



Care@Home™

Carbon Monoxide (CO) Detector

Model: ESM-230B

User Guide



December 2022



Table of Contents

1. Overview.....	3
2. Setting Up the CO Detector	4
2.1. Choosing a Location	4
2.2. Installing the CO Detector	4
3. Testing the CO Detector	4
4. Pairing the CO Detector	5
4.1. Pairing Prerequisites	5
4.2. Performing the Pairing Procedure	5
4.3. After Pairing	5
5. LED and Audible Indications	6
6. Action in the Event of an Alarm	7
7. Specifications.....	7
8. CO Detector IUNGO Transmitter Board Firmware Update.....	8

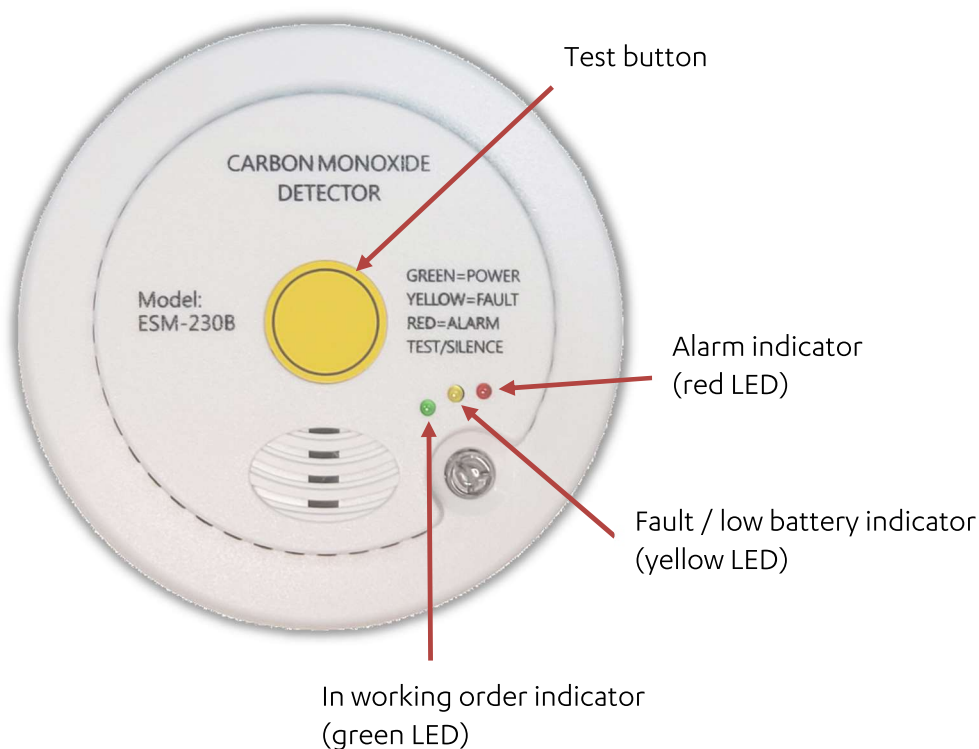
1. Overview

If the CO detector's electrochemical sensor detects carbon monoxide in the air, it sounds an intermittent 85 dB alarm.

The detector includes a wall mount and a 3.6V/4000mA internal lithium battery, providing 5 years of service. The lifespan of the sensor is also 5 years.

The microcontroller periodically checks the sensor. If it detects a fault, the yellow LED flashes.

The detector's LEDs and buttons are shown in the next figure.



2. Setting Up the CO Detector

2.1. Choosing a Location

Choose a location for the CO detector that meets the following requirements:

- On a wall
- Within 3 to 5 meters of the risk area
- Away from sources of direct heat (for example, ovens, stoves, and radiators)
- Away from lighting fixtures
- Away from furniture, partitions, or other objects that can block CO detection
- Away from excessive dust and dirt
- Away from drafts from doors, windows, or vents
- Where drafts will not direct CO concentrations away from the detector
- Does not have a lot of insects
- Not highly humid
- Where the temperature range is between +10°C and +50°C (50°F — 122°F)
- Where you can see the LEDs
- Where you can hear the alarm
- Where you can press the test button

2.2. Installing the CO Detector

1. Insert the battery.

After about 40 seconds, the green LED flashes. It continues to flash once per minute during correct functioning of the detector.

