

Portable Gas Detection and Alarm Instrument BTYMQ-A115 operating instruction



**Henan Otywell Electronic
Technology Co., Ltd.**

ISO9001 Quality Management System Certified Enterprise

Thank you for choosing Henan Otywell Electronic Technology Co., Ltd.products. Before using this device, please read the instructions carefully and follow the provided steps. This ensures you can fully benefit from our services while preventing accidental damage or other issues.

Please keep this manual safe and accessible for future reference and assistance.

Copyright Statement

This manual is copyrighted by Henan Otywell Electronic Technology Co.,Ltd. No part of this manual may be reproduced, translated, stored in databases or retrieval systems, or disseminated through electronic means, photocopying, audio recording, or any other method without prior written permission.

Henan Otywell Electronic Technology Co., Ltd. adheres to the principle of technological advancement, continuously striving to enhance product performance. The company reserves the right to make any product improvements without prior notice.

If the user installs, repairs, or replaces components without following the instructions in this manual, the user shall be solely responsible for any resulting liabilities. The product and its color and style shall be consistent with the actual product purchased.

User service guide:

- 1.Before using this product, carefully check the completeness of the accessories, product certificate of conformity, and user warranty card according to the factory list. If any items are missing, contact the seller or manufacturer immediately.
- 2.For twelve months from the date of sale, if the product quality falls below the technical specifications while users comply with storage, transportation, and usage requirements, free repairs will be provided upon presentation of the warranty certificate.
- 3.For damages caused by non-compliance with operational regulations, malfunctions not serviced by our designated authorized technical service department, or product quality issues due to force majeure, we will charge for repairs.
- 4.When repairing the product, please show the product warranty card. If you cannot show the warranty card, the repair will be charged.
5. After product maintenance or repair, please present this manual. The technician will complete and sign the attached 'Maintenance and Repair Record.' Additionally, please sign the technician's record to confirm the maintenance details and provide feedback. For institutional users, please affix the official seal.
- 6.Should you have any questions or concerns regarding our products and services—including technical specifications, quality, installation, maintenance, service attitude, or pricing—we kindly ask you to contact us promptly. Your feedback will be addressed with due care.

catalogue

1. Overview	1
2.Key technical parameters	1
3.product mix	1
4.Features and Operations	2
5. Charging Function Description (Only for Charging Version)	8
6. Usage Precautions	8
7. Common Faults and Their Solutions	9
8. Storage	9
9. Accessories	10

1. Overview

The A115 Portable Gas Detection Alarm is an intrinsically safe device designed for continuous leakage gas concentration monitoring. Ideal for explosion-proof environments, underground pipelines, and mining operations, it ensures the safety of personnel and protects production equipment. Utilizing natural diffusion detection technology with high-performance gas sensors, this portable detector delivers exceptional sensitivity and repeatability. Its embedded microcomputer control system offers user-friendly operation, comprehensive functionality, and high reliability, featuring multiple adaptive capabilities. The intuitive dot-matrix LCD display provides clear visualization, while its compact and aesthetically designed housing ensures portability. Constructed from high-strength engineering plastic with anti-slip rubber composite, the device combines durability, comfort, and resistance to water, dust, and explosion hazards.

1.1 This product's design, manufacturing, and verification comply with the following national standards:

GB/T 3836.1—2021 Explosive Atmosphere Part 1: Equipment General Requirements

GB/T 3836.4—2021 Explosive Atmosphere Part 4: Equipment Protected by Intrinsic Safety Type i

GB 12358—2024 General Technical Requirements for Gas Detection and Alarm Instruments in Workplaces

2.Key technical parameters

Detection range: varies by gas type

Resolution: Different gas types have different resolutions

Applicable gases: combustible, toxic, oxygen

Detection principles: catalytic, infrared, electrochemical, PID, semiconductor

Alarm thresholds: Different gases require different alarm thresholds.

Display error: $\leq \pm 5\%$ FS

Response time: $T_{90} < 30s$ (flammable)

Display mode: LCD

Working environment: Temperature (-20 to 50) °C ; Humidity (20 to 95)%RH, no condensation

Operating voltage: DC3.7V (rechargeable) / DC3.6V (battery-powered)

Battery capacity: 2000mAh (rechargeable) / 5200mAh (battery)

Working hours: <24 hours continuously

Explosion-proof certificate number: CCRI 24.2663X

Explosion-proof rating: Ex ia II C T4 Ga/ Ex ia III C T₂₀₀130°C Da

Protection rating: IP68

3.product mix

3.1 Overall Structure Diagram



Front image Back image

Front image Back image

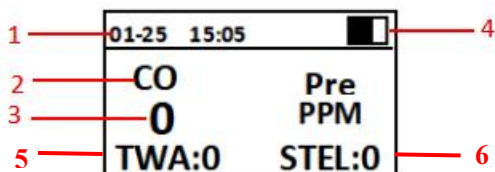
order number	name	order number	name
1	gas diffusion pore	5	alarm indicator
2	liquid crystal display	6	bell sound hole
3	key	7	Paste label
4	charging port	8	alligator clip

Note: This product employs natural diffusion detection. The calibration hood is exclusively for instrument calibration and must be removed during routine testing to prevent instrument failure and potential personal injury.

