JB-M1A

Portable gas detector

Manual User

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JBK SYSTEMS

1. Description

The JB-M1A portable single gas detector enables continuous detection of flammable and toxic gases. It is suitable for detecting flammable and toxic gas leaks in underground pipes or mines and ensures the safety of workers, prevents destruction of facilities. The detector, using a sensor of excellent quality, performs detection by natural diffusion. It has good sensitivity and repeatability. The detector adopts a built-in controller MCU, which is easy to operate.
The shell adopts special high strength material and rubber to prevent smoothness, with waterproof marks and dustproof.

2. Features and specifications

2.1 Features

Advanced MCU control with low power consumption;

Adjustable low and high alarm levels;

Adjustable calibration level;

High concentration protection;

Gas sensor self-test;

Low battery indicator;

Self-regulation function

Visual and audible alarm with vibration;

Advanced self-monitoring and self-renewal function

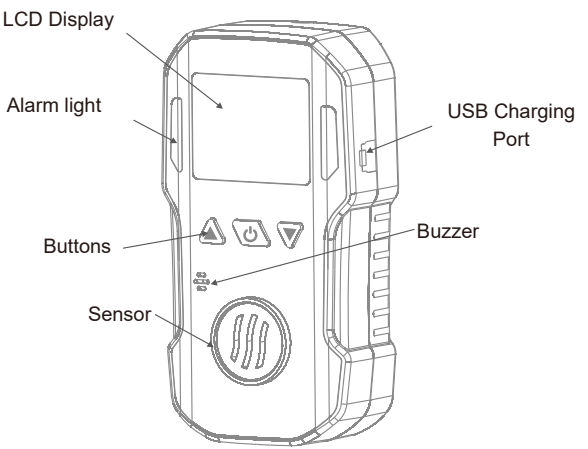
Password management to avoid incorrect operation; Explosion -proof enclosure

2.2 Specication

Range: see attached Table 1.
Detected gas: flammable gas (CH4, C3H8, H2) and toxic gas, oxygen,
other rare toxic gases such as ammonia, NO, PH3, NH3, NO2, HCN, SO2, etc. also available, can be specified by the customer in advance.
Alarm settings: see attached Table 1.
Accuracy: ≤ ± 5% FS.
Response time: T<30s
Signaling: LCD display indicates time and status;
Indication of alarm, fault and low voltage by LED, sound, vibration
Operating environment:
Operating temperature: -40～70 (for flammable gas).
-20～50 (for toxic gas).
Humidity: < 95%RH b ez condensation
Operating voltage: DC3.7V Li-ion 1500mAh battery
Operating time: >8h in continuous mode
Charging time: 4h ～6h
Sensor life: 2 years
Protection level: IP65
Weight: about 130g (with battery, but without accessories)
Dimensions: 100mm×60mm×30mm

3. Structure and functions

3.1 Design



3.2 Structure

Main case, circuit boards, batteries, display, sensors, component chargers.

3.3 Working method

Electrochemical or catalytic sensor.

4. Operation and functions

4.1 Display

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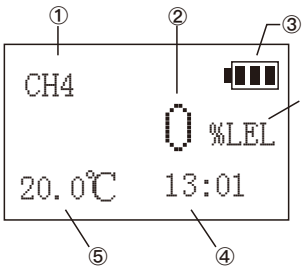

1.Gas type
2.Concentration value
3.Full voltage
4.Time
5.Temperature

4.2 Buttons

To activate the detector, press and hold for 5 seconds.
Press to cancel the operation;
To deactivate the detector, press and hold it
for 5 seconds Press to set parameters

You can check the parameters, alarm record, low alarm, high alarm, zero calibration, calibration, set time.

4.2 Turn on

Hold the button for 5s, then release. The interface shows " Startup", "LED testing", then vibrates at "Motor testing", then beeps
beep and flashes "Testing sound and alarm", and enters the detection state.
At this point, it displays the gas concentration in the environment as Figure 1.

4.4 Turn off

To deactivate the detector, press the key , the following information will be displayed.
the following information:
At this time, the buzzer beeps. After 3 seconds, when the following number appears on the screen, loosen the key . The detector is deactivated.

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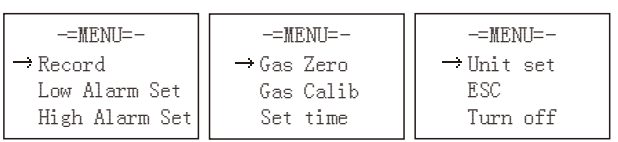
Rysunek 3

Note: When the detector does not detect a condition, press an hold until it returns to detection mode.

