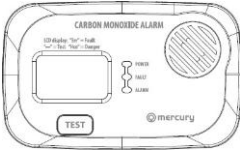


Carbon Monoxide Alarm

Order ref: 350.145UK

User Manual

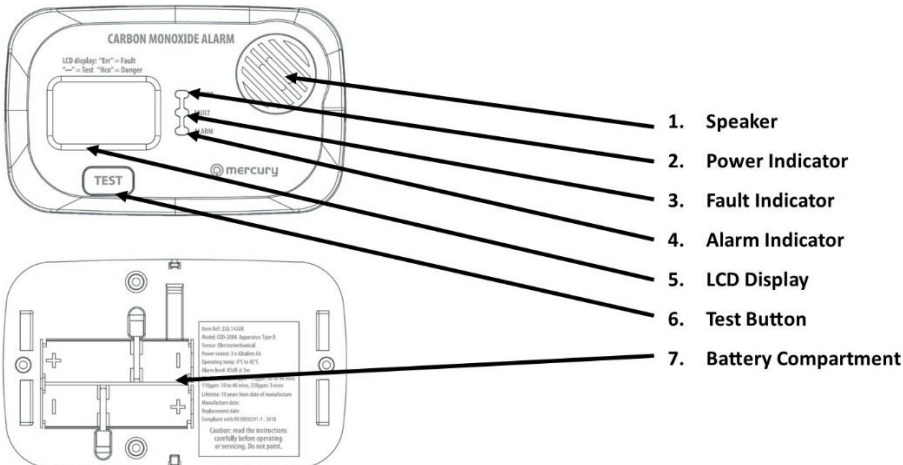


An electromechanical alarm that saves lives by detecting carbon monoxide gas and giving a loud acoustic warning if this poisonous gas is present. The alarm is battery powered and incorporates an LCD display screen which constantly shows the current CO levels. An essential life saver needed in every household with gas or solid fuel heating. Recommended positioning, in all rooms with boilers, stoves or open fires.

Product Specifications:

Apparatus	Type B
Batteries	2 x Alkaline AA (supplied)
Alarm level	85dB @ 3m
Sensor	Electromechanical
Operating temperature	0°C to 45°C
CO Alarm Level	27ppm - 55ppm: within 60 to 90 mins, 110ppm: within 10 to 40 mins, 330ppm: within 3 mins
Humidity	0 to 90% RH
Lifetime	10 years from date of manufacture
Dimensions	30 x 74 x 120mm
Weight	175g (incl. batteries)

Product layout:



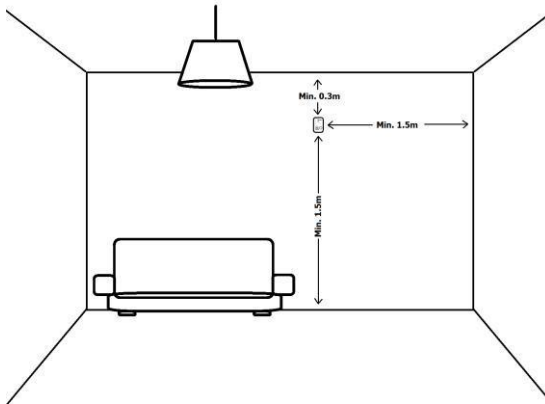
Start up:

Remove the alarm from the packaging and slide the back cover across to reveal the battery compartment. Insert the 2 x AA batteries (supplied) to the correct polarity ensuring the safety latches are pressed underneath. The alarm will beep once; the LCD display will read "EN" as below and all 3 LEDs will flash to indicate power up. When the LCD display on the front displays 000, the alarm is successfully powered and has started working.



Location:

For houses and buildings with multiple rooms, it is recommended to install one alarm per room. If not possible then at least one alarm per level. It is advised to locate the alarm near the potential source of CO, such as rooms with a boiler, fireplace or gas oven. For optimum detection, the alarm needs to be installed at least 1.5m above the ground, 0.3m below the ceiling and 1.5m from the corner of the room.



DO NOT locate alarm:

- Next to a window or a door.
- On the floor where the unit may get kicked or damaged.
- Behind fans, air-con units or any sort of ventilation.
- Confined spaces such as inside a cupboard.
- Behind furniture or curtains, alarms must not be obstructed.
- Cold or hot environments. (no less than 0°C or no more than 45°C)
- Dusty areas, this may block the sensor.
- Too close to an open flame, this can leave carbon deposits on the sensor, reduce its sensitivity and give false readings.
- Directly above a heater or cooking appliance.
- Where a lot of moisture is present, e.g. bathroom or kitchen above a sink or hob.
- Outdoors, this alarm is designed for indoor use only.

