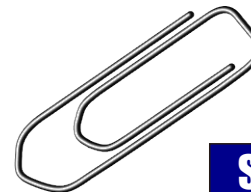
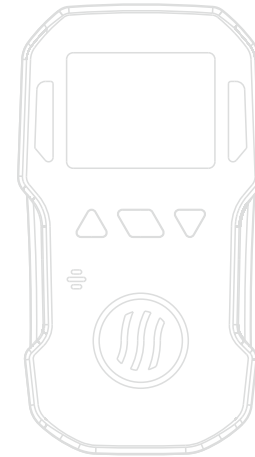


JBK-M1A

Portable gas detector

Manual User



JBK
SYSTEMS

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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 Specification

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: $\leq \pm 5\%$ 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 bez condensation

Operating voltage: DC3.7V Li-ion 1500mAh battery

Operating time: >8h in continuous mode

Charging time: 4h ~6h

Sensor life: 2 years

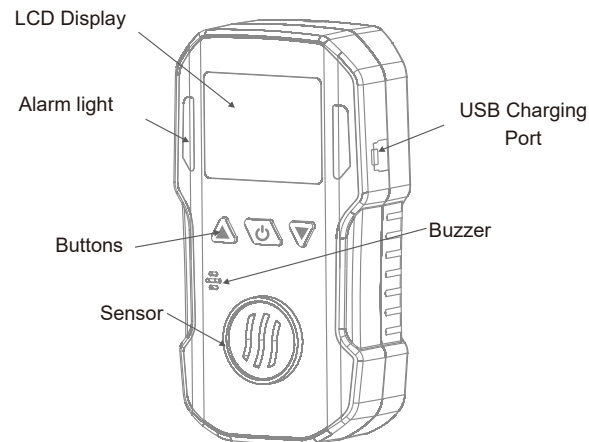
Protection level: IP65

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.

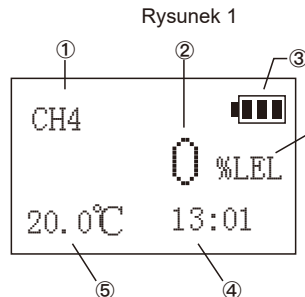
3.3 Working method

Electrochemical or catalytic sensor.

4. Operation and functions

4.1 Display

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.

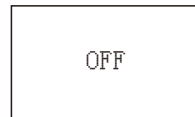
At this point, it displays the gas concentration in the environment as Figure 1.

4.4 Turn off

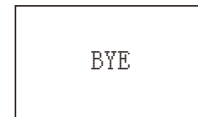
To deactivate the detector, press the key , the following information will be displayed.

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.



Rysunek 2



Rysunek 3


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

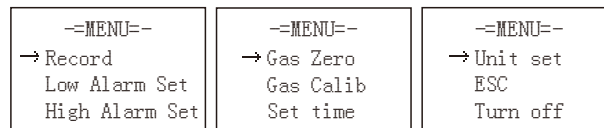
4.5 Menu manual

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,  screen will display the following screen, directly to the user menu, as shown in Figure 4

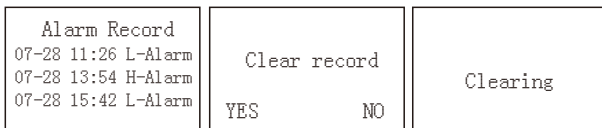


Rysunek 4

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.







Rys.5


Rys.6

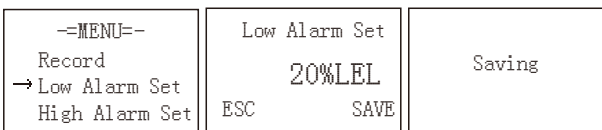
Rys.7

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.








Rys.8

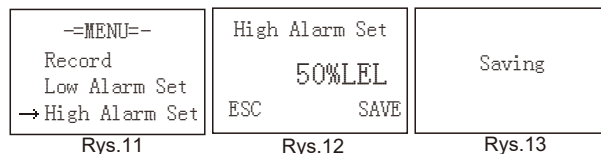
Rys.9

Rys.10

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.