4.5 Menu manual

The user menu contains the following options:
Alarm recording, low alarm settings, alarm settings
high, zero calibration, calibration, time setting.
In the detection state, press the key, the screen will display the following screen, directly to the user menu, as shown in Figure 4



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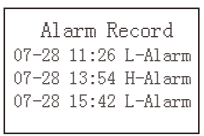
Setting the detector parameters

1 Alarm Recording:

Move the cursor to Alarm Recording, press to enter it as shown in Figure 5: Press and keys to scroll. You can also press ESC to return to the normal detection interface. Press the button in the alarm recording interface, shown in Figure 6:

Press the key to indicate Yes, the page will show Figure 7: Delete recording later. Press the key again to go to the normal detection interface. If you press , the record will not be cleared, and the interface will go directly to the menu setting screen.



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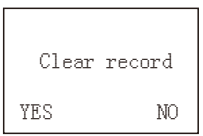

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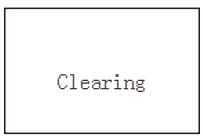

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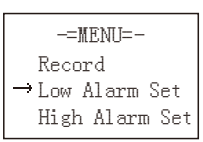
2. Low alarm setting:

Press ▼ in the menu interface, the interface shown in Figure 8: Press to enter the low alarm setting interface shown in Figure 9: Press ▲ to increase the value, press ▼ to decrease the value, press to save the currently selected value, the interface shown in Figure 10:

Device directly to the menu screen, press to return to the normal detection interface. If there are no special requirements, do not modify the alarm parameters.



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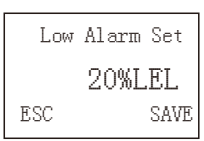

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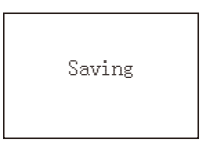

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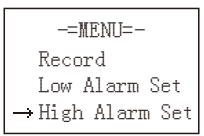
3. High Alarm Settings:

Press ▼ in the menu interface, the interface shown in Figure 11: Press to go to the high settings interface alarm, as shown in Figure 12: press ▲ to increase the value, press ▼ to decrease the value, the instrument directly to the menu page, pressing the button means saving the currently selected value, the interface shown in Figure 13: the instrument directly on the menu screen, press ESC to return to the normal detection interface.

If there are no special requirements, do not modify the alarm parameters.



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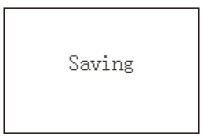

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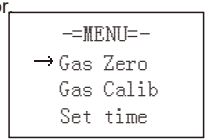
4.Zero function settings:

Press the ▼ button in the menu interface, the interface shown in Figure 14: press the button to enter the zero setting page, as shown in Figure 15: press the ▲ button to get the zero drift, as shown in Figure 16: the device directly into the menu settings page, press the button to save the drift value, the interface, as shown in Figure 17: the instrument directly on the menu screen, press the button again, the instrument will go to the normal detection interface.

Warning: this action is to ensure that the operation is performed in clean air, otherwise the concentration of the gas of reaction gas in the environment will affect the accuracy of the portable gas detector.



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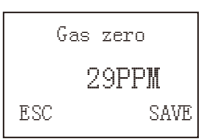

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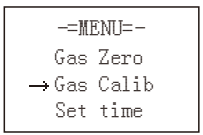

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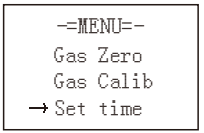
5.Calibration setting functions

To prevent the user from use this function affect the operation of the detector. This function is set separately. For this operation, please contact the manufacturer or distributor.

6.Time settings

Press ▼ button in the menu interface, the interface shown in Figure 19: press the button to enter the time setting page, as shown in Figure 20: press ▲ to increase the value, press ▼ to decrease the value, the device directly to the page menu, press the button to save the year value, the instrument directly to the month setting screen, as in Figure 21, press the ▲ and ▼ buttons to select the desired month, press the button to save the month value, the device directly on the screen date setting screen, as in Fig. 22, ss the ▲ and ▼ buttons to select the appropriate date, press the button to save the date value, instrument directly on the hour setting screen as in Fig. 23, press the ▲ and ▼ buttons to select the appropriate hour, press the button to save the hour value, instrument directly on the minute setting screen as in Fig. 24, press the ▲ and ▼ buttons to select the corresponding hour, press the key to save the data the portable gas detector display is saved later, and then go to the menu settings interface, and then press the portable gas detector to the normal detection interface.



