Wireless Interconnected Carbon Monoxide Alarm

User's Manual

ZHEJIANG HUAXIAO TECHNOLOGY CO., LTD.

V1.0.2

1 Information on Carbon Monoxide

What is carbon monoxide (CO)

Carbon monoxide is an odourless, tasteless, highly toxic and flammable gas produced by the incomplete combustion of carbon-based fuels. Prolonged exposure to a carbon monoxide-rich environment leads to serious tissue damage or even death.

What are the symptoms of carbon monoxide poisoning?

- Mild exposure (about 100-200 ppm): mild headache, nausea, vomiting, fatigue (often described as "flu-like" symptoms).
- Medium exposure (about 400 ppm): violent throbbing headache, drowsiness, confusion, fast heartbeat.
- Extreme exposure (about 800 ppm): unconsciousness, convulsions, cardiorespiratory failure, death.

Parts per Million (PPM)	Effects on Adults
100	Mild headache, nausea, vomiting, fatigue (often described as "flu-like" symptoms).
200	Dizziness and headache within 2-3 hours.
400	Nausea, frontal headache, drowsiness, confusion and rapid heart rate. Risk to life after over 3 hours of exposure.
800	Severe headaches, convulsions, vital organ failures. Death possible within 2-3 hours.

Where does carbon monoxide come from?

Carbon monoxide is caused by poor or incomplete combustion.

- A furnace, boiler, cooker, pellet stove, fireplace, wood stove, charcoal grill can be sources of carbon monoxide, especially if they are not working properly or if they are located in a poorly ventilated room.
- Vehicle exhaust gases in enclosed spaces (garage) can also become carbon monoxide hazards.
- With the use of paraffin heaters or charcoal grills/bbqs indoors or running a car in a garage, carbon monoxide levels can get so high that it can cause death.

How do I know if carbon monoxide is present?

Poisoning is measured in a range called parts per million (ppm). This CO Alarm monitors the level of carbon monoxide (CO) in the air. If the CO concentration is too high, the detector sounds a loud alarm.

When the alarm sounds, warn all household members, go outside immediately and call 112.

How do I protect myself and my family from carbon monoxide poisoning?

- Install one or more carbon monoxide detectors in your home.
- Have your home's heating system, boiler and other gas, oil or coal appliances checked every year by a competent person or company.
- Make sure that your combustion appliances and engines are well ventilated.
- Have your chimney checked and cleaned every year.
- Use gas appliances as recommended. Never use a gas cooker or oven to heat indoor areas.

What should I do if the carbon monoxide alarm goes off?

When the carbon monoxide concentration reaches a dangerous level, the carbon monoxide detector emits a loud alarm signal (85dB) and the Alarm LED flashes rapidly.

- Inform all household members of the danger.
- Go outside immediately and call 112.
- Do not re-enter the premises until the alarm has been stopped and the source of the leak has been dealt with by an expert.

⚠ CAUTION

Unlike a smoke detector, a carbon monoxide alarm does not easily give false alarms. If the CO alarm goes off, take it seriously and assume that there is an excessive concentration of CO somewhere.

2 Important Precautions and Warnings

This manual will help you to use the alarm correctly. Read this manual carefully before using the alarm. Keep this manual for future reference.

Instructions for use

WARNING

- Never ignore an alarm. Failure to respond may result in serious injury or death.
- Do not attempt to open or disassemble the detector. There is a risk of electric shock or malfunction if the detector is tampered with.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory, or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.

CAUTION

- Transport, use and store the detector under the permitted humidity and temperature conditions.
- Prevent liquids from splashing or dripping on the detector. Prevent liquid from entering the detector by ensuring that no objects containing liquid are placed on top of it.
- This CO Alarm is designed to detect only the presence of CO; it cannot detect smoke, gas, heat or flames.
- This device is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the detector by a person responsible for their safety.
- Vapours or gases, e.g. in cleaning liquids, polishes, paints, cooking processes, etc., can affect the detector's reliability in the short or long term.
- This device is designed to protect individuals from the acute effects of carbon monoxide exposure. It will not fully safeguard individuals with specific medical conditions. If in doubt, consult a medical practitioner.

Installation instructions

WARNING

If you do not install and operate this detector properly, it will not function properly and will not react adequately to carbon monoxide hazards. See Section7 for proper installation.

CAUTION

- Do not expose the detector to direct sunlight or heat sources.
- The detector must be installed by a competent person.

