, otherwise all consequences will be borne by themselves.

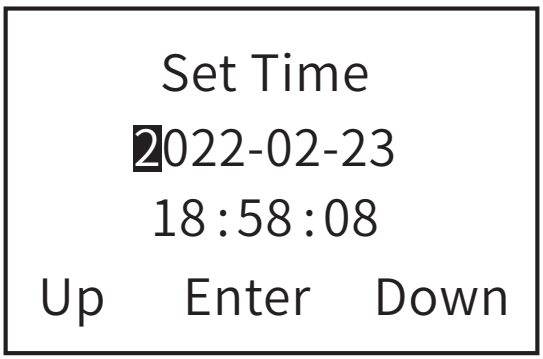
The tester has been calibrated uniformly when it is out of the factory. If the user wants to recalibrate, please follow the steps strictly, first set the zero point, then re-calibrate the settings. If the user fails to operate this setting, please contact the manufacturer back in time for calibration.



Calibration Diagram

4.8 Time Setting

Under the menu list choose the Set Time, press the key then you can enter the setting interface. Modify the date by press ▲ or ▼ key. Press the key to switch the year, month, date, hour, minute and second. After modified press the save is ok.

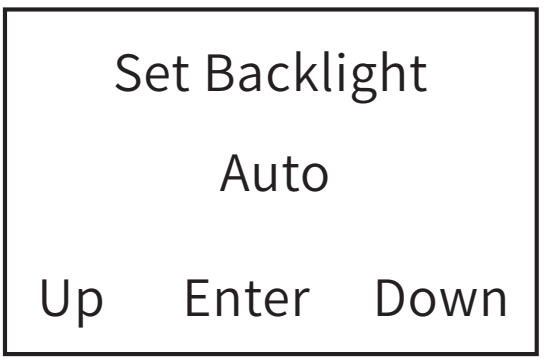


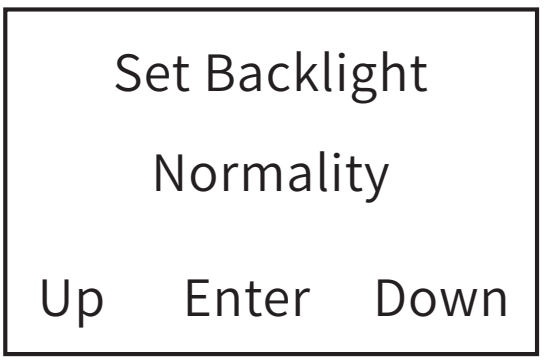
Please set the time at regular intervals, because the internal clock chip of will be affected by temperature, electromagnetic interference and battery power and cause errors.

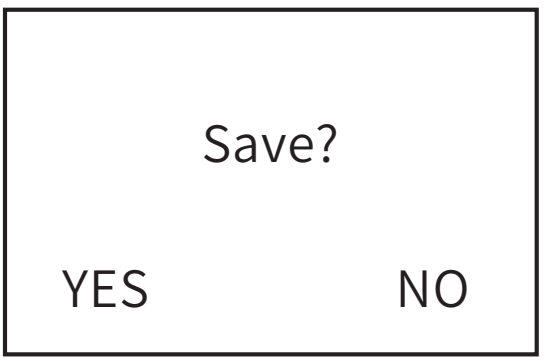
4.9 Backlight Settings

When selecting backlight Settings from the menu, press ⏻ to switch to the backlight Settings screen. Switch backlight setting options by pressing ▲ or ▼ .

Auto: the light will keep for 30 second;
Normally on: the light will always be working.







4.10 Password Setting

When selecting password Settings from the menu, press ⏻ to switch to the password verification interface; Enter the verification password and press ⏻ to go to the password setting page. The default password is 1111. To prevent others from performing operations, you can reset the new password.

Password	Set Password
1111	0000
Up Enter Down	Up Enter Down

Attention: please save the password properly. Once lost, it can only be returned to the manufacturer to resume the factory settings.

