BATTERY POWERED CARBON MONOXIDE ALARM

JB-C888

1 MAIN FEATURES:

1. High accuracy and sensitivity
2. Good anti-jamming capability
3. Reliable stability and reproducibility
4. LCD display CO concentration (3 digitals)
5. Low quiescent current (4uA±2),energy-saving, long standby time
6. Three leds to indicate different status: power supply (green), alarm (red), fault (yellow)
7. Calibrating
8. Easy installation, portable,ideal for travelling
9. Test/alarm locking/Manual Reset
10. Memory Function
11. Low battery warning
12. Different alarm sound for different concentrations
13. Amplifying circuit and sensor fault signal warning
14. Cannot be fitted with battery missing
15. End of alarm life warning

This instruction leaflet contains important information on the correct installation and operation of your carbon monoxide alarm. Read this leaflet fully before attempting installation and retain for future reference.

2. SPECIFICATION

Power Source: 3PCS LR6 SIZE AA 1.5V
Sensor Type: Electrochemical
Type of Gas sensed: Carbon Monoxide
Alarm activation: 30 to 49 ppm(120 minutes)
50ppm to 99ppm (60 to 90 minutes)
100 ppm to 299ppm (10 to 40 minutes)
Above 300ppm (0 to 180 seconds)
Operation Temperature : -10℃ to 40℃
Ambient Humidity: 15% to 90%
Horn Level: 85 dB at 1 m (3.3 feet)
Product Weight:140g approx
Product Size:127mmx75mmx35mm
Product Life: 10 years

3. WHAT IS CARBON MONOXIDE

Carbon Monoxide (CO) is an insidious poison that is released when fuels are burnt. It is a colorless, odorless, tasteless gas and therefore very difficult to detect with the human senses. CO kills hundreds of people each year and injures many more. It binds to the hemoglobin in the blood and reduces the amount of oxygen being circulated in the body. In high concentrations, CO can kill in minutes. CO is produced by the incomplete combustion of fuels such as wood, charcoal, coal, heating oil, paraffin, petrol, natural gas, propane, butane etc.

Examples of CO sources:

Running engine in garage -Gas appliances
Oil and Gas furnaces -Portable generators
Wood stoves -Gas or kerosene heaters
Barbecues Clogged chimneys
Wood and gas fireplaces Heating boiler

4. SYMPTOMS OF CO POISONING

The following symptoms may be related to CO poisoning:

35 ppm	The maximum allowable concentration for continuous exposure for healthy adults in any 8 hour period.
200ppm	Slight headaches, fatigue, dizziness, nausea after 2-3 hours
400ppm	Frontal headaches within 1-2 hours, life threatening after 3 hours
800ppm	Dizziness, nausea and convulsions within 45 minutes. Unconsciousness within 2 hours, Death within 3 hours.
1600ppm	Headache, dizziness and nausea within 20 minutes. Death within 1 hour
6400ppm	Headache, dizziness and nausea within 1-2 minutes.

5. LOCATING THE CO ALARM

JB-C888 Carbon Monoxide alarm is designed to detect the toxic CO fumes that result from incomplete combustion, such as those emitted from appliances, furnaces, fireplace and auto exhaust. If your dwelling is on a single storey, for minimum protection you should fit an alarm in the bedrooms or in the hallway of sleeping areas. Place it as near to the sleeping areas as possible and ensure the alarm is audible when the bedrooms are occupied. If your dwelling is multi-storey, for minimum protection at least one alarm on each floor.

NOTE: For maximum protection an alarm should be fitted in or near every room that contains a fuel-burning appliance such as any gas fires, central heating boilers, room heaters, water heaters, cookers, grills, etc.

WARNING: This alarm will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.

A CARBON MONOXIDE ALARM DOES NOT FUNCTION AS A REPLACEMENT FOR A SMOKE OR GAS DETECTOR

6. POSITIONING THE CO ALARM

Carbon Monoxide has a similar density to warm air and, to ensure that the most effective use is made of the detector, it should be fitted at least 1.5 meters (5feet) above the floor level and at least 1.85 meters (6 feet) from the appliance.

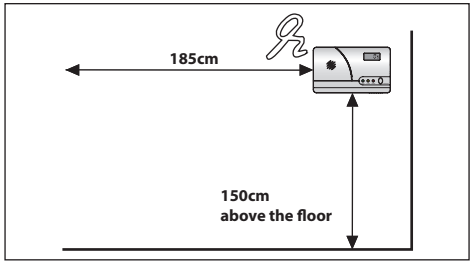


Fig 1

Areas to be avoided include the following:

Situations where the temperature may fall below -10℃ or rise above 40℃
In a damp or humid area
Any area where high levels of dusty, dirty or greasy emissions could contaminate or clog the sensor
Behind drapes or furniture
In the path of air discharged from a furnace / air conditioning vent or ceiling fan.
Outside the building
Directly above a sink or cooker

WARNING: This carbon monoxide alarm is designed for indoor use only. Do not expose to rain or moisture. It will not protect against the risk of carbon monoxide poisoning when the battery has drained. Do not open or tamper with the alarm as this could cause malfunction.