Installation:

After finding an appropriate location, the wall bracket can be screwed onto the wall using the supplied hardware. Alternatively, it can be stuck on using a self-adhesive pad or just stood on top of a unit or shelf.

To mount the bracket using hardware, use the mounting plate as a guide to mark the two holes. Drill these holes 6mmØ, 30mm deep. Insert the plugs into the hole and screw the bracket on, ensuring the raised side is facing outward.

Push the back of the alarm against the bracket and slide down until it clicks to lock in place. The battery compartment has latches that rise to prevent the alarm being installed without batteries, therefore please ensure the batteries are inserted before attempting to install the alarm.

Operation:

The LCD screen and LEDs on the front of the alarm give vital information of the working condition of the alarm and important ambient readings of the surroundings.

When the alarm is powered, the green power LED will flash once every 45 seconds to indicate it is working. When the working voltage drops below 3.5V, the alarm will beep when the power LED flashes. This indicates the battery power is insufficient; please replace the batteries as soon as possible. On the LCD display, the battery status is also shown constantly:



Indicates batteries are at full capacity and alarm is working with sufficient power.



Indicates batteries have sufficient capacity and alarm is working with sufficient power.

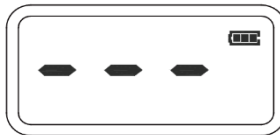


Indicates batteries capacity is getting low but alarm still has sufficient power.



Indicates batteries are critically low and alarm is working on the minimum required power and requires replacement batteries as soon as possible to keep the alarm functional.

It is recommended to manually perform testing once a week. To perform a manual test, simply press the test button for 1 second and the alarm will enter test mode. The Alarm LED will flash, and the alarm will sound 5 times. The LCD screen will read "---" to indicate the unit is in test mode.



All LEDs and the LCD display should resume back to normal after a few seconds.

The alarm will perform self-checking of the sensor every 2 minutes. Under normal conditions no LEDs will flash. If the sensor fails, the amber fault LED will flash once every 2 minutes together with two long beeps. Also, the LCD will display the error message as shown below, this indicates the alarm sensor or circuitry has failed. Please stop using the alarm immediately.



The error can be caused by either loose connections on the circuitry, short circuit or sensor contaminated by other strong chemical fumes. Please leave the alarm in clean open air for 24hr and see if the error disappears. If it remains, please replace the alarm immediately to remain protected from carbon monoxide.

The red alarm LED will only flash when the carbon monoxide count reaches an alert level and activates the alarm. Under normal conditions the carbon monoxide count should be below 25ppm. Therefore, when the count is below 25, the LCD will only display 0ppm.

To meet BS EN 50291-1:2018 standards, the alarm will activate within the following time limits when different critical CO level is met.

CO count (parts per million)	Alarm response time
27±3 ppm	120 mins +
55±5 ppm	Within 60 to 90 mins
110±10 ppm	Within 10 to 40 mins
330±30 ppm	Within 3 mins

When the alarm is activated the frequency of the sound will increase with the concentration, when the concentration of the carbon monoxide reaches above 550ppm the alarm will sound continuously with the LCD displaying "Hco" (high carbon monoxide) as below. This indicates a dangerously high concentration of carbon monoxide is present and all persons must evacuate the building **IMMEDIATELY**.



When the alarm is activated, it can be temporarily silenced by pressing the TEST button, the alarm LED will remain flashing to indicate the presence of high concentration of carbon monoxide. ONLY silence the alarm when you are 100% sure that the source of the carbon monoxide has been dealt with.

Maintenance:

To maintain the sensitivity of the alarm, dust needs to be removed from the surface on a regular basis. To dust use a slightly damp cloth, a brush or brush attachment of a vacuum cleaner. Do not use any solvent-based cleaners as the unit is sensitive to all active gas including chemicals. Always perform a manual test after cleaning to ensure the alarm is working normally. Also, the battery compartment needs to be checked on regular basis for signs of battery acid leakage. Remove batteries immediately if any signs of leakage occur. Clean the compartment with a clean tissue/cloth before replacing with new batteries.

End of Life:

For occupants' safety and to ensure the installed alarm is within its working life span, the unit has a built-in timer. When at the end of its 10-year life span, the out-of-date unit will display "End" on the LCD display as below and both the red and yellow LED's will flash twice at regular intervals. The alarm will also sound twice accordingly to the warning flash. When this happens, please replace the alarm immediately and dispose of the old unit according to local waste disposal guidelines.



Avoid below action to prevent the alarm from damage:

- Do not allow the alarm to meet any coloured or heavy smelling gas as this will contaminate the sensor and false readings will occur.
- Do not spray aerosols near the alarm, such as air freshener, insect killer, perfume, hair spray etc. as this will result in false readings or contamination of the sensor.
- Do not paint over the alarm, always remove it from the bracket before painting and wait for the paint to be fully dry before reinstalling the alarm.
- Avoid shock or impact on the alarm, if accidentally dropped check if the battery connection is still intact and perform a manual test to ensure the alarm is working correctly.
- Do not attempt to repair or modify the alarm. Any modification may cause the alarm to malfunction and fail to operate in a life-threatening situation; therefore, modification and repair is strictly restricted.

