Zhongan S360
PortableType Gas Analyzer
User Manual

Thank you for using the series of products of henan zhongan electronic detection technology co., LTD. And follow the relevant operation steps provided, so that you can fully enjoy the services provided by our company, at the same time to avoid your wrong operation and damage to the machine or other accidents.

Copyright statement

Adhering to the principle of scientific and technological progress, henan zhongan electronic detection technology co., LTD is committed to product improvement and product performance improvement. The company reserves the right to make any product improvement without prior notice.

If the user does not install or repair the replacement parts according to the instructions in this manual, the user shall be responsible for the responsibilities arising therefrom.

User service guidelines

Before using this product, please check the accessories, product certificate and user warranty card carefully according to the product list. If you find that it is not complete, please contact the seller or manufacturer immediately.

2 Within 12 months from the date of sale, if the user complies with the storage, transportation and use requirements, and the product quality is lower than the technical indicators, the warranty will be free of charge.

3 Our company will carry out fee-based repairs for damage caused by violation of operating regulations and requirements, failures caused by maintenance of non-specialized technical service department of our company, or product quality problems caused by irresistible factors.

4 When the product is being repaired, please show the product warranty card. Failure to produce a product warranty card will be a charge for repairs.

6 If you have any questions or dissatisfaction with the products and services we provide, including product technology, quality, installation and maintenance, service attitude, charging standards, etc., please contact us in time, we will properly handle your comments

Catalogue

Notice for use

Please read the following notes before using the analyzer

Do not use damaged gas analyzers. Before using the analyzer, please check the shell for cracks or missing parts. If the analyzer is damaged or missing parts, please contact our company or distributor immediately

Note: if the sensor is biased, when the battery runs out (the machine runs to the state of automatic shutdown, or the natural state of idle for a long time), it needs aging (5 hours) to recharge again. If no aging is carried out, the corresponding sensor will display a value of full range after starting up.

➢ Replacing components by yourself may damage the internal safety of the analyzer.

➢ Do not expose gas analyzer to electric shock or severe continuous mechanical vibration.

➢ Waste batteries and sensors should be disposed of by qualified recyclers or hazardous materials handlers. Do not throw them into rubbish bins

➢ Do not disassemble or put the battery into fire, and avoid short circuit of positive and negative electrode, or it will cause fire or explosion.

➢ Do not disassemble, adjust or repair the gas analyzer without permission

➢ Do not splash water, chemical solvents, benzene or gasoline on the analyzer, and avoid inhaling such substances, which may cause the analyzer to malfunction.

➢ Prevent the unit from falling or being violently shaken.

➢ In order to ensure the measuring accuracy of the analyzer, it is necessary to calibrate the analyzer regularly (usually half a year).

➢ It is necessary to avoid the frequent impact of high concentration of toxic gas on the analyzer.

➢ When the sensor has failed or its service life (24 months), do not continue to use.

一、Summarize

S360 series product is portable multi-gas detection instruments with high sensitivity for industrial use. They are suitable for gas leakage rescue, underground pipelines or mines, etc., and can effectively guarantee the safety of workers and production equipment from being damaged. It can detect different gases according to different types of sensors, with rich functions, simple operation, easy to carry and good shock resistance. This product USES the high resolution touch LCD technology, the display is more intuitive and clear, more convenient to operate.

S360, S is the product form, representing portable gas analyzer; 360 refers to the design serial number and represents a variety of gas combinations.

Main functions and features

❖ Large screen color Chinese menu operation

❖ High-resolution touch LCD display

❖ Quick detection of gas leak points

❖ Adjustable range

❖ quick preheating, quick response time

❖ Sound vibration alarm signal

❖ Convenient zero adjustment, convenient and quick

❖ It can detect up to 8 free combinations of gases

Main technical parameters：

✓ Product name: portable multi-gas analyzer

✓ Product specification: according to the type of gas being measured

✓ Sampling mode: built-in pump suction type

✓ Response time：≤30s

✓ Indication error：≤3%FS

✓ Work environment： temperature -10℃～55℃；Relative humidity：

≤93%(non condensing)

