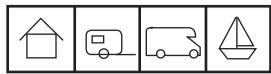## 1. Welcome

Thank you for purchasing this Carbon Monoxide (CO) alarm.

The symbols above mean that the alarm is suitable for use in domestic premises (including static caravan holiday homes), caravans, motor caravans and boats.

This manual contains important safety information about the installation and operation of the alarm. Read the manual carefully and keep it in a safe place for future reference.

Warnings

Installation of a CO alarm should not be used as a substitute for proper installation, use and maintenance of fuel burning appliances including appropriate ventilation and exhaust systems.

This CO alarm 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.

Long exposure to low levels (>10 ppm) of CO may cause chronic effects. If in doubt consult a medical practitioner.

2. Description

XC70 **XC100** **XC100D**

Honeywell offers three versions of its battery powered CO alarms, with different user interfaces and lifetime:

The basic model **XC70** uses indicator lights to visually signal the state of the unit and comes with 7 years life and warranty

XC100 and **XC100D** both show big alarm messages in the case of an alarm, and both come with 10 years life and warranty.

XC100D has an LCD screen to provide more information about rising CO levels and recorded CO peak levels.

In addition, all versions have an audible alarm and a **TEST/HUSH** button.

All Honeywell X-Series alarms can be wirelessly interconnected using an optional plug-in module. This means that if one X-Series CO or Fire Alarm triggers an alarm, all interconnected units will give an audible alarm as well. This is especially useful, when living in a large or multi-story dwelling. Some wireless module information is included in this manual for completeness.

3. About Carbon Monoxide (CO)

Carbon Monoxide (CO) is an invisible, odourless gas which is highly toxic. It is produced by the incomplete burning of fuels such as wood, charcoal, coal, heating oil, paraffin, petrol, natural gas, propane, butane etc. and by cigarette smoke. A dangerous level of CO can occur if an appliance is faulty or badly maintained, if a flue is blocked or if a room is inadequately ventilated.

The poisoning effect of breathing in CO depends on the concentration (described in parts per million, ppm) and how long you are exposed for.

Concentration	Signs and Symptoms
~ 100 ppm	Slight headache, flushing of skin (indefinite exposure)
200 – 300 ppm	Headache (5 – 6 hour exposure)
400 – 600 ppm	Severe headache, weakness, dizziness, nausea, vomiting (4 – 5 hour exposure)
1100 – 1500 ppm	Increased pulse and breathing rate, syncope (fainting), coma, intermittent seizures (4 – 5 hour exposure)
5000 – 10000 ppm	Weak pulse, depressed respiration / respiratory failure, death (1 – 2 minutes exposure)

Source: Health Protection Agency Compendium of Chemical Hazards, Carbon Monoxide, Version 3, 2011

The CO alarm will activate if it has detected a certain concentration for a given time, as described below:

50 ppm: Alarm between 60 and 90 minutes
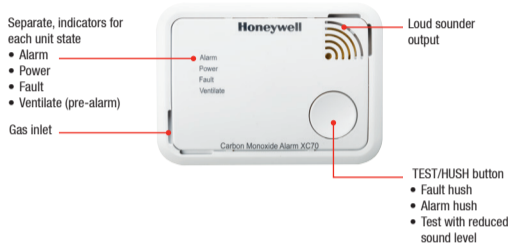
100 ppm: Alarm between 10 and 40 minutes

300 ppm: Alarm within 3 minutes

The CO alarm is set in accordance with the relevant European standard to provide alarms that are determined by the concentration and how long it has been present. This ensures that the alarm activates when dangerous levels of CO have built up over time and immediate action is required, and avoids false alarms from temporary low levels of CO (e.g. from cigarette smoke).
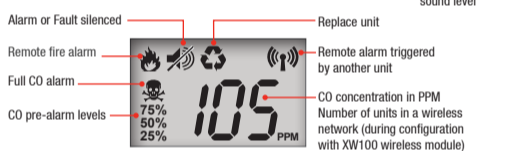
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4. CO Alarm Operation

XC70

Separate, indicators for each unit state
• Alarm
• Power
• Fault
• Ventilate (pre-alarm)

Gas inlet

Loud sounder output

TEST/HUSH button
• Fault hush
• Alarm hush
• Test with reduced sound level

XC100 / XC100D

Separate, indicators for each unit state
• Power
• Fault
• Ventilate (pre-alarm)

Gas inlet

Loud sounder output

Prominent action message:
• Appears only in alarm ("Hidden Text")

TEST/HUSH button
• Fault hush
• Alarm hush
• Test with reduced sound level

Display (XC100D only)

Alarm or Fault silenced

Remote fire alarm

Full CO alarm

CO pre-alarm levels

Replace unit

Remote alarm triggered by another unit

CO concentration in PPM

Number of units in a wireless network (during configuration with XW100 wireless module)

All alarms have four status indicator lights, an audible alarm and a **TEST/HUSH** button.