2. Use the wall mount to secure the CO detector in the chosen location.

3. Testing the CO Detector

Test the CO detector routinely by briefly pressing the test button. If the detector is functioning correctly, the alarm sounds and the 3 LEDs light up one after another.

4. Pairing the CO Detector

This section describes how to pair the CO detector with the C7000 control panel.

4.1. Pairing Prerequisites

Before performing the pairing procedure, verify the following prerequisites are met:

- The C7000 control panel is running the latest software and calibrated to a frequency of 869.225 MHz.
- The control panel is on.
- The CO detector is in range of the control panel.

4.2. Performing the Pairing Procedure

To pair the CO detector with the control panel:

1. On the control panel, press the **PAIRING** button for five seconds.
The control panel beeps and the ring around the **EMERGENCY CALL** button lights blue.
2. While the control panel is in pairing mode, do one of the following:
 - Insert batteries into the CO detector.
 - On the CO detector, press the **Test** button for at least five seconds.

4.3. After Pairing

After you have paired the CO detector with the C7000 control panel, all of the following should occur:

- The CO detector is shown correctly in the **Safety & SOS** list of your CareView control panel or CMS.
- The control panel plays a "Device added successfully" announcement.
- The CO detector sends a supervisory message to the control panel every hour.
- The CO detector is shown correctly (including the default description) in the Care@Home platform once the resident has been added.
- The CO detector successfully sends alerts.

5. LED and Audible Indications

The audible signals and LEDs indicate the situations detailed in the next table.

Green LED	Yellow LED	Red LED	85 dB Alarm	Buzzer	Beeper	Situation
Flashing once per minute						Detector in working order
		Flashing fast	Sounding intermittently			CO detected—but see note below
	Flashing once per minute			Sounding once per minute		Low battery
	Flashing twice per minute				Sounding twice per minute	Sensor fault
	Flashing 3 times per minute				Sounding 3 times per minute	End of sensor life
3 LEDs light up one after another			Sounding intermittently			Test button pressed briefly
All 3 LEDs flashing simultaneously for 2 seconds						Test button pressed for more than 5 seconds



NOTE: Electrochemical CO sensors are very fragile components. Various situations can alter the properties of the sensor and trigger an alarm without the presence of CO. These situations include: improper transportation; exposure to inappropriate temperature or humidity; the presence of gas from varnishes, solvents, aerosols, and so on; and installation in new construction or an inappropriate place.

6. Action in the Event of an Alarm

Prolonged inhalation of CO during sleep is a major health risk. CO inhalation causes deeper sleep, making it impossible to wake up.

When you hear an alarm:

1. Quickly open the windows and ventilate the room.
2. Close the main gas valve and call the gas company.
3. Turn off devices that use fire; for example, stoves and gas heaters.
4. Move all residents as far as possible from the alarm location.

After an alarm, the detector resets automatically.