3 Product

3.1 Product information

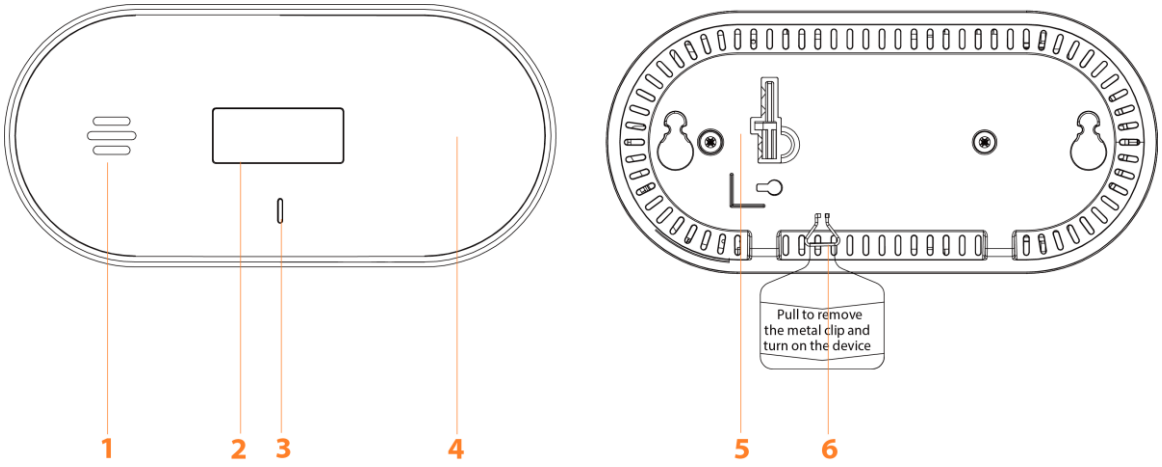
This Wireless Interconnected Carbon Monoxide Alarm (hereinafter referred to as the device) responds quickly with high sensitivity, stable performance and low false alarms when there is too much Carbon Monoxide in the air. This device is able to measure carbon monoxide levels as low as 30 ppm using the high quality sensor. The multi-functional LCD screen displays the temperature and humidity in standby mode, and the carbon monoxide concentration in alarm mode. Once the ambient carbon monoxide concentration reaches the alarm value, the device sounds a loud 85dB alarm and the LED flashes rapidly, alerting users to take immediate action.

With a built-in RF module, the device enables you to wirelessly connect up to 24 carbon monoxide alarms, constructing an interlinked network. Once one device triggers an alarm, the alarm signal will be pushed to every alarm in the interconnected network and they will raise the alarm in unison.

This device is certified in accordance with the latest European standard EN 50291-1:2018/AC:2021 for carbon monoxide detectors.

3.2 Product profile

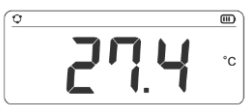
Figure 3-1 Construction



No.	Section	Description
1	Buzzer	Alarm sound: 85dB (A) at 3 meters.

No.	Section	Description
2	LCD display	The multi-functional LCD display changes according to the environmental conditions. ● Without the presence of CO: Displays the current temperature (within an accuracy of± 0.1°C), and humidity (within an accuracy of± 1.5%RH) alternately (est. 5 seconds). ● With the presence of CO: Displays the current CO concentration, temperature, and humidity alternately (est. 5 seconds). ● Alarm mode: Blue backlight will be lit, displaying the current CO concentration.
3	Indicator	A 3-color LED indicator flashes in red, green, or yellow, accompanied by a buzzer, to indicate the device's status. ● Standby: Flashes green once per minute. ● Alarm: Flashes red. ● Fault: Flashes yellow.
4	Test/Silence button	● For testing: Press the **Test/Silence** button, the blue backlight will be lit 5 seconds. Press the button again when the blue backlight glows, and the device will start test. The LCD display shows the current CO concentration, peak CO concentration, peak temperature, and peak humidity alternately (est. 5 seconds). ● For muting: Press the **Test/Silence** button and the device will temporarily stop the alarm sound (9 minutes). ⚠ The alarm will not silence at concentrations above 300 ppm.
5	Battery compartment	Built-in battery, not replaceable by user.
6	Metal clip	Remove the metal clip to activate device.