The green **POWER** light indicates that the unit is activated and working normally.

The red **ALARM** light indicates that a dangerous CO condition has been detected.

The blue **VENTILATE** light gives an early indication of a dangerous CO condition.

The yellow **FAULT** light indicates that the unit is not working properly.

The **TEST/HUSH** button is used to test the unit, or to mute an alarm or fault signal.

Normal operation

The green **POWER** light will flash once per minute, to indicate that your alarm is working. The screen of the XC100D will be blank.

Alarm

If a dangerous CO condition is detected the red **ALARM** light/ message will flash and the audible alarm will sound continuously. **XC100D** will display the current CO level and a skull symbol.

If the unit is in **ALARM** and the gas clears, the unit will go into Alarm Memory mode. Press the **TEST/HUSH** button to return to normal operation.

If your unit is in ALARM, keep calm, and carry out the following actions in the order given:

- Open all doors and windows to increase the rate of ventilation

- Stop using all fuel-burning appliances and turn them off where possible

- If the alarm continues, then evacuate the premises. Leave the doors and windows open, and only re-enter the building when the alarm has stopped

- Get medical help for anyone suffering the effects of Carbon Monoxide poisoning, such as headache or nausea, and advise that Carbon Monoxide inhalation is suspected

- Telephone the gas or other fuel supplier on their emergency number, so that the source of carbon monoxide emissions can be identified and corrected

- Do not use the fuel-burning appliances again until they have been checked and cleared for use by a competent person according to national regulations

Note: There may be another source of carbon monoxide emission apart from fuel-burning appliances, for example a large amount of tobacco smoke, town gas or emission from a smouldering fire.

If the unit is in **ALARM**, the audible alarm can be silenced for 5 minutes by pressing the **TEST/HUSH** button (the red light will continue to flash, XC100D will show the muted symbol). If a dangerous gas level is still present after 5 minutes, the audible alarm will sound again.

Note: The HUSH function only operates if the gas reading is less than 350 ppm and can only be operated once

Alarm memory

CO does not leave any detectable traces, so if an alarm happens while you are out, the memory function will keep the red light flashing till the button is pressed or 7 days have passed.

XC100D will also show the recorded peak concentration level for 10 seconds after pressing the button.

Event logger

Honeywell's CO alarms record a history of events, which can be downloaded by professionals. This provides a more in depth analysis of CO events such as detailed information on the CO concentration of the last 7 days, and weekly maximums for the whole operating life. Dates of alarm events are recorded.

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4. CO Alarm Operation continued

Status	Lights and Sound					Display (XC100D)	Meaning
	Alarm (Red)	Power (Green)	Fault (Yellow)	Ventilate (Blue)	Sound		
NORMAL OPERATION	○	☀	○	○	🔇		Normal operation No gas present
	1 flash once every minute						
ALARM	●	○	○	○	🔊*	105 PPM	Dangerous CO condition detected Current CO concentration
	Continuously 4 chirps and flashes After 60 minutes, pattern is repeated once every 30 seconds						
REMOTE CO or FIRE ALARM***	○	○	○	○	🔊		Dangerous CO condition detected by another interconnected CO alarm
	CO ALARM: Continuously 4 chirps						
	Fire ALARM: Continuously 3 chirps						Fire detected by an interconnected fire alarm
ALARM MEMORY	●	○	○	○	🔊	CO	Dangerous CO condition detected whilst user was absent. Currently, no dangerous CO level present
	1 chirp and flash once every minute						
PRE-ALARM**	○	○	○	●	🔊*	105 PPM	A dangerous CO condition is building up. A full CO alarm will be triggered later, if the CO level does not decrease Current CO concentration and percentage of full alarm level
	1 (2, or 3) chirps and flashes once every 30 seconds, increasing the longer CO is present						
FAULT	○	○	☀	○	🔊*	E01	The unit has reached its end of life and must be replaced
	1 chirp and flash once every minute						
FAULT***	○	○	☀	○	🔊*		The wireless module is not working correctly. Refer to the wireless module manual for further details
	3 chirps and flashes once every minute						

*unless muted by pressing the TEST/HUSH button
**only if activated during first time switch on
***only applicable when a wireless interconnection plug-in module is installed

GAS EMERGENCY SERVICE TELEPHONE NUMBER
0800 111 999
Contact numbers for **other fuel** appliances:
Oil users: Contact OFTEC on 0845 658 5080
Solid fuel users: Contact HETAS on 0800 600 000

For liquified petroleum gas (LPG),
Bulk and metered supplies; see telephone number on the bulk storage vessel or at the meter

Cylinder supplies; see gas supplier emergency contact details in the local telephone directory (The Calor Gas Emergency number is 08457 444999)

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Acts for and on behalf of Life Safety Distribution AG, Javastrasse 2, 8604 Hegnau, Switzerland by its Authorised Representative Honeywell Inc.