7. INSTALLING THE CO ALARM

This CO alarm is powered by battery and requires no additional wiring. It can either be installed on the wall using the fixings provided or on a tabletop.

7.1 Wall Mount Installation:

Having established the mounting location ensure that there is no electrical wiring or pipe work in the area adjacent to the mounting surface.
Mark the two mounting hole locations.
Drill holes in the positions marked.
Screw tight the screws into the drilled holes, and keep the steel screws out for 4mm.
Insert 3PCS LR6 SIZE AA1.5V batteries firmly into battery compartment on the rear of the detector.

7.2 Tabletop Installation:

Just place the CO alarm on the table, so that the users can see LEDS clearly.

8. OPERATING YOUR CO ALARM

8.1 Install Batteries

This alarm is powered by 3PCS LR6 SIZE AA1.5V battery, open the battery compartment on the rear of the detector and install the batteries.

NOTE POLARITY OF CONNECTIONS,MAKE SURE THAT THE PLASTIC PART(SEE FIG3-4) IS PRESSED DOWN,OTHERWISE YOU CANNOT CLOSE THE BATTERY COMPARTMENT.

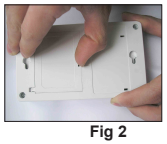


Fig 2

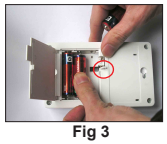


Fig 3

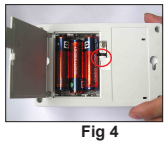


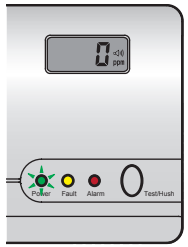
Fig 4

8.2 Normal Operation

When no carbon monoxide is present, the green LED flashes once EVERY 50 SECONDS, LCD displays “0 PPM” and “SPEAKER” symbol, to indicate your alarm is in normal working condition (see fig5).

8.3 Test your CO alarm

Press the TEST button, the unit will trigger an analog out put of high CO concentration that will be detected in seconds by the MCU, thus starting alarming together with red LED flashing, simultaneously the unit will display the simulated CO concentration with ”SPEAKER” symbol flashing (see fig6).



Flashes Every 50 Seconds

Fig 5

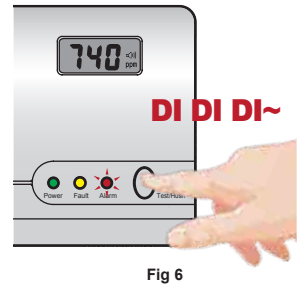


Fig 6

NOTE: Though this alarm can self-diagnose the amplifying circuit and sensor, it is recommended that you test your CO alarm once a month to ensure the alarm is working correctly.

8.4 Alarm locking

8.4.1 RE-Press the TEST button during the alarm condition, it will enter into alarm LOCKING status, then red LED and green LED will flash every 10seconds at the same time, the “SPEAKER” symbol on the LCD will disappear. The unit won’t respond to any action during the 2-minute LOCKING status. While if the CO concentration exceeds 300PPM in 3 minutes, the unit will start alarming (see fig7).

8.4.2 When the CO concentration goes down below 5PPM (including 5PPM), the unit will stop alarming.

8.5 LOCKING release

Press the TEST button, the unit will return to Normal Operation status(see fig5).

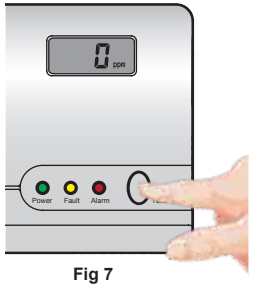


Fig 7

8.6 Alarm Condition

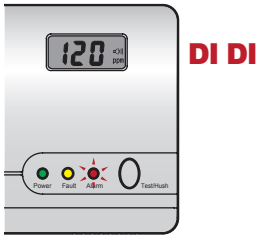
When the unit detects dangerous levels of CO, it will emit an alarm signal along with flashing of red LED(see fig6). This will continue as long as there is a dangerous level of CO concentration of equal or higher than 5 PPM. The unit will emit an alarm along with flashing of red LED; LCD will show the CO concentration and SPEAKER symbol. This will indicate that an alarm has occurred and it should be investigated.