4.11 Channel Information

When selecting channel information from the menu, press , and the low concentration alarm threshold, high concentration alarm threshold and maximum range information of oxygen, hydrogen sulfide, combustible gas and carbon monoxide will be displayed successively.

O_2	
L:	19.5%VOL
H:	23.5%VOL
R:	30.0%VOL

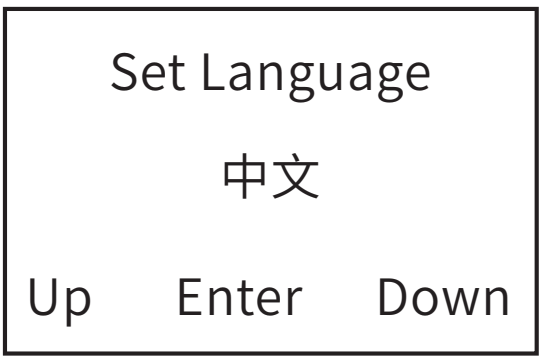
H_2S	
L:	10μmol/mol
H:	35μmol/mol
R:	100μmol/mol

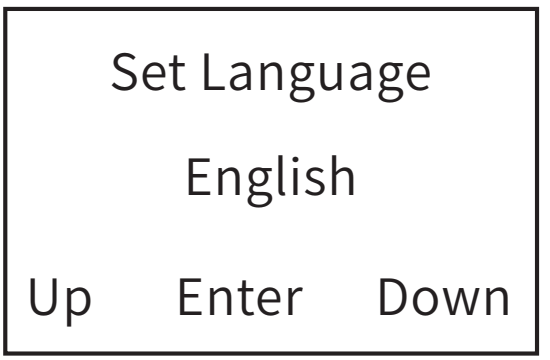
Ex	
L:	20%LEL
H:	50%LEL
R:	100%LEL

CO	
L:	50μmol/mol
H:	150μmol/mol
R:	1000μmol/mol

4.12 Language Switch

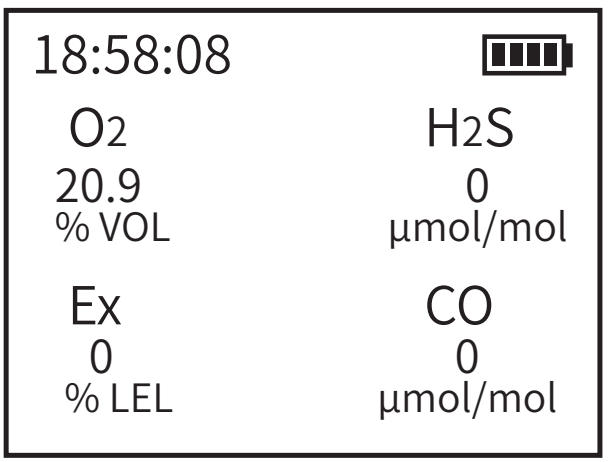
When selecting language Settings from the menu, press ⏻ to jump to the language setting page. Toggle language Settings by pressing ▲ or ▼ ; Press ⏻ to enter the save interface and select whether to save. (The detector supports language switching between Chinese and English, and the prompt voice is consistent with the voice set by the system.)





4.13 Exit

Select Exit, press the ⏻ key, the system exits the menu, and you can return to the display gas real-time concentration page.



5. Function Application

5.1 Real Display

Turn on the detector. After the self-test, the display screen is in standby state, which displays four concentrations of combustible gas, oxygen, carbon monoxide and hydrogen sulfide in real time. When the display backlight is turned off, press the middle button to turn on the backlight again (the backlight is kept for 30 seconds after any operation).

5.2 Ex Alarm

When the concentration of Ex gas is detected to be higher than the low alarm value set by the system, the detector will broadcast the voice "Please note that the concentration of EX gas exceeds the standard" and continue to simulate the alarm sound, the detector vibrates and its alarm light shines. When the detector detects that the concentration of combustible gas is lower than the minimum alarm value, the voice, light and vibration alarm states will stop.