In the event of contamination, leave the alarm in fresh air for a minimum of 30 mins to up to a week to see if it recovers. If readings are still false replace the alarm immediately.

What is carbon monoxide?

Carbon monoxide (CO) is a highly poisonous gas that has no taste, colour or smell.

Carbon monoxide is a cumulative poison meaning long-term exposure to low levels may cause symptoms. This alarm is time-weighted – the higher the level of CO, the sooner it will alarm.

What produces CO in the home?

Many appliances can produce deadly CO levels if they are not in full working order. Items such as wood burning stoves, gas boilers, gas fires, gas hobs and ovens, oil and coal burning units, portable gas heaters, blocked flues and chimneys, car fumes from an integral garage and even barbeques. This alarm is not a substitute for proper maintenance of your appliances.

What should I do if the CO alarm sounds?

1. **IMMEDIATELY** open all doors & windows for ventilation & turn off all combustion appliances.
2. Evacuate everyone outdoors or to an open door or window for fresh air. Perform a head count to check all persons are accounted for.
3. **DO NOT** re-enter the premises or move away from the door/window until the alarm has stopped.
4. Call the UK Emergency Gas Services: 0800 111 999
5. Seek medical help immediately for those suffering with CO poisoning.
6. **DO NOT** use appliances again until they have been checked by qualified personnel and the fault has been clearly identified and rectified.

How to identify symptoms of carbon monoxide poisoning:

Carbon monoxide poisoning accounts for up to 50 deaths on average per year in the UK, long period exposure will lead to brain damage and can be lethal if ignored or unnoticed.

Therefore, it is very important to identify the symptoms at an early stage.

	Symptoms
Mild	Headache, nausea, fatigue (often misdiagnosed as flu or food poisoning)
Moderate	As above but more obvious, also tiredness, dizziness, lack of concentration, shortness of breath or chest pains
Severe	Severe headaches, convulsions, seizures, loss of consciousness, vital organ failure. Possible death within 2 - 3 hours

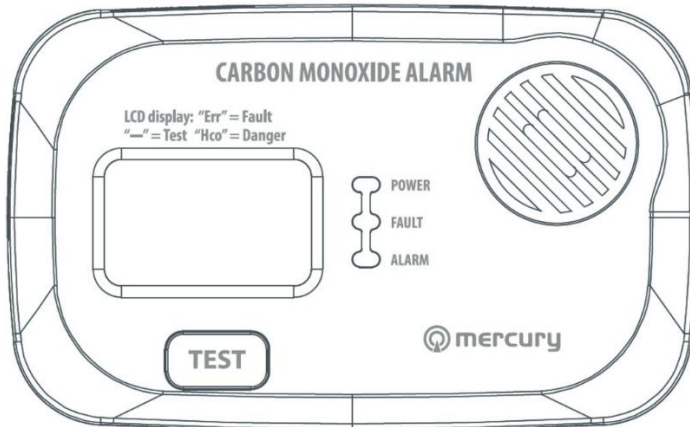
Carbon monoxide poisoning action and treatment:

In the event of carbon monoxide poisoning, switch off/put out the source of carbon monoxide immediately if known. Open all doors and windows to allow fresh air to flow in and evacuate all persons from room or building. Seek medical support immediately. Contact the emergency gas service and allow them to inspect the building to ensure it is safe before re-entering.

Mild carbon monoxide poisoning will clear on its own after the person is removed from the source of carbon monoxide. For moderate level poisoning seek medical advice as they will need to be treated with pure oxygen. Severe cases of poisoning will require immediate medical assistance so call 999 immediately.

Prevention of carbon monoxide poisoning:

- Do not use domestic fueled appliances in enclosed spaces.
- Do not use fuel generators in enclosed spaces.
- Paraffin/flueless heaters should not be used in a bedroom or an enclosed space.
- Ensure all flues, chimneys or other ventilation is clear from obstruction.
- Ventilate your home on a regular basis.
- Do not service, repair, install or modify appliances yourself. Always ensure any work is carried out by licensed, reputable, and qualified engineer only.
- Learn how to recognize CO poisoning symptoms. If mild symptoms reduce or go away when you are away from the room or building, then it is highly likely you are open to chronic carbon monoxide exposure. Seek help from a licensed engineer to perform checks on all fuel running appliances within the household.



This alarm conforms to BS EN 50291-1:2018



This product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

Errors and omissions excepted.

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