✓ Preheating time: ≤180s

- ✓ Storage environment: temperature: -10℃ ~ 55℃; Relative humidity: ≤93%(no condensation)
- ✓ Indication mode: LCD color touch LCD display
- ✓ Charging time: no less than 10 hours
- ✓ Continuous working time: no less than 15 hours
- ✓ Battery specification: DC7.2 v-26ah lithium ion rechargeable battery
- ✓ Weight: About 4.75kg
- ✓ Size：293x110x210(mm)

二、Appearance and function indication

2.1 Appearance

1	Time	7	Menu/exit button
2	Electricity	8	Right button
3	Gas name	9	Power light
4	Detection concentration	10	Alarm light
5	Gas Unit	11	Fault light
6	Left button	12	On/off button

```
1 : Air inlet ———————              —————— 3 : Air outlet

2 : Charge interface ——————        —————— 4 : Upload the
                                            computer USB
```

2.2   Appearance description

1. **Function of the key**：button ⏻ start.

2. **Indicator lamp**：

> The left indicator is the power status indicator.
>
> The middle one is the alarm light.
>
> Fault indicator light on the right.

3. **Indicator status:**

when charging, the left indicator flashes and the indicator stays on when charging is completed; When working normally, the battery status indicator flashes, and the indicator in the interface of system setting is always on.

4 Charging function description：

When the indicator light of charger is red, it means "charging". If the button is pressed at this time, all the indicators will flash. The screen shows" charging" and shows "charging OK" after completion of charging.

三、 Operating instructions

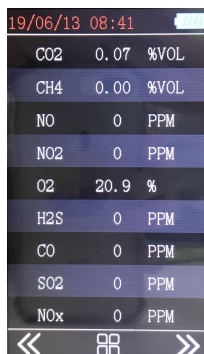## 3.1   S360 Portable multi-gas analyzer boot interface description

In the shutdown state, press key ⏻ ,when the buzzer beeps, it indicates t hat the analyzer is on,then the system internal implementation of self - inspectio n procedures and sensor preheating.

figure 1

figure 2

When the system enters the main program, it displays the name of each channel, detection value and self-check of the unit. At this time, it enters the normal detection state and the collection pump works. As shown in figure 2

3.2 S360 Portable multi - gas analyzer shutdown instructions

Press the button ⏻ when the device is in detection mode and on. The screen shows that it is shutting down,after 3s the information disappears. Release the key to close it.

3.3 S360 portable multi - gas analyzer parameter function
User menu function description is shown in the table below：

❖ Alarm record: recent alarm record can be viewed, up to 500 records memory
❖ Alarm setting: the low-level and high-level alarm values of each detection

channel can be set

- ❖ Zero setting: zero translation of each detection channel can be set (except oxygen)
- ❖ Calibration setting: gas parameters of each channel can be verified or calibrated with sample gas
- ❖ Precision setting: the accuracy of the detection channel can be changed (decimal places)
- ❖ Upload Settings: used to connect computer data transmission
- ❖ Bluetooth Settings: set the bluetooth switch and connect the bluetooth printer for printing alarm records

Clock setting: modify system time

Warning: please do not charge the portable gas analyzer at the test site to avoid fire or explosion caused by sparks generated by unplugging the charger; Please try not to charge the portable gas analyzer when it is on, so as not to affect the charging speed and battery life.

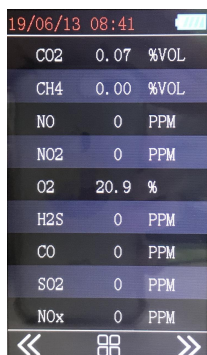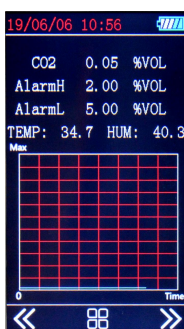## 3.4 Detailed Operation Description
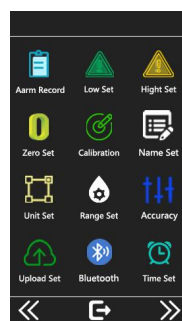

Figure 3

Figure 4

Figure 5

Press the left and right keys (red mark in FIG. 3) to enter the channel detailed detection interface (FIG. 4), and switch the channels to display. Click

the "set" key (green mark in FIG. 3), enter the password 1111, and click "ok" to enter the system function interface (FIG. 5).