4.Features and Operations

4.1 Display interface description (using carbon monoxide as an example)

order number	Function Description
1	Date/time display
2	Types of gases to be detected
3	Current gas concentration
4	Battery level indicator
5	Time-Weighted Average
6	Short-Term Exposure Limit



4.2 Key Function Description

key	name	function
	Left button	Add or turn the page; long press to exit
	power switch	Confirm/Shift key; long press to power on/off
	right-hand button	Digital Page Turn

4.3 Power-on Instructions

When powered off, press and hold the power button to activate the alarm with vibration, then the preheating program will start automatically (Figure 1). After preheating, the system enters the self-check phase (Figure 2). Upon completion of self-check, the normal detection interface is displayed (Figure 3).



Figure 1



Figure 2

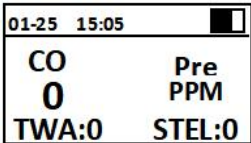


Figure 3

4.4 Power-off Instructions

To power off in test mode, hold the power button until the countdown ends. The device will shut down with a vibration after the screen turns off, as shown in Figure 4.

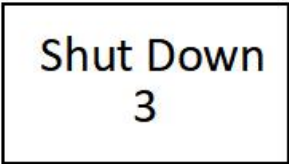


Figure 4

4.5 Menu Operation Instructions

See the table below for user menu function descriptions:

menu	function declaration
Alarm record	View the alarm time and status (overreported or underreported).
history	Record historical alarm information.
Low alarm Settings	Adjust the size of the first-level alarm point.
High alarm settings	Adjust the size of the secondary alarm point.
zero calibration	Calibration can be performed when zero display is inaccurate.
Calibration settings	Calibrate when the detected gas concentration value is inaccurate.
Language Settings	Adjustable between Chinese and English.
Backlight settings	Adjustable power consumption and energy-saving modes.
Password settings	Password can be set.
Time settings	Perform time calibration when the time display is inaccurate.
Exit menu	Exit the menu and return to the normal display interface.

The user menu functions are as follows:

Press the power button on the normal detection interface to enter the password verification screen (Figure 5). Use the left/right arrow keys to navigate and the power button to shift or confirm the password "1111" (Figure 6), then proceed to the user menu operation interface.



Figure 5



Figure 6

4.6 User Menu Operation Instructions

4.6.1 Alarm record query function:

After entering the menu, use the left/right arrow keys to move the cursor to 'Alarm Record' (Figure 7), then press the power button to access the record viewing interface.

- Use the left/right arrow keys to navigate. Hold the left arrow key to return to the user interface if no changes are made.
- Long press the power button to open the 'Save or Cancel' interface (Figure 8). Use the left/right arrow keys to select 'Cancel' or 'Save'. The power button is inactive on this page, and the system will automatically return to the user menu after the operation.

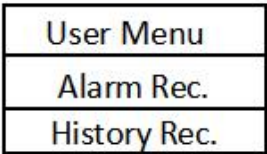


Figure 7



Figure 8

4.6.2 History feature settings:

After entering the menu, use the left/right arrow keys to move the cursor to the 'History' section (Figure 9), then press the power button to access the record viewing interface.

- Use the left/right arrow keys to flip pages, as shown in Figure 10. If no changes are made, long-press the left arrow key to return to the user interface.
- Press the power button on this interface to enter the 'Save or Cancel' dialog. Use the left/right arrow keys to select 'Cancel' or 'Save' (as shown in Figure 11). The power button is disabled on this page and will automatically return to the user menu after the operation.



Figure 9

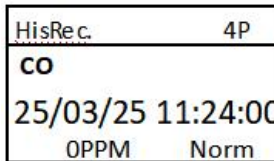


Figure 10



Figure 11

4.6.3 Low alarm settings:

After entering the menu, use the left/right arrow keys to move the cursor to the "Low alarm Settings" section (see Figure 12), then press the power button to access the settings interface.