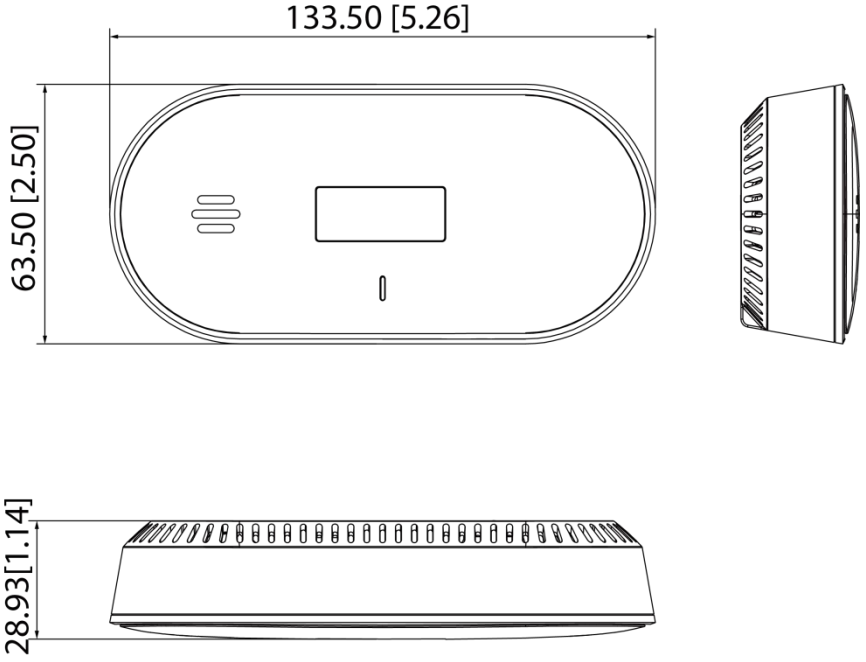
Figure 3-2 LCD screen

Mode	Display	Description
Power on	Blue backlight will be lit 3 seconds	The device is activated.
Standby		Displays current humidity levels and temperature alternately.

Mode	Display	Description
		The temperature level can be shown in Celsius (°C) or Fahrenheit (°F). To switch temperature readings between Fahrenheit or Celsius, press the **Test/Silence** button while showing the temperature level during the device test.
		
CO alarm		Carbon monoxide concentration in ppm.
		Peak CO concentration is recorded.
-		Battery power.

3.3 Dimensions

Figure 3-3 Dimensions (mm)



4 Technical Information

Parameter	Introduction
Detection Gas	Carbon monoxide (CO)
Alarm Triggered at the Specific CO Concentration within the Time Periods Listed	• 50 ppm: 60-90 min • 100 ppm: 10-40 min • 300 ppm: < 3 min
Power Source	3V CR17450A lithium battery (non-replaceable)
Guard Current	≤ 20 uA
Alarm Current	≤ 20 mA
Operating Temperature	-10 °C to +55 °C
Relative Humidity	≤ 95% RH (non-condensing)
Temperature Accuracy	±0.1°C typical
Humidity Accuracy	±1.5%RH typical
Operating Frequency	868MHz
Maximum Transmitted Power	14.6dBm
Maximum Number of Interconnected Units	24 pcs
Alarm Method	Visual and audible alarm
Alarm Volume	≥ 85 dB (A) @ 3 m
Muting	Support
Silence Duration	9 minutes
Dimensions	133.5 mm × 63.5 mm × 28.9 mm (5.26″ × 2.50″ × 1.14″)
Installation	Wall mount/Free standing
LED Light	• Red: Alarm • Yellow: Fault • Green: Standby (1x per minute)
Battery Life	10 years
Certificates	EN 50291-1:2018 BS EN 50291-1:2018 EN 62479:2010 EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1 EN 300 220-2 V3.1.1 EN 50270:2015

5 Interconnection

Prerequisite

- Remove the metal clip to activate the device.
- Make sure all carbon monoxide alarms are powered on to ensure a successful interconnection.

WARNING

Make sure that only 2 carbon monoxide alarms are powered on at a time to ensure successful interconnection. Otherwise, the interconnection will fail or device malfunction may occur.

How to interconnect

Step 1 Press the **Test/Silence** button on the device 1 continuously 4 times (the interval between each press is less than 1 second), this device emits 1 short quick beep and the red LED indicator flashes slowly, indicating the device 1 enters the interconnecting receiving mode.

To ensure that all carbon monoxide alarms enter the same interlinked network, make sure only one carbon monoxide alarm enters interconnecting mode at a time.

Step 2 Press the **Test/Silence** button on device 2 twice (the interval between each press is less than 1 second), this device emits 1 short quick beep and the red LED indicator starts to flash rapidly (about once every 0.25 second), indicating the device 2 enters the interconnecting transmission mode.

Step 3 If devices are interconnected successfully, red LED indicator of device 1 flashes continuously, and green LED indicator of device 2 flashes for 3 minutes until the device 1 stops the interconnecting mode. Blue backlight will be lit 3 seconds.