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Operating and Installation Instructions

Honeywell

X-Series Battery CO Alarms
XC70
XC100
XC100D

4. CO Alarm Operation continued

Ventilate - Pre-Alarm

Dangerous CO levels may be caused by faulty appliances, which start to produce more and more CO over time. Pre-alarms will give an early warning of such situations even if the alarm levels are not being reached. If these occur frequently it is recommended to call a technician for further investigations. The pre-alarm will start giving indications once 25% of the alarm level (time and concentration) has been reached. For example, if 50 ppm CO is present, the pre-alarm will start after 15-23 minutes instead of 60-90 minutes for a full alarm.

By default, this function is deactivated as it is not required to protect you from dangerous levels of CO. The installation section gives details of how to activate it. The pre-alarm is intended to help the knowledgeable end-user to get an early indication of malfunctioning appliances.

If the Pre-Alarm function is activated, and CO is detected, the blue ventilate light will flash with a short chirp 1, 2 or 3 times every 30 seconds when 25%, 50% or 75% of the alarm level respectively has been reached. **XC100D** will also indicate the percentage of the alarm level and current CO concentration. The audible alarm can be silenced by pressing the **TEST/HUSH** button (XC100D will show the muted symbol).

Fault – end of unit life

If the unit is in **FAULT** the **YELLOW** light will flash every minute with a short chirp. The CO alarm must not be used any more, and should be replaced. (The only exception is a wireless module fault, which is signalled with a triple chirp. In this case, refer to the wireless module manual for further details). The chirps can be silenced for 24 hours by pressing the **TEST/HUSH** button. The 24 hour period can be restarted by pressing the **TEST/HUSH** button twice (XC100D will show the muted symbol).

Note: The fault signal is caused by a low battery, an electronics failure or the end of the CO sensor life. The end-of-life signal comes from an inbuilt timer, and is given 10 years (XC100, XC100D models) or 7 years (XC70 model) after activation.

A replace by date is also printed on the side of the unit to facilitate an advance replacement before the end-of-life signal is given. This date includes a 6 months shelf life, i.e. this is the latest date the unit should be replaced. An end-of-life signal may be given earlier.

4. CO Alarm Operation continued

Low Level Monitoring Mode

Normally, the CO alarm only signals an Alarm condition after a gas concentration higher than 43 ppm has been present for a period of time. It can be temporarily set to a low level monitoring mode, to enable it to be used as a measuring device. Once this mode is activated, the alarm will signal the presence of a CO level higher than 10 ppm immediately.

To activate the low level monitoring mode, press and hold the test button for 18 seconds. (During this time, the low volume and high volume tests will be active). After 18 seconds you will see a green and a blue light flash and hear a short chirp and you can release the button. The low level monitoring mode is now active for 60 minutes, which is indicated by the flashing green light every 4 seconds.

CO concentrations higher than 10 ppm will be indicated by a flashing blue ventilate light. XC100D will also display the CO concentration level.

The low level monitoring mode will end automatically after 60 minutes or by pressing the button at any time.

Lights	Sound	Display*	Meaning
○ Alarm (red) ●/○ Power (green) ○ Fault (yellow) ○/● Ventilate (blue)	🔊	`15` PPM	Green power light flashing = Low level monitoring mode.
●○○○○●○○○●○○○●○○○●○○○ Green/blue light flashing every 4 seconds. One short chirp when CO rises above 10 ppm		Current CO concentration	Blue Ventilate light flashing = CO detected

*only available on XC100D

5. Precautions during use

The CO alarm does not require any maintenance other than to clean the outside case occasionally with a clean tissue. Ensure that the holes on the front of the unit are not blocked with dust or dirt. Some common household substances can affect the sensitivity of the CO alarm. Do not use household cleaners, polishes, perfumes or aerosol sprays on or close to the alarm. Avoid the use of nail polish remover, model paint or model glue close to the alarm.

17

6. Testing your alarm

Automatic self-test

Your CO alarm has an automatic self-test function for the electronics, which is performed every 60 minutes.