- Press the left/right button to adjust the low alarm value (see Figure 13). If no modification is made, long-press the left button to return to the user interface.
- Press the power button on this interface to enter the 'Save or Cancel' dialog. Use the left/right arrow keys to select 'Cancel' or 'Save' (as shown in Figure 14). The power button is disabled on this page and will automatically return to the user menu after operation.

Warning: Do not modify alarm parameters unless required.



Figure 12

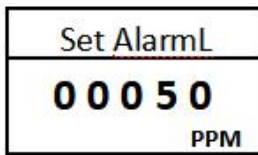


Figure 13



Figure 14

4.6.4 High alarm settings

After entering the menu, use the left/right arrow keys to move the cursor to the 'High alarm Settings' section (see Figure 15), then press the power button to access the settings interface.

- Press the left/right button to adjust the high alarm value (see Figure 16). If no modification is made, long-press the left button to return to the user interface.
- Press the power button on this interface to enter the 'Save or Cancel' dialog. Use the left/right arrow keys to select 'Cancel' or 'Save' (as shown in Figure 17). The power button is disabled on this page and will automatically return to the user menu after the operation.

Warning: Do not modify alarm parameters unless required.

Set AlarmL
Set AlarmH
Set Zero

Figure 15

Set AlarmH
00150
PPM

Figure 16

Save Data?
Esc Yes

Figure 17

4.6.5 Zero calibration settings:

After entering the menu, use the left/right arrow keys to move the cursor to 'Zero Point Calibration' (Figure 18), then press the power button to access the settings interface.

- This interface displays historical and current values, as shown in Figure 19. If no changes are made, long-press the left button to return to the user interface.
- After the data stabilizes on this interface, press the power button to enter the 'Save or Not' interface. Use the left/right arrow keys to select 'Cancel' or 'Save' (as shown in Figure 20). The system will then automatically return to the user menu interface.

Warning: This operation must be performed in clean air to avoid affecting the detector's accuracy.

Set AlarmH
Set Zero
Set Cal.

Figure 18

Set Zero
Old:0
Now:4005

Figure 19

Save Data?
Esc Yes

Figure 20

4.6.6 Calibration settings:

After entering the menu, use the left/right arrow keys to move the cursor to the Calibration Settings (Figure 21), then press the power button to access the settings interface.

- This interface displays the corresponding standard gas size. Press the left or right button to adjust the size (see Figure 22). If no changes are made, long-press the left button to return to the user interface.
- Press the power button on the standard gas value interface to access the data calibration display interface (Figure 23). Once the data stabilizes, press the power button again to enter the 'Save or Not' interface. Use the left/right arrow keys to select 'Cancel' or 'Save'. The system will automatically return to the user menu interface after the operation.

Warning: Do not handle by non-professionals. For inquiries, please contact the manufacturer via phone using the instructions.

Set Zero
Set Cal.
Language

Figure 21

Std.GasConc.
00500

Figure 22

Introduce Gas
2

Figure 23

4.6.7 Language settings:

After entering the menu, use the left/right arrow keys to move the cursor to Language Settings (Figure 24), then press the power button to access the settings interface.

- This interface displays the current and modified language. Press and hold the left button to return to the user menu.
- To change the language display, click the left/right button on this interface. Press the power button to enter the 'Save or Not' interface (Figure 26). Press the left/right button to select 'Cancel' or 'Save', then the system will automatically return to the user menu interface.

Set Cal.
Language
BackLight

Figure 24

language
Old:English
Now:Chinese

Figure 25

Save Data?
Esc Yes

Figure 26

4.6.8 Backlight settings:

After entering the menu, use the left/right arrow keys to move the cursor to the 'Backlight Settings' section (see Figure 27), then press the power button to access the settings interface.

- This interface displays the current and edit modes. Press and hold the left button to return to the user menu if you do not want to edit.
- To switch modes, press the left/right button on this interface. Press the power button to enter the 'Save or Not' interface (Figure 29). Press 'Cancel' or 'Save' with the left/right button to automatically return to the user menu interface.

Note: In power-saving mode, the backlight will automatically turn off after a short period. In energy-saving mode, the backlight remains off.

Language
BackLight
Password

Figure 27

Backlight
Old:PCM
Now:ECO Mode

Figure 28

Save Data?
Esc Yes

Figure 29

4.6.9 Password settings:

After entering the menu, use the left/right arrow keys to move the cursor to 'Password Settings' (see Figure 30), then press the power button to access the settings interface.