1）. Alarm record: record alarm data.

Enter the system function interface and select the first item "alarm record". Display as shown in figure 6

Interface display: alarm channel, alarm time, alarm status, alarm concentration, alarm total number, alarm location

Blue mark (FIG. 6) print alarm record; The red mark (figure 6) clears the alarm record. Click exit to return to the detection interface
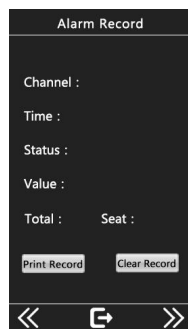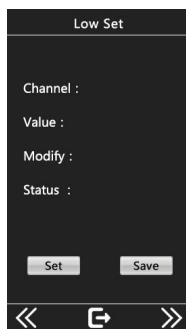
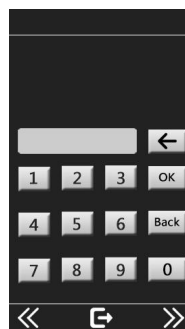| Alarm Record	Low Set	
Channel :	Channel :	
Time :	Value :	1 2 3 OK
Status :	Modify :	
Value :	Status :	4 5 6 Back
Total : Seat :		7 8 9 0
Print Record Clear Record	Set Save	
≪ ➦ ≫	≪ ➦ ≫	≪ ➦ ≫
Figure 6	Figure 7	Figure 8

2）.Low/high alarm setting: sets the channel's low and high alarm values.

A) Select "low/high alarm setting" from the system function and enter the alarm setting interface. As shown in figure 7

press the button of setting (blue mark in FIG. 7) to display FIG. 8, enter the corresponding value of setting, and click save (red mark in FIG. 7). Click exit to return to the detection interface

Note: the input value cannot be higher than the channel range. The input value should be in decimal place with the displayed value

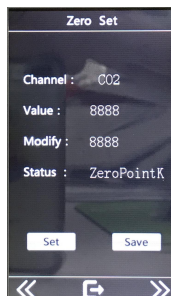3）. **Zero setting: enter zero translation.**

Figure 9

A) press the left and right keys to switch the selection channel. As shown in figure 9

 click "Settings", modify the value to display the current zero value, click "save" when the value is stable, and click "modify state" to display complete modification, and click "exit" to return to the detection interface.

Note: this operation is prohibited in the co2 channel. Therefore, if you click the "set" button, you must save the modification to exit. Therefore, you should use the modification carefully.

4）. **Instrument calibration: enter calibration. As shown in figure 10**
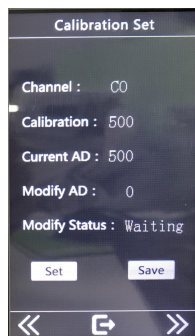

Figure 10

Press the left and right keys to switch the selection channel ". As shown in FIG. 10, after selecting, press the "set" key to enter the standard gas value. A) (note: methane and carbon dioxide must be calibrated with 1/2 standard gas in the range; Once the calibration program is started, the steps must be completed, and there is no exit in the process.)

Reserve standard gas value as determined. Enter standard gas, and click save button after the value of AD is stable. Click exit to return to the detection interface

5）. **Name setting, unit setting, range setting**

Note: this setting is finished in the factory, and the customer is not allowed to change it without permission.

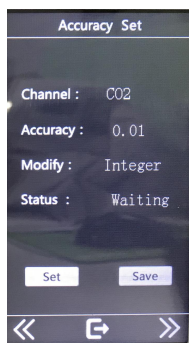6）. **Precision setting: modify channel accuracy.**

Figure 11

A） from the system interface, click precision setting to enter the precision setting interface (FIG. 11).

click "set input decimal place decimal place (e.g. : 0.01 input 2; 0.1 enter 1). Click exit to return to the detection interface.