5.3 O_2 Alarm

When the concentration of O_2 is detected to be lower than the low alarm value set by the system, the detector will broadcast the alarm signal "Please note that the concentration of oxygen is too low", which is higher than the high alarm threshold set by the system. The detector will broadcast the alarm signal "Please note that the concentration of oxygen exceeds the standard" and always simulate the alarm sound, the detector vibrates and its alarm light shines. When the detector detects that the concentration of oxygen returns to the normal value, the voice, light and vibration alarm states will stop.

Note: O_2 concentration in normal air is 20.9%. Users can adjust the value of low and high alarm according to actual needs.

5.4 CO Alarm

When the concentration of CO gas is detected to be higher than the low alarm value set by the system, the detector will broadcast the voice "Please note that the concentration of CO gas exceeds the standard" and continue to simulate the alarm sound, the detector vibrates and its alarm light shines. When the detector detects that the concentration of CO is lower than the minimum alarm value, the voice, light and vibration alarm states will stop.

5.5 H_2S Alarm

When the concentration of H_2S gas is detected to be higher than the low alarm value set by the system, the detector will broadcast the voice "Please note that the concentration of H_2S gas exceeds the standard" and continue to simulate the alarm sound, the detector vibrates and its alarm light shines. When the detector detects that the concentration of H_2S is lower than the minimum alarm value,the voice, light and vibration alarm states will stop.

5.6 Alarm Data Storage

After the detector triggers the alarm, when the detection alarm gas restores to the normal threshold set, the detector will save the current alarm information to the internal storage of the detector, and according to the user set low concentration alarm threshold, high concentration alarm threshold can be divided into low and high alarm. The user can search through the alarm in the menu.

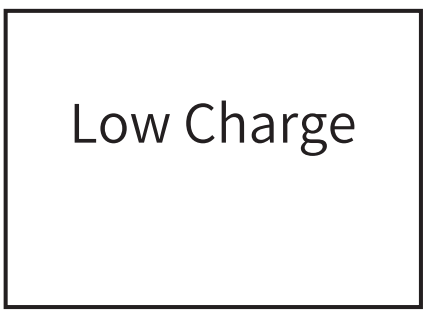
22-02-23	08:43:44	
O_2	L Alarm	0.0
H_2S	L Alarm	5
Ex	L Alarm	5
CO	L Alarm	5

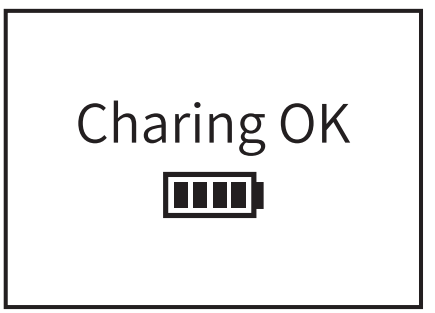
Note：The alarm voice support Chinese or English, as same as the language you choose.

Warning：
1. The detector only alarm when it is detecting;
2. Do not charging detectors at the gas monitoring site to avoid fire or explosion caused by sparks during the plugging process.
3. Try not to charge the detector on startup, so as not to affect charging speed.

6. Power Charging

1. Large capacity lithium battery is built into the detector, which can standby for 10H when fully charged. Please charge in time when the detector indicates that the battery is low.
2. Use the Type-C 5V, 1A cable for charging, the detector can be charged. Full display, charging is complete.
3.Please do not user the detector when charging. Please use after it is fully charged.