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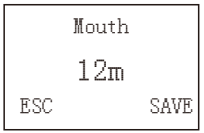

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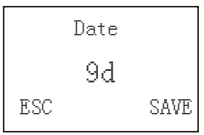

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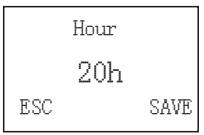

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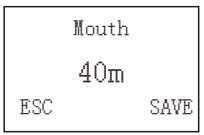

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4.6 Alarms

The following table shows the details of each alarm:

Low alarm:	A short, slow alarm sounds; The alarm indicator is yellow; The red alarm light flashes; The device vibrates.
High alarm	Customized sound sharp alarm; Alarm indicator is red; The red alarm light flashes; The device vibrates.
Low battery alarm	When the device has a low charge battery, it will emit a slow short alarm to remind the user to need to recharge.

4.7.Charging

Charge the detector when it shows a low battery or the detector cannot be turned on due to a discharged battery. Before charging, turn off the detector to avoid
possible damage. When the battery indicator on the screen is full and no longer changes, it means that charging is complete,
you can disconnect the charger.
Warning: While charging, the detector cannot detect gas leakage. Please do not try to charge it in test areas to
avoid fire or explosion. Do not charge it while the detector is running, to avoid potential damage.
Note: make sure to fully charge it at least once in
1 month if you don't use it for a long time.

Possible fault and appropriate solution

Possible fault	Possible cause	The right solution
No response to exceeding the alarm threshold	Incorrect alert point	Reset alert point
	Failure in electrical circiut	Contact to your seller
No response to gas detected	no zero calibration	calibrate point zero
	Failure in electrical circiut	Contact to your seller
Inaccurate indication	Delayed sensor operation	Contact to yout seller to change sensor to new
	Uncalibrated for a long time	on-time calibration
Insufficient number of hours of work	Charger failure	Change your charger
	Device failure	Contact to your seller
Unable to charge	Charger failure	Change your charger
	Device failure	Contact to your seller

6. Warnings!!!

6.1 It is forbidden to drop from a height or shake hard.
6.2 The detector may malfunction with interference gas of high concentration.
6.3 To avoid abnormal result or possible damage to the detector, use and operate the detector according to the instructions.
6.4 The detector should not be stored or used in an environment with corrosive gas (such as Cl2), or other harsh conditions, including excessively high or low temperature, high humidity, electromagnetic field and strong sunlight.
6.5 If, after prolonged use, there is dust on the surface of the detector there is dust, it should be gently cleaned with a clean, soft
cloth. The surface can be scraped or destroyed with caustic
solvent or with hard objects.
6.6 To ensure testing accuracy, the detector should be periodically calibrate. And the calibration period should be less than one year.
6.7 Please put away used lithium batteries in designated places or send them to our company. Do not randomly throw them into the garbage garbage can.

7. Accessories

Gas detector	1pc.
Calibration cap	1pc.
Charger	1pc.
Manual User	1pc.
Suitcase	1pc.
Warranty card	1pc.

Table 1

Type	Range	Low alarm	High alarm
CH4	0-100%LEL	20%LEL	50%LEL
C3H8	0-100%LEL	20%LEL	50%LEL
H2	0-100%LEL	20%LEL	50%LEL
H2	0-1000ppm	35ppm	250 ppm
H2S	0-100ppm	10ppm	15ppm
H2S	0-100ppm	10ppm	20ppm
CO	0-1000ppm	35ppm	200ppm
CO	0-1000ppm	30ppm	60ppm
C2H4O	0-20ppm	10ppm	15ppm
C2H4	0-100%LEL	20%LEL	50%LEL
C2H4	0-20ppm	5ppm	10ppm
O2	0-30%vol	19.5%vol	23.5%vol
C2H5OH	0-100%LEL	20%LEL	50%LEL
NH3	0-100ppm	25ppm	50ppm
CL2	0-20ppm	5ppm	10ppm
O3	0-20ppm	5ppm	10ppm
O3	0-10ppm	2ppm	5ppm
SO2	0-20ppm	2ppm	5ppm
SO2	0-100ppm	2ppm	5ppm
PH3	0-20ppm	0.3ppm	5ppm
PH3	0-5ppm	0.3ppm	2ppm
CO2	0-5000ppm	1000ppm	2000ppm
CO2	0-50000ppm	1000ppm	2000ppm
NO	0-250ppm	20ppm	50ppm
NO2	0-20ppm	5ppm	10ppm
HCN	0-500ppm	10ppm	20ppm
HCN	0-50ppm	10ppm	20ppm
HCL	0-50ppm	10ppm	20ppm
CH2O	0-10ppm	2ppm	5ppm
VOC	0-100ppm	20ppm	50ppm
C6H6	0-100ppm	20ppm	50ppm