7）.Upload Settings: connect to the computer and transfer the alarm recording data to the computer.

A) click the upload Settings button, and the upload status display is waiting for

PC access. As shown in figure 13

Connect to the computer, run the computer software, select the USB port of the computer connected by the data cable, click Connect,and click Upload. As shown in figure 12
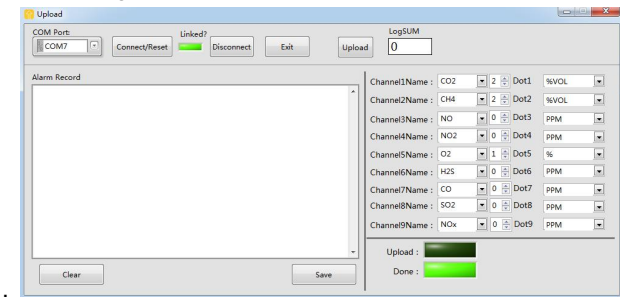

Figure 12
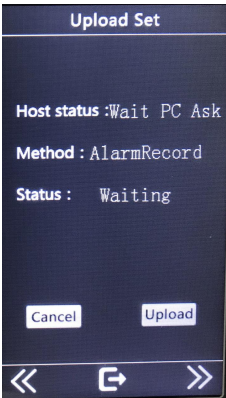
Figure 13   Figure 14   Figure 15

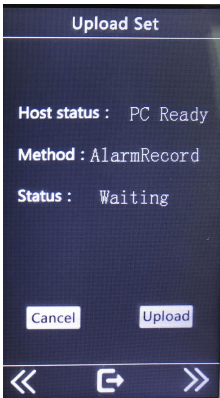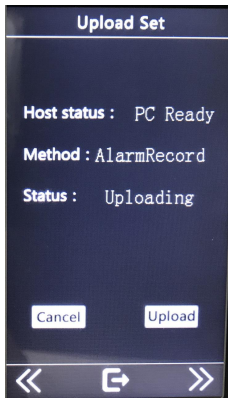The computer displays the interface as shown in FIG. 12, and the upper computer state of the analyzer interface changes to PC ready (as shown in FIG. 14). Click the upload button on the analyzer screen, and the upload state displays to being uploaded (as shown in FIG. 15). After uploading, click exit to return to the detection interface.

Note: this operation should be completed within 10s. If timeout occurs,

please repeat the operation B) and C).

8. Bluetooth Settings: turn on/off bluetooth

When printing paper alarm records, this function needs to turn on the bluetooth printer power switch first, and then turn on the bluetooth switch of the analyzer, and turn off the bluetooth function in time after use, so as to reduce power consumption and obtain larger battery life. (bluetooth printers should also be switched on and off as needed to reduce power consumption). Click exit to return to the interface to be detected

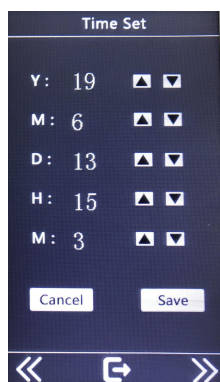## 9.Time setting: change the system time. As shown in figure 16

Figure 16

Click the up and down button after the corresponding year, month and day to change the time, and then click save to complete the change. Click exit to return to the detection interface

四、Use and precautions

4.1 Prevent the unit from falling or being violently shaken.

4.2 The unit may not work properly in the presence of high concentrations of gas.

4.3 Please operate and use in strict accordance with the instructions, otherwise the test results may be inaccurate or damage the machine.

4.4 This product shall not be stored or used in an environment containing corrosive gases (such as high concentration of chlorine gas, etc.), nor in other harsh environments, including (too high, too low temperature, high humidity, electromagnetic fields and strong sunlight).

4.5 If there is dirt on the surface of the machine after long-term use, please dip a clean soft cloth with water and gently wipe it, and do not use corrosive solvents or hard objects to wipe the surface of the machine, otherwise it may cause scratches or damage to the surface of the machine.