7. Precautions

1. Prevent the detector from falling down or being subjected to severe vibration.
2. In the presence of high concentration gas, the detector may not be used normally.
3. Please strictly operate and use according to the instruction manual, otherwise it may cause the test result to be inaccurate or damage the detector.
4. The detector shall not be used in the environment containing water vapor, acidic gas, alkaline gas, strong oxidizing gas and dust.
5. This product should not be stored or used in environments containing corrosive substances (such as chlorine, silica gas etc.) or in other harsh environments, including too high or too low temperature, high humidity, electromagnetic field and
   strong sunlight exposure.
6. If there is dirt on the surface of the instrument after long-term use, please gently wipe it with clean soft cloth dipped in water. Do not use corrosive solvents and hard materials to wipe the surface of the machine. Otherwise, it may lead to scratches or damage on the surface of the instrument.
7. In order to ensure the accuracy of detection, the detector should be calibrated regularly, and the verification period should not exceed 1 years.
8. Any failure or failure to be described in this manual should be contacted with our company for settlement.

8. Common Trouble and Solutions

Fault	Failure cause	Operation
Can not turn on	Low battery	Please get charging
	Detector's down	Please contact the factory
	Circuit fault	Please contact the factory
No detect value	Circuit fault	Please contact the factory
Detecting not true	Sensor over life	Please contact the factory to change
	Long time no cali	Geentstoor calibration
Time display wrong	Battery power is exhausted	Please get charging and resetting time
	Strong electromagnetic	Re-setting time
Set zero fault	The sensor zero drift too high	Calibrate it or change sensor
After detection the value not back to 0 (except O_2)	Zero drift	Zero calibrate
Detector display whole range	Sensor bad	Change new sensor

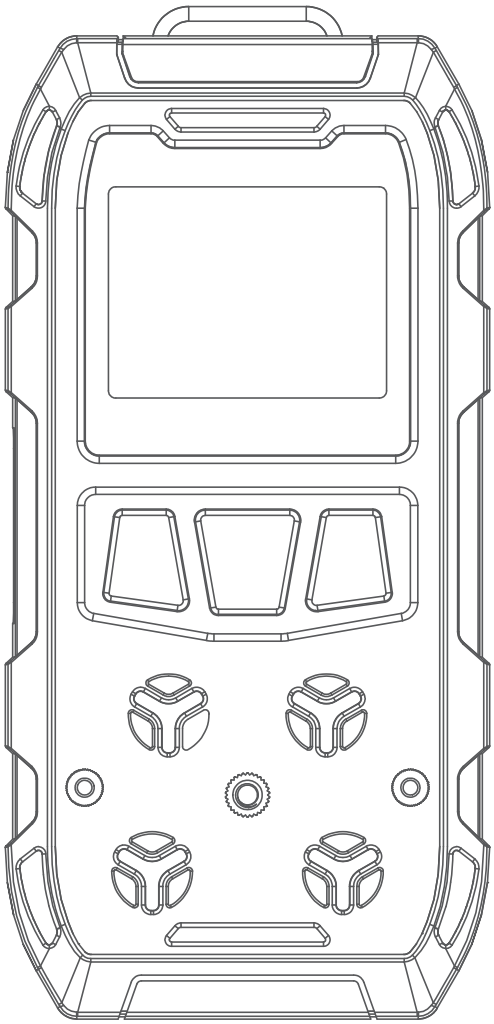
9. Storage

The detector should be stored in the ventilation room with ambient temperature 0°C to 40°C and humidity <85%. Avoid direct sunlight, and air can not contain harmful gases or impurities that are corrosive to the detector.

10. Packing List

Please check carefully whether all accessories of the instrument are complete according to the following list. If incomplete, please contact the dealer or manufacturer in time.

No.	Name	Unit	QTY	Remark
1	Meter	PC	1	
2	Type-C Line	PC	1	
3	Color Box	PC	1	
4	User Manual	PC	1	
5	Calibration Cover	PC	1	including one screw
6	Cloth Bag	PC	1	Aluminum case (flagship model)
7	Suction Pump Cover	PC	1	Flagship model only
8	Hose	PC	1	Flagship model only



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