Rys.11

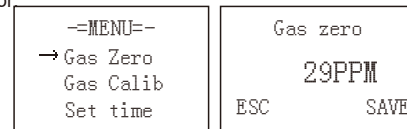
Rys.12

Rys.13

4.Zero function settings:

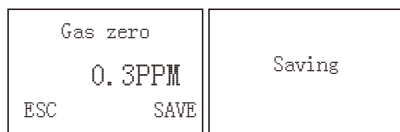
Press the  button in the menu interface, the interface shown in Figure 14: press the button  to enter the zero setting page, as shown in Figure 15: press the  button to get the zero drift, as shown in Figure 16: the device directly into the menu settings page, press the button  to save the drift value, 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



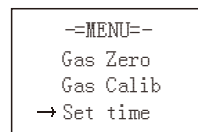
Rys.14

Rys.15

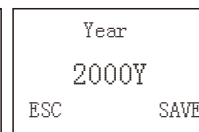


Rys.16

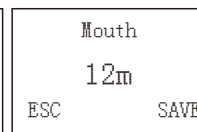
Rys.17



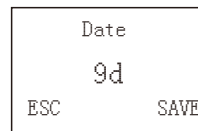
Rys.19



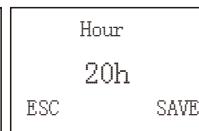
Rys.20



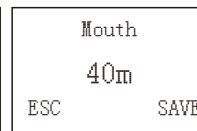
Rys.21



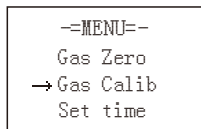
Rys.22



Rys.23



Rys.24



Rys.19

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, press 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.

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 circuit	Contact to your seller
No response to gas detected	no zero calibration	calibrate point zero
	Failure in electrical circuit	Contact to your seller
Inaccurate indication	Delayed sensor operation	Contact to your 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 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
CH ₄	0-100%LEL	20%LEL	50%LEL
C ₃ H ₈	0-100%LEL	20%LEL	50%LEL
H ₂	0-100%LEL	20%LEL	50%LEL
H ₂	0-1000ppm	35ppm	250 ppm
H ₂ S	0-100ppm	10ppm	15ppm
H ₂ S	0-100ppm	10ppm	20ppm
CO	0-1000ppm	35ppm	200ppm
CO	0-1000ppm	30ppm	60ppm
C ₂ H ₄ O	0-20ppm	10ppm	15ppm
C ₂ H ₄	0-100%LEL	20%LEL	50%LEL
C ₂ H ₄	0-20ppm	5ppm	10ppm
O ₂	0-30%vol	19.5%vol	23.5%vol
C ₂ H ₅ OH	0-100%LEL	20%LEL	50%LEL
NH ₃	0-100ppm	25ppm	50ppm
CL ₂	0-20ppm	5ppm	10ppm
O ₃	0-20ppm	5ppm	10ppm
O ₃	0-10ppm	2ppm	5ppm
SO ₂	0-20ppm	2ppm	5ppm
SO ₂	0-100ppm	2ppm	5ppm
PH ₃	0-20ppm	0.3ppm	5ppm
PH ₃	0-5ppm	0.3ppm	2ppm
CO ₂	0-5000ppm	1000ppm	2000ppm
CO ₂	0-50000ppm	1000ppm	2000ppm
NO	0-250ppm	20ppm	50ppm
NO ₂	0-20ppm	5ppm	10ppm
HCN	0-500ppm	10ppm	20ppm
HCN	0-50ppm	10ppm	20ppm
HCL	0-50ppm	10ppm	20ppm
CH ₂ O	0-10ppm	2ppm	5ppm
VOC	0-100ppm	20ppm	50ppm
C ₆ H ₆	0-100ppm	20ppm	50ppm