4.6 In order to ensure the detection accuracy, the machine shall be calibrated regularly, and the verification period shall not exceed one year.

4.7 Please unload the lithium battery and sensor of the waste portable gas analyzer and send them to the designated place or return to our company. Do not throw them into the garbage can randomly.

4.8 Please contact us for any application or use problems beyond the description in this manual.

4.9 It is not allowed to remove or replace the battery pack or charge the battery pack in explosive gas environment. It is not allowed to use plug and socket equipment without explosion proof certification in explosive gas environment, nor to replace the sensor.

4.10 The products with the explosion-proof certificate are not allowed to change the components or structures that affect the explosion-proof performance at will.

五、 Failure and solution

Fault phenomenon	Possible cause of failure	Process mode
cannot be turned on	Voltage Too Low	Please charge in time
	system halted	Please contact dealer or manufacturer for repair
	circuit failure	Please contact dealer or manufacturer for repair
No reaction to test gas	circuit failure	Please contact dealer or manufacturer for repair
Inaccurate display	Sensor expiration	Please contact the dealer or manufacturer to replace the sensor
	Long-term uncalibrated	Please timely calibrate
Time display error	The battery is completely dead	Charge in time and reset the time
	Strong electromagnetic interference	Reset time
Zero calibration function is not available	Excessive sensor drift	Calibrate or replace the sensor in time
Display "-0" on the interface of normal test	sensor drift	Zero calibration
Full range is displayed on the normal detection interface of the instrument	sensor fault	Please contact the dealer or manufacturer to replace the sensor

六、**Storage**

Portable gas analyzer should be stored in the ventilation room where the ambient temperature is -20℃ ~ 60℃ and the relative humidity is no more than 93%, and the air should not contain harmful gases or impurities that can corrode the portable gas analyzer.

七、**Parts list**

External packing box of portable gas analyzer *1, portable gas analyzer *1, analyzer charger *1, instruction manual *1, warranty card *1, bluetooth printer *1, data cable of upload computer *1, bluetooth printer charger *1.

Gas analyzer parameter list

Gas	Measuring range	Optional range	Resolution	Response time
EX	0-100%LEL	0-100%VOL（infrared）	1%LEL/1%vol	≤10s
CO	0-1000PPM	0-500/2000/5000 PPM	0.1/1PPM	≤10s
O2	0-30%VOL	0-30%、0-100%VOL	0.1%vol	≤10s
H2S	0-100PPM	0-50、200、1000PPM	1/0.1PPM	≤10s
NH3	0-100PPM	0-50、500、1000PPM	1/0.1PPM	≤15s
Benzene gas	0-100PPM	0-1、10、50、100PPM	0.01/0.1PPM	≤20s
Natural gas	0-100%LEL	0-100%LEL	1%LEL	≤20s
CH4	0-100%LEL	0-100%VOL	1%LEL/1%vol	≤20s
Fluorine	0-10PM	0-1、10PPM	1/0.1PPM	≤20s
HCl	0-20PPM	0-20/50PPM/100	0.01/0.1PPM	≤20s

		PPM		
N2	0-30%VOL	0-30%VOL、100%VOL	0.1%LEL/1PPM	≤20s
H2	0-100%LEL	0-1000PPM	1%LEL/0.1PPM	≤20s
CL2	0-20PPM	0-10、100PPM	0.1PPM	≤20s
NOx	0-20PPM	0-50、1000PPM	0.1/1PPM	≤20s
Formaldehyde	0-20PPM	0-50、100PPM	1/0.1PPM	≤20s
SO2	0-20PPM	0-50、1000PPM	0.1/1PPM	≤20s
NO	0-250PPM	0-500、1000PPM	1PPM	≤20s
NO2	0-20PPM	0-50、1000PPM	0.1/1PPM	≤20s
Phosphine	0-20PPM	0-20、100PPM	0.1PPM	≤20s
CO2	0-5000PPM	0-1%/5%/10%VOL(infrared)	1PPM/0.01%VOL	≤20s
Hydrogen fluoride	0-10PPM	0-1、10、50、100PPM	0.01/0.1PPM	≤20s