CO-LEVEL (PPM)	RESPONSE TIME (MIN.)	ALARM SOUND
30ppm-49PPM	after 120	2 continuous chirp (with 1s frequency chirp)
50ppm-99ppm	60-90	3 continuous chirp (with 1s frequency chirp)
100ppm-299ppm	10-40	4 continuous chirp (with 1s frequency chirp)
300ppm or above	0-3	4 continuous chirp (with 0.5s frequency chirp)

NOTE: If you want to stop the alarm, please refer to 8.4

8.7 Memory Function

8.7.1 When no one home, the unit may detect CO and sound alarm. After the alarm stops when the CO condition returns to normal, the highest CO concentration ever presented will be recorded and shown on the LCD with the "CO figure" flickering once every 15 seconds together with 2 continous "DI" "DI" sound,red LED and "SPEAKER" symbol flashing(see fig 8).

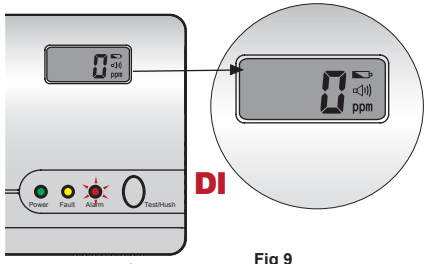


Flashes Every 15 Seconds Fig 8

8.7.2 Press the TEST button, the "CO figure" will be cleared and the unit returns to normal working condition（see fig 5）.

8.8 LOW BATTERY Signal

When the unit detects the battery voltage is low and needs replacing, the red LED will beep every 40 seconds along with one BEEP, LCD will show LOW VOLTAGE symbol(see fig9),The red LED will flash as usual,During low battery period, the unit can still alarm as usual.



Flashes Every 40 Seconds Fig 9

NOTE: The normal stand by time of battery is 5 years minimum. If there is problem with the battery or low battery signal warning keeps for over 30days, please replace the battery timely.

8.9 Manual Zero

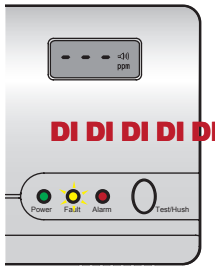
In normal operation of no CO gas present, when LCD does not show "0 PPM", you can press the TEST button down for 3 seconds until PPM character on LCD disappears, then release the TEST button till LCD show "0 PPM". Manual Zero CAN only be carried out under following two conditions:

A: The CO concentration on LCD is lower than 10 PPM

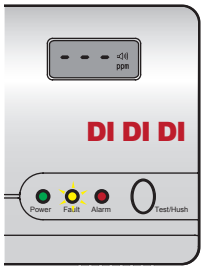
B: The first digital of LCD shows "-"

8.10 Fault signal warning

The unit will self-test the amplifying circuit and sensor every 10 seconds, when there is problem with the amplifying circuit or sensor, the unit will beep every 30 seconds along with flashing of yellow LED, LCD will show "---"(see fig10).



Flashes Every 30 Seconds
Fig10



Flashes Every 60 Seconds
Fig11

8.11 End of alarm life warning

When product is at the end of life, it gives three "DI" audible alarm every 60 seconds and with LED visual alarm (see fig11).

8.12 Calibrating

The Calibrating can only be carried out by professional organization, please don't calibrate by yourself.

The Calibrating is carried out on CO gas concentration of 400 PPM; this won't decrease the unit's accuracy. Every unit has been calibrated before delivery.

Press the TEST button down until all the 3 LEDS are on, then release the TEST button, the green and yellow LEDS will turn off, only red LED is still on, it indicates it enter into Calibrating mode. The unit will give 5 minutes for calibrating, if the unit cannot detect any change of CO concentration within 5 minutes, it will automatically exit Calibrating mode. After the calibrating on CO gas, the 3 LEDS will flash 3 times at same time to indicate the Calibrating is successful.

NOTE:

1. The unit has minimum CO concentration for calibrating (250 PPM minimum). If the calibrating is carried out on CO concentration lower than 250 PPM, the unit won't change previous calibrating numbers.
2. When the CO concentration on LCD is bigger than 30 PPM, the unit will stop entering into Calibrating mode to prevent mis-operation.
3. If user enter into the Calibrating mode by chance, just press TEST button to exit the Calibrating mode.

9. IN THE EVENT THE CO ALARM RAISES AN ALARM:

Immediately move to fresh air outdoor or open all doors / windows to ventilate the area and allow the carbon monoxide to disperse.

Where possible turn off fuel burning appliance.

Evacuate the building.

Do not re-enter the premises nor move away from the open door / window until emergency services responders have arrived, the premises have been aired out, and your alarm remains in its normal condition.