Monthly Test

The CO alarm should be tested once per month, to check that all visual and audible signals are working.

Press the test button for 1 second to activate a full test cycle showing all lights/messages (green, yellow, blue, red) and sound the audible output at a reduced level. If you wish, hold the test button for 10 seconds to test with the full 85dB sound level.

Lights	Sound	Display*	Meaning
● Alarm (red) ● Power (green) ● Fault (yellow) ● Ventilate (blue)	🔊	`888`	All light and sound signals are working
●○●○●○●○●○●○●○●○●○●○ Each light flashing sequentially with a chirp		All icons shown	

*only available on XC100D

Test/Measuring mode overview:

Press the button for	1 s	2 s	3 s	4 s	5 s	6 s	7 s	8 s	9 s	10s	11s	12s	13s	14s	15s	16s	17s	18+s
	Unit mode	Green Flash + chirp Yellow Flash + chirp Blue Flash + chirp		Reduced volume alarm pattern				Pause		High volume alarm pattern				Pause				Low level monitoring mode start indication: Green Flash + Blue Flash + chirp
		Done even if button released						Will go back to Normal mode as soon as button released										Button may be released

18

19

20

7. Specification

Gas detected	Carbon Monoxide
Sensor technology	Electrochemical Cell XC70: Ecosure XC100, XC100D: EcosureX
Third party approvals	EN50291-1:2010 EN50291-2:2010 BSI Kite marked KM 565387
Other compliances	RoHS, REACH
Self test	Every 60 minutes
Lifetime and warranty	XC70: 7 years XC100, XC100D: 10 years
Temperature	-10°C to +45°C
Humidity	25 - 95% RH (non-condensing)
IP rating	IP44
Power supply	Long life lithium battery, 3 V, sealed for the life of the product (no replacement necessary)
Visual indicators	Power: Green LED Alarm: Red LED – big message Fault: Yellow LED Ventilate: Blue LED
Audible	> 90 dB @ 1 m

Alarm levels	PPM	Full Alarm	Pre-Alarm	Low Level Monitoring Mode
	≥ 10	-	-	
	≥ 43	~ 75 minutes	~19 minutes	Immediately
	≥100	~25 minutes	~ 6 minutes	
	≥ 300	~90 seconds	~ 23 seconds	

Dimensions	100 mm x 72 mm x 36 mm
Weight	133 g
Installation	Free standing, wall mount, ceiling

8. Installation - Where to put the alarm

Ideally, an alarm should be fitted in every room containing a fuel-burning appliance. It is strongly recommended to also fit alarms in bedrooms, and in rooms where you spend a lot of time.

If the alarm is being fitted in the same room as a fuel-burning appliance:

- It should be located close to the ceiling and at a height greater than the height of any door or window
- A ceiling mounted alarm should be at least 300 mm from any wall, and a wall-mounted alarm should be at least 150 mm from the ceiling. Note: Ensure that you can access the tamper proof locking tab.
- The alarm should be at a horizontal distance of between 1 m and 3 m from the nearest edge of the potential source

If the alarm is being fitted in a room without a fuel-burning appliance it should be located relatively close to the breathing zone of the occupants.

For premises such as bedsits, caravans or boats where the accommodation is a single living space incorporating the sleeping area, the apparatus should be positioned as far from the cooking appliances as possible but near to where the person sleeps.

21

22

23

24

9. Installation - Where not to put the alarm

The alarm should not be installed:

- In any outside location or where the temperature may drop below -10°C or exceed 45°C
- In an enclosed space or where it can be obstructed
- Directly above a sink or in the immediate vicinity of a cooking appliance
- Next to a door or window, extractor fan or air vent
- Where dirt and dust may block the sensor
- In a damp or humid location

10. Installation - Mounting the alarm

Warning

The apparatus should be installed by a competent person.

Contents:

- CO alarm
- Wall mounting plate
- Fixing nail
- Instructions (this document)

Caution: The alarm must be connected to the wall mounting plate to switch it on.

The alarm can be free standing (e.g. placed on a shelf or table), or fixed to a wall or ceiling. There are two options for wall mounting, either hooked onto the nail provided, or permanently fixed using appropriate wall plugs and screws (not provided).

For quick wall mounting:

1. Place the wall mounting plate where you want to mount the alarm
2. With a pencil, mark the location of the central key hole
3. Tap in the nail (provided) at the marked location

For tamper proof wall or ceiling mounting:

1. Place the wall mounting plate where you want to mount the alarm
2. With a pencil, mark the location of the two screw holes
3. Drill holes of diameter 5 mm and insert appropriate wall plugs
4. Screw the mounting plate to the wall/ceiling

Discreet ON/OFF switch, activates when mounted to wall bracket

Hanger key-hole for non-permanent wall mounting

Wall mount screwholes

11. First time switch on

Note: The optional Pre-Alarm function can only be activated during the first 30 seconds after switching on the alarm.