Device 1 will be in interconnecting mode for 3 minutes with red LED indicator flashing once every 0.5 seconds. During this period, you can pair several wireless interconnected carbon monoxide alarms one by one. If needed, you can manually press the **Test/Silence** button to help device 1 quit the interconnecting mode, the green LED indicator will go solid for 3 seconds, then device 1 will emit 1 short quick beep. Blue backlight will be lit 3 seconds, indicating the device has already quit the interconnecting mode and enters normal standby state. Once you press the button on device 1, the device 2 will follow device 1 to quit the interconnecting mode and enter the normal standby state.

Step 4 (Optional) Interconnect device 3.

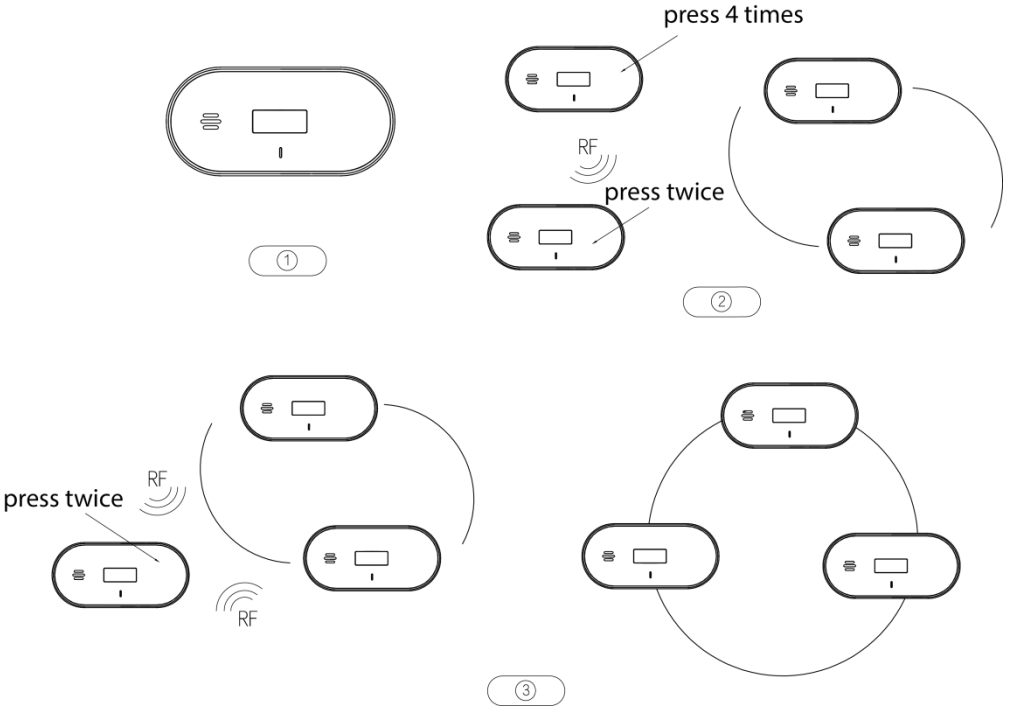
1) If device 3 is in the interconnecting receiving mode of device 1 within 3 minutes, then press the **Test/Silence** button twice on device 3 to enter the interconnecting transmission mode. If the interconnecting receiving mode of device 1 surpasses 3 minutes, then press **Test/Silence** button on either of the two previously interconnected devices 4 times to enter the interconnecting receiving mode, then press the **Test/Silence** button twice on device 3 to the join interconnected network.
2) If enters the interconnected network successfully, green LED indicator on device 3 flashes continuously until device 1 quit the interconnecting mode, or you can press the **Test/Silence** button on device 3 to force it enter the normal standby state immediately. After 3 minutes, all green LED indicators on devices go solid for 3 seconds and devices emit 1 short quick beep. Blue backlight will be lit 3 seconds. You can press the **Test/Silence** button on device 3 to force it enter the normal standby state immediately.

Step 5 If you want to connect more devices, please repeat **Step 4**.

Up to 24 wireless carbon monoxide alarms can be interconnected this way.

Step 6 Refer to "Chapter 6 Operation", test all wireless interconnected carbon monoxide alarms before installation to ensure they are interconnected well.

Figure 5-1 Interconnect device



How to disconnect

Step 1 Continuously press the **Test/Silence** button 4 times on the device that needs to unpair with other carbon monoxide alarms, and the device emits 1 short quick beep with red LED indicator flashing continuously.

Step 2 Press and hold the **Test/Silence** button until the green LED indicator goes solid, then release the button. If the disconnection finished, the green LED indicators on all carbon monoxide alarms in the interconnected network will go solid for 3

seconds and devices emit 1 short quick beep, then blue backlight will be lit 3 seconds.