Seek medical help immediately for anyone suffering from the symptoms of headache, drowsiness, nausea, etc.

Do not use the appliances again until they have been checked by a qualified technician and the fault located and cleared.

10. MAINTENANCE YOUR CO ALARM

Your detector will alert you to potentially hazardous CO concentrations in your home when maintained properly. To maintain your alarm in proper working order, it is recommended that you:

• Test the alarm at least once per month by pressing the TEST button.

• Clean your CO alarm regularly to prevent dust build up. This can be done using a vacuum cleaner with the brush attachment once per month. Clean gently around the front grilled section and sides.

• Never use cleaning solutions on your alarm. Simply wipe with a damp cloth.

• Do not paint the alarm.

11. GAS SELECTIVITY

This alarm possesses conformity to selectivity which international standards require, and table 1 shows the selectivity to typical noise gases defined in UL2034 and EN50291.

Table 1. Gas selectivity

Test gas	Relative sensitivity (CO is 100)
CO	100
Hydrogen	40
Methane	0
Iso-Butane	0
Carbon dioxide	0
Carbon di-sulfate	0
Hydrogen sulfide	0
Nitrogen oxide	0
Nitrogen dioxide	Less than 5
Ammonia	0***
Ethyl acetate	0***
Di-chloromethane	0***
Heptane	0***
Toluene	0***
IPA	0***
Ethanol	Less than 2*
Hexa-methyl di-siloxan	0**

Exposure time :* :30 minutes ** :40 minutes ***: 2 hours

12. IMPORTANT SAFETY REQUIREMENTS

Installing a CO-detector is only the first step towards safer living conditions. Make sure that you and other members of your household are familiar with the cause and effect of carbon monoxide poisoning and how to operate a CO-detector:

Test your CO-detector once per month

Immediately replace low batteries

Only purchase approved combustion devices.

Install combustion devices in the correct way and strictly follow the instructions of the manufacturer

Have your installation performed by a professional

Have your installation checked by a qualified installer on a regular basis.

Clean your chimney and drainage once every year

Regularly check all combustion devices.

Verify if your equipment is free of corrosion and peelings.

Never use your barbecue indoors or in garages.

Ensure sufficient ventilation when using a fireplace or multi-burner.

Always pay attention to symptoms of carbon monoxide poisoning.

NOTES:

This unit can be only used at residential application, not suitable for usage on vehicles, boats, factory, shopping malls, etc.

This unit should avoid contact with organic solvents (including silicone and other adhesives), coatings, pharmaceutical, oil and high concentrations gas

This unit can not be used in environments containing corrosive gas, corrosive gas can damage the unit;

For the calibrating, first put the unit in clean atmosphere,then put the unit into 400ppm gas.

This unit can not be used in environments with strong wind movement.

Never block the unit air inlet; otherwise the sensitivity will beaffected.

This unit can not bear excessive shock or vibration.

It will take a long time for this unit to return to the initial state after used in high concentrations gas long time.

Never open the unit; the electrolyte leakage can cause damage.

This CO alarm is designed to only sense Carbon Monoxide from any source of combustion. It is NOT designed to detect smoke, fire and other gases.

WARNING: This device is designed to protect individuals from acute effects of carbon monoxide exposure.It may not fully safeguard individuals with specific medical conditions.If in doubt, consult a medical practitioner.

WARRANTY DISCLAIMERS:

We promise two years warranty on this CO alarm.

This warranty does not cover damage resulting from accident, misuse, disassembly, abuse or lack of reasonable care of the product, or applications not in accordance with the user manual. It does not cover events and conditions outside of our control, such as Acts of God (fire, severe weather etc). It does not apply to retail stores, service centers or any distributors or agents. We will not recognize any changes to this warranty by third parties. We shall not be liable for any incidental or consequential damages caused by the breach of any express or implied warranty. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose is limited in duration for 2 (two) years.

THIS PRODUCT CANNOT BE REPAIRED IF THE UNIT IS TAMPERED WITH IT WILL INVALIDATE THE GUARANTEE. IF THE UNIT IS FAULTY PLEASE RETURN IT TO YOUR ORIGINAL SUPPLIER WITH YOUR PROOF OF PURCHASE.

NOTE: In keeping with our policy of continuing improvement, we reserve the right to institute changes in design, material, dimensions, or specifications without prior notice and without incurring any obligation to make such changes and modifications on product previously or subsequently sold.

NINGBO HI-TECH PARK JABO ELECTRONICS CO., LTD
WWW.CHINA-JABO.COM
Building6,N0.799 Lingyun Road,
Ningbo Hi-Tech Park,Ningbo,China

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