- Enter a new password here. Press and hold the left button to return to the user menu if you do not change it.
- After entering the new password by left/right-clicking on this interface, press the power button to enter the "Save or Not" interface. Press "Cancel" or "Save" by left/right-clicking to complete the operation. The system will automatically return to the user menu interface.



Figure 30



Figure 31



Figure 32

4.6.10 Time function settings:

After entering the menu, use the left/right arrow keys to move the cursor to the Time Settings (Figure 33), then press the power button to access the settings interface.

- This interface allows you to change the time. If you do not make changes, long-press the left button to return to the user menu.
- After modifying with left/right clicks on this interface, press the power button to enter the "Save or Not" interface. Press left/right clicks to "Cancel" or "Save", then the system will automatically return to the user menu interface.

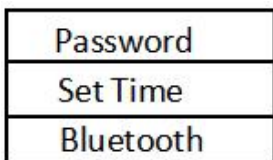


Figure 33



Figure 34

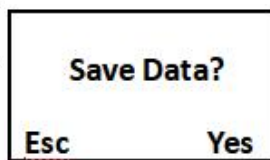


Figure 35

4.6.11 Exit menu settings:

After entering the menu, click the left or right button to move the cursor to this option, then press the power button to exit the user menu and return to the detection page.

5. Charging Function Description (Only for Charging Version)

When the device shows low battery or fails to power on due to low voltage, charge it immediately. The screen will display the charging status, and the battery icon will remain full until the charging is complete.

Warning: Do not charge the portable gas detector at the detection site to avoid fire or explosion caused by sparks from unplugging the charger. Avoid charging the detector while it is powered on to prevent reduced charging speed.

6. Usage Precautions

- 6.1 Protect the device from high-altitude drops or severe vibrations;
- 6.2 Please strictly follow the instructions for operation and use, otherwise it may result in inaccurate test results or damage to the device.
- 6.3 This product shall not be stored or used in environments containing corrosive gases (e.g., high concentrations of chlorine gas) or other harsh conditions. (Excluding chlorine gas detectors)
- 6.4 Do not use or store this device under extreme temperature/humidity conditions, electromagnetic fields, or intense sunlight.
- 6.5 If the surface of this device becomes dirty after prolonged use, gently wipe it with a clean soft cloth dampened with water. Avoid using corrosive solvents or hard objects, as they may scratch or damage the surface.

6.6 To ensure measurement accuracy, this device shall undergo periodic calibration, with the verification interval not exceeding one year.

6.7 Please remove the lithium battery and sensor from the discarded portable gas detector and deliver them to the designated location or return them to our company. Do not dispose of them in the trash.

6.8 For any application or usage issues beyond the scope of this manual, please contact the company for assistance.

6.9 In explosive gas environments, battery packs must not be disassembled, replaced, or charged. The use of peripheral plug-in devices without explosion-proof certification is prohibited. Sensor replacement is also not permitted.

6.10 Products with explosion-proof certification shall not be arbitrarily replaced or modified in components or structure.

7. Common Faults and Their Solutions

fault phenomenon	Possible cause of failure	process mode
Cannot boot	voltage below level	Charge your device promptly.
	system halted	Contact the dealer or manufacturer for repair.
	fault	Contact the dealer or manufacturer for repair.
No reaction to the detected gas	fault	Contact the dealer or manufacturer for repair.
Display is inaccurate	Sensor expired	Contact the dealer or manufacturer to replace the sensor.
	Long-term uncalibrated	Calibrate promptly.
Time display error	The battery is completely drained	Charge promptly and reset the time.
	strong electromagnetic interference	Reset time.
Zero calibration is unavailable	Excessive sensor drift	Calibrate or replace the sensor promptly.
The instrument displays "-0" on the normal test interface	sensor drift	Perform zero calibration.
When the instrument displays full scale on the normal detection interface	Sensor failure	Contact the dealer or manufacturer to replace the sensor.

8. Storage

Portable gas detectors should be stored in a ventilated room with an ambient temperature of -10°C to 55°C and relative humidity not exceeding 85%, and the air must be free from harmful gases or impurities that could corrode the detectors.

Portable gas detectors must pass factory inspection and be issued with a certificate of conformity and a factory inspection report before leaving the factory. If damage occurs during transportation, the manufacturer is responsible for replacement.

9. Accessories

The package includes: one packaging box, one portable gas detector, one charger (for charging only), one calibration cover, one instruction manual, and one warranty card.

Henan Otywell Electronic Technology Co., Ltd.

Address: Building 38, No.352 Lianhua Street, High-tech Zone,
Zhengzhou City, Henan Province

Phone: 400-026-0053

Website: <http://www.otywellsafety.com>

E-mail: well001@outlook.com