Please disconnect all the wireless interconnected carbon monoxide alarms if you want to use them in another interconnected network.

6 Operation

After the interconnection, installation of the device or regular maintenance, a test must be carried out to confirm that the device is operating properly.

During the testing process, the defective device should be addressed according to "Frequently Asked Questions" and "Maintenance", and then tested again. If it fails to complete the test successfully, please send the device to the manufacturer for repair.

6.1 For a single carbon monoxide alarm

Test

Press the **Test/Silence** button, the LCD blue backlight will be lit 5 seconds. During backlight, press the **Test/Silence** button again, the device starts to test with the LCD display demonstrating the current CO concentration, peak CO concentration, peak temperature, and peak humidity alternately (est. 5 seconds).

Silence/Pause the alarm

When the carbon monoxide concentration reaches the predetermined threshold, the red LED indicator flashes with the buzzer beeping once per second. The LCD display demonstrates real-time concentration constantly. Press the **Test/Silence** button on the device to temporarily mute alarm sound and the device will be in the silence mode for 9 minutes.

6.2 For interconnected carbon monoxide alarms

Test

- Press and hold the **Test/Silence** button on any interconnected carbon monoxide alarm until other interconnected carbon monoxide alarms in the network start to beep.
  The initiating device will beep continuously with the red LED indicator flashing. After receiving a signal, other interconnected devices in the network start beeping with the indicator lights flashing red and green alternately.
- Release the **Test/Silence** button on initiating interconnected device, the initiating device stops flashing and beeping, and other interconnected devices stop testing soon.

Press and hold the **Test/Silence** button on disconnected device, there is no visual and audible alarm.

Silence/Pause the alarm

Once the initiating device triggers an alarm, the initiating device beeps once per second and after several seconds, other interconnected devices beep and flash quickly.

- Press the **Test/Silence** button on the initiating interconnected device.
  All interconnected devices are temporarily silenced.
- Press the **Test/Silence** button on any other interconnected device.
  The device that has been pressed is temporarily silenced, but the initiating interconnected device keeps beeping.

7 Device Installation

7.1 Package content

Check the contents of the package against the list below. If the device is damaged or a part is missing, please contact the supplier.

Table 7-1 Checklist

Name	Number
Carbon monoxide alarm	1
Drilling template	1
Set of screws/plugs	1
User Manual	1

7.2 Installation position

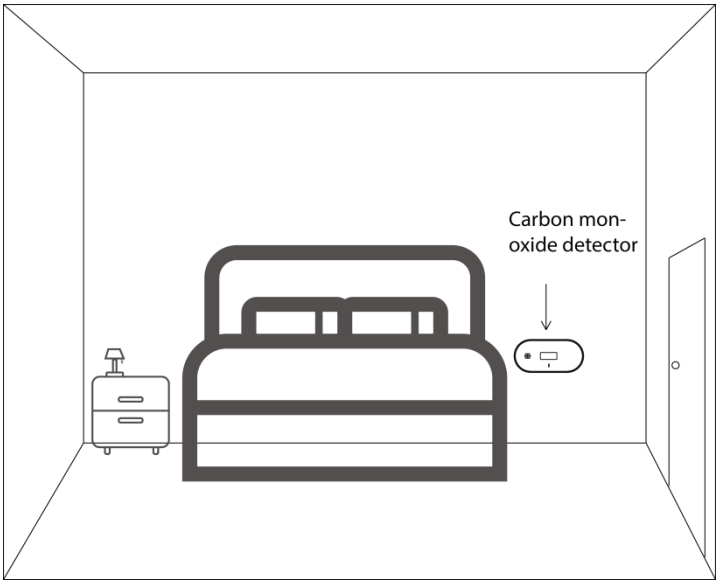
In which room should the device be installed?

Preferably install a carbon monoxide alarm in every room with a combustion appliance. For added safety, also install devices in living rooms and bedrooms.
Make sure you can always hear the device when it sounds the alarm.

Where in the room should the device be installed?

- Install in a bedroom **without a combustion device.**
  - Install the alarm at the occupants' breathing height.
  - Never install the alarm on or near the floor. Carbon monoxide mixes with air and will therefore rarely travel to the floor.