The alarm is switched on by clipping it into place in the wall mounting plate.

Caution: Even if your alarm is free standing, you must attach the wall mounting plate.

1. Fit the alarm onto the wall mounting plate approximately 10 mm to the left of centre
2. Press firmly against the wall plate and slide the alarm to the right
3. Tamper proof locking tab will click into place
4. All lights will flash in sequence and the sounder will chirp to indicate that the alarm has been activated.
5. The green light will blink once per minute indicating that the alarm is operating
6. Test the alarm following the procedure for the Monthly Test.

25

26

27

28

12. Activate the Pre-Alarm function

To activate the Pre-Alarm function, which gives an early indication of a dangerous CO condition, press the **TEST/HUSH** button five times during the first 30 seconds after switching on the alarm. The power light will flash each time the **TEST/HUSH** button is pressed. If activation is successful, the blue **VENTILATE** light will flash five times in conjunction with short chirps.

Lights	Sound	Display*	Meaning
○ Alarm (red) ○ Power (green) ○ Fault (yellow) ● Ventilate (blue)	🔊		Pre-alarm function was activated sucessfully
●○●○●○●○○○○○○○○○○ 5 times within 4 seconds		Blank	

If activation is not successful, switch off the alarm and try again.

To de-activate the Pre-Alarm function at any time, switch off the alarm, and then switch it on again without pressing the **TEST/HUSH** button. To check if the Pre-Alarm function is activated, briefly press the **TEST/HUSH** button. If the Pre-Alarm is activated, the green **POWER** and the blue **VENTILATE** lights will flash once together. If the Pre-Alarm function is not activated, only the green **POWER** light will flash.

13. Switch off the Alarm

The alarm is switched off by removing it from the wall mounting plate. Use a suitable tool such as a small screwdriver to press on the tamper proof tab located at the top right edge of the alarm, and then slide the alarm to the left to remove it from the wall mounting plate.

14. Conformance

The CO Alarm is certified by BSI to the European standard EN 50291-1 "Electrical apparatus for the detection of carbon monoxide in domestic premises" and EN50291-2 "Electrical apparatus for continuous operation in a fixed installation in recreational vehicles and similar premises including recreational craft". It conforms to the Low Voltage Directive (LVD) and the Restriction of Hazardous Substances Directive (RoHS).

15. Troubleshooting and getting assistance

After you have carefully read all instructions and your alarm still fails to work, contact the nearest customer service centre listed in the "Contact Us" section. Customer service advisors may be able to resolve your problem quickly. Alternatively contact your local supplier.

If the product needs to be returned for repair or replacement, put it in a padded box with a letter describing the fault and postage paid. For battery powered devices, ensure that the alarm has been switched off.

A proof of purchase must be provided to claim repair under warranty.

16. End of life

When the unit has come to the end of its life, dispose of it in accordance with local regulations. It is classified as electronic waste and contains a battery and therefore should be disposed of separately from household waste.

17. Disclaimer

This Carbon Monoxide alarm is designed to alert you to a potentially dangerous build-up of Carbon Monoxide gas. It is not designed to remedy a Carbon Monoxide problem nor to locate a specific source of Carbon Monoxide. Honeywell shall not be liable to pay for any Carbon Monoxide investigation or service call carried out or arranged in response to an alarm.

18. Warranty

Honeywell warrants your new CO alarm for seven years (XC70 model) or ten years (XC100 and XC100D models) from the date of purchase by the end user or until the expiry date on the side of the unit, whichever occurs first, according to the specifications as set out in this instruction manual.

We will, at our discretion, repair or replace, with same or similar product, any part of the CO alarm which is found to be defective in either materials or workmanship within the warranty period.

We shall be under no obligation to repair or replace units which are found to be defective in any way due to unreasonable use or neglect, improper storage, used or maintained not in accordance with the user manual or if the product has been tampered with or found to have been dismantled.

This warranty is instead of and excludes all warranties implied by law, and to the extent permitted by law, our liability under the warranty is capped at the price of the product.

In no event are we liable for (a) any direct, indirect, incidental, consequential loss; (b) any loss arising from business interruption; (c) loss of profits; (d) loss of revenue; (e) loss of use of any property or capital; (f) loss of anticipated savings or loss of data.

29

30

31

32