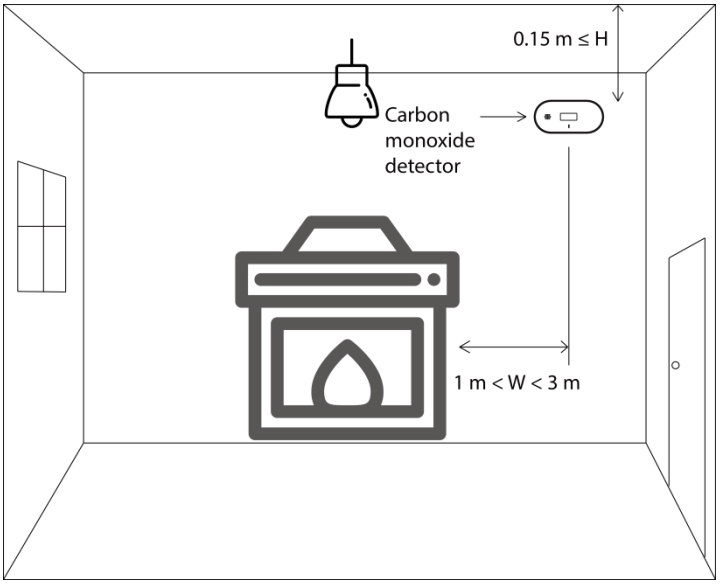
Figure 7-1 Installation in a bedroom without a fuel appliance



- Install in a living room **with a combustion device** (stove, boiler, fireplace, gas fire).

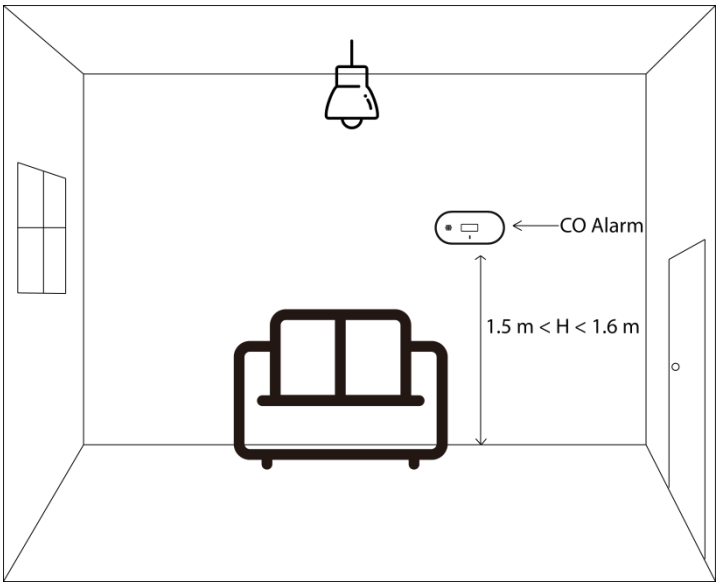
- Install the alarm above the combustion device. Carbon monoxide rises to the surface due to the hot gases from the combustion device.
- Install the alarm at least 15 cm from the ceiling.

Figure 7-2 Installation in a room with a fuel appliance



- Install in a living room **without a combustion device.**
  - Install the alarm on a wall about 1.5 meters to 1.6 meters above the floor.
  - Never install the alarm on or near the floor. Carbon monoxide mixes with air and will rarely travel to the floor.

Figure 7-3 Installation in a living room without a fuel appliance



Do not install a CO alarm here

- Dusty, dirty, greasy or damp areas.
- In poorly ventilated kitchens, garages, boiler rooms, confined spaces (e.g. in a cupboard or behind a curtain) where carbon monoxide or fumes circulate under normal working conditions.
- Near stoves, cookers and other hot and easily contaminated places.
- Against or near the floor.
- Directly above the source of heat and steam.

- In direct sunlight.
- Near obstructed areas (e.g. by furniture).
- Next to a door or window, exhaust fan, air vent or other similar ventilation openings.
- In rooms where the temperature may drop below -10 °C or rise above 55 °C.

7.3 First use

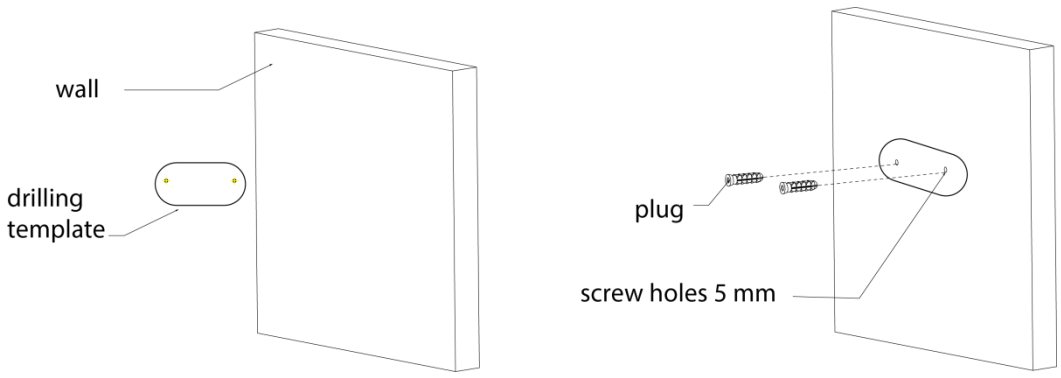
- Mounting on wall

Step 1: Select a suitable location for placing the drilling template.

Step 2: Mount the device with screws.

1) Drill screw holes (5 mm) according to the drilling template on the mounting surface and then insert the expansion bolt into the holes.

Figure 7-4 Installation (1)

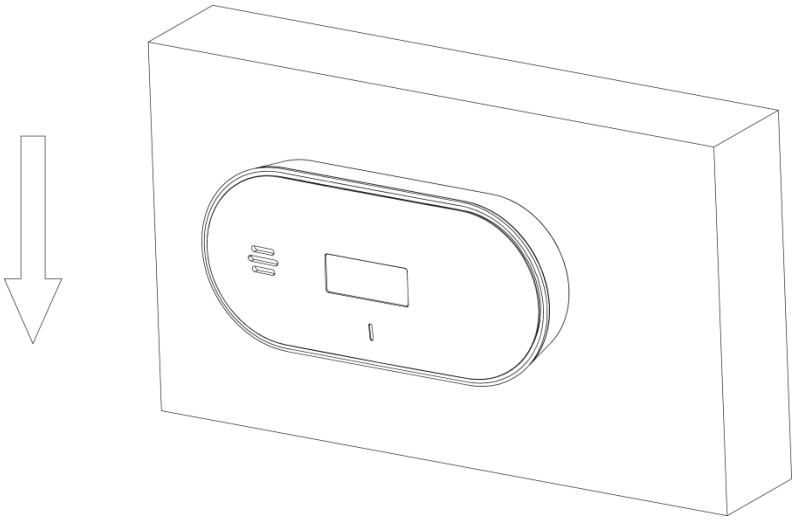


2) Pull to remove the metal clip.

Keep this metal clip for future use.

3) Attach the device to the mounting surface.

Figure 7-5 Installation (2)

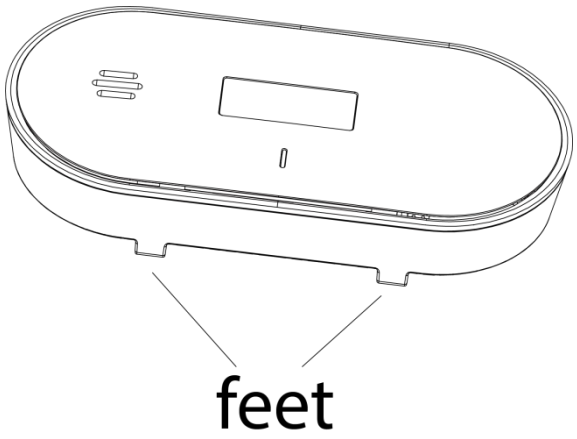


Step 3: After installation, test the device by pressing the **Test/Silence** button. Check that the LED lights, buzzer and LCD display are working properly as described in chapter 3.2.

- Placing on table

The base of the device has two feet built into the design, enabling it to stand freely on a stable and flat surface.

Figure 7-6 Installation (3)



8 Device Status

LCD display	LED status	Alarm sound	Unit status	Solutions
Blue backlight glows 3 seconds	2 cycles of 6 quick blinks, then stops with 1 red blink	2 cycles of 4 short quick beeps, then stops with 1 beep	Self-test	No
Current humidity and temperature alternately	1 green blinks/min	No	The detector switches on and works normally	No
Carbon monoxide concentration in ppm	1 red blinks/sec	1 beep/sec	A carbon monoxide leak has been discovered	Inform all household members, go outside immediately and call 112
	No	No	Peak volume measured	Reset peak volume. LCD screen with peak volume will turn off after pressing and holding the **Test/Silence** button during the self-test
Lb	1 yellow blinks/min	1 beep/min	Battery low	Replace the device immediately
Err	2 yellow blinks/min	1 beep/min	Failure	See chapter 10 Frequently Asked Questions

LCD display	LED status	Alarm sound	Unit status	Solutions
End	3 yellow blinks/min	3 beep/min	End of life	The maximum service life has been reached. Replace the device immediately  The replacement data can be found on the label.

PEAK VOLUME MEASUREMENT

This detector records the amount of carbon monoxide, temperature and humidity measured in the past. Press the **Test/Silence** button to see the peak volume, which remains on the LCD until the peak reading is reset.

CAUTION

If the blue backlight glows for a longer period of time, it will reduce the battery life. Please check the LCD screen of your detector regularly.

CAUTION

A peak reading on the LCD screen indicates that carbon monoxide has been measured in the past. Ventilate where possible and call a professional or installer immediately to have your appliances checked.

9 Maintenance

To keep your device in good working condition, please follow these requirements.

- Simulate alarm test: Test the device once a week.
  Under normal working conditions, press the **Test/Silence** button to ensure that the device can work normally. If there is a malfunction, please repair it in time.
- Clean the device at least once a year by cleaning the housing. Use a soft cloth or the soft brush of a hoover for this purpose. Avoid applying cleaning agents to the device to avoid possible contamination of the sensor.
- Do not paint the device. Paint will seal the vents and interfere with the sensor's ability to work normally.
- When the battery voltage is lower than a certain threshold, the indicator flashes yellow and the buzzer beeps once every minute until the battery is depleted. Replace the device immediately with an approved type or contact technical support for advice.

When the detector stops working properly, please contact your local dealer or retailer for help.

10 Frequently Asked Questions

Problem	Analysis	Solutions
The green Power LED does not blink once per minute	The device is not powered on	Remove the metal clip
	The LED bulb is broken	Contact the supplier for advice
Press the **Test/Silence** button; there is no alarm	Circuit breaker	Contact the supplier
No response to detected carbon monoxide	Circuit breaker	Contact the supplier
The device continuously emits a sharp, high-pitched sound	There is a large amount of volatile substances such as alcohol, perfume, petrol or paint present	Move the device to clean air (outside) and let it "operate" for 2 hours to allow the gases to escape from the device
	Circuit breaker	Contact the supplier

11 Discard

Waste electrical products must not be disposed of with other household waste. Please dispose of the electrical appliance in an environmentally-friendly manner and in strict accordance with local regulations on the disposal or recycling of electrical appliances.

WARNING

Do not burn or throw into fire.

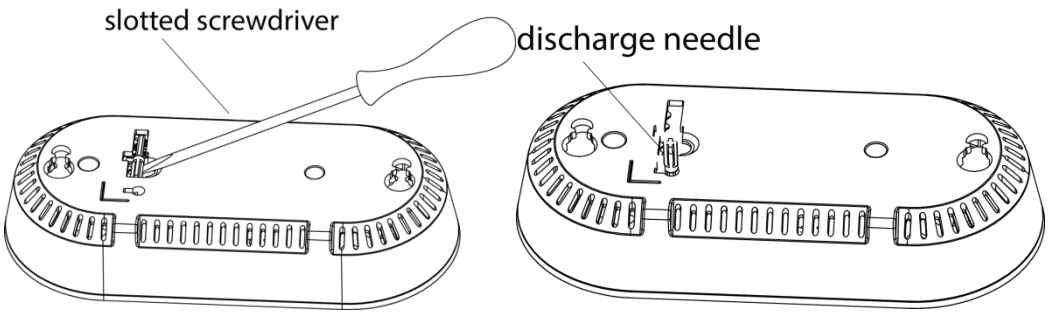
If the maximum service life (10 years) has been reached, please deactivate the device before the disposal.

Step 1: Insert the slotted screwdriver to take out discharge needle.

Step 2: Insert the discharge needle into the hole firmly and rotate it.

LCD screen stops displaying, indicating a successful discharge.

Figure 11-1 Discharge



12 Warranty and Contact

If you need after-sales service, please contact your local dealer or retailer.

Western EU Importer: Dahua Europe B.V.
Address: Houtsingel 19, 2719EA Zoetermeer, The Netherlands
Email address for service purposes: support@wisualarm.com

CEE & Nordic Importer: Dahua Technology Poland Sp. z o .o.
Address: ul. Salsy 2, 02-823 Warszawa
Email address for service purposes: support@wisualarm.com

UK Importer: Dahua Technology UK Ltd.
Address: 3rd Floor, Quantum House, 60 Norden Road, Maidenhead, SL6 4AY
Email address for service purposes: support@wisualarm.com

Germany Importer: Dahua Technology GmbH
Address: Niederkasseler Lohweg 185, 40547 Düsseldorf
Email address for service purpose: support@wisualarm.com

13 Documents

The full text of the EU declarations of conformity and EU declarations of performance is available at the following internet address:
https://www.wisualarm.com/en/ServiceSupport/DownloadCenter

For more information, please scan the QR code below or visit *https://www.wisualarm.com/en/Products/ALL*.