7. Specifications

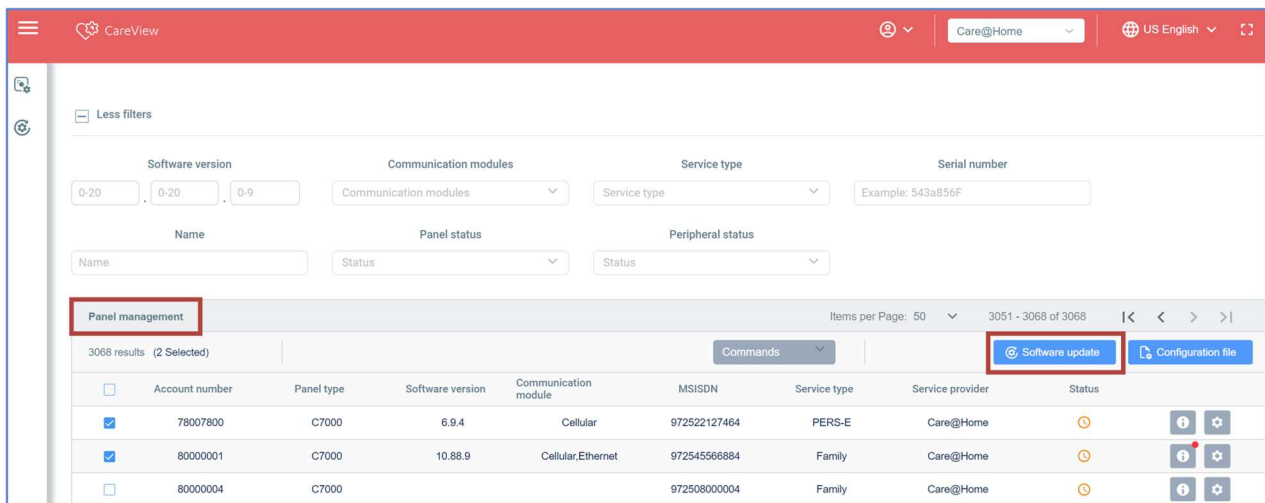
Item	Data
Part Number	ESM-230B
Product type	Carbon monoxide (CO) detector
Classification	Type B
Use	Indoor
Weight	175 g (6.2 oz.)
Dimensions (H x W x D)	100mm diameter x 40mm high (3.9 in. diameter x 1.6 in. high)
Power supply	3.6V/4000mA internal battery
Stabilization time after power on	<30 seconds
Sensor type	Electrochemical cell
Sensitivity to CO concentration in air	30 ppm - Alarm in 120 minutes 50 ppm - Alarm in 60 minutes 100 ppm - Alarm in 10 minutes 300 ppm - Alarm within 3 minutes
Operational lifespan	5 years under normal operating conditions
Housing and mount material	ABS
PCB mounted components	SMD
Operating temperature	+10°C to +50°C (50°F — 122°F)
Relative humidity:	10 to 95% (non-condensing)

Item	Data
Compliance	CE RoH ISO 9002 UNE Certification: EN-50291-1: 2018

8. CO Detector IUNGO Transmitter Board Firmware Update

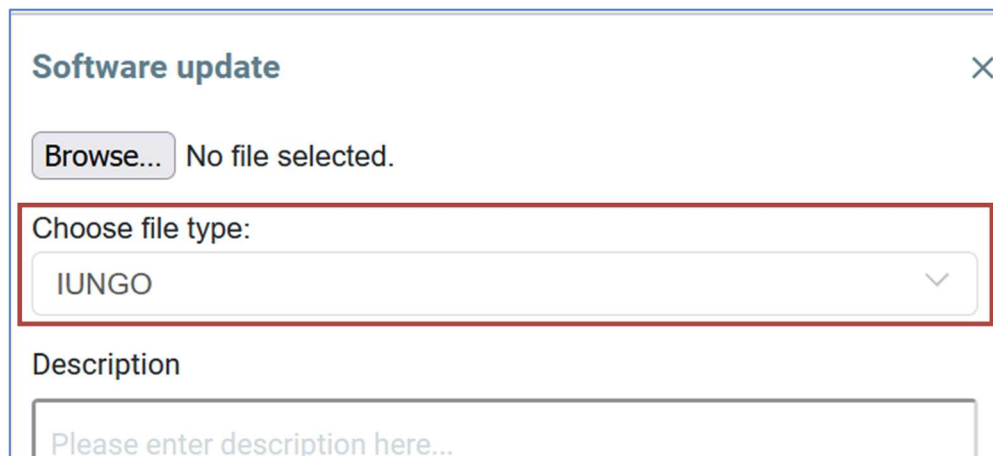
The CO detector includes an IUNGO transmitter board that connects it to the control panel. You can use CareView to update the firmware of the IUNGO transmitter board. The up-to-date firmware is downloaded to the control panel, which then uploads it to any connected IUNGO transmitter board.

1. In **Panel management** select the panels whose connected CO detectors you want to update.
2. Click **Software update**.



The screenshot shows the CareView interface with the 'Panel management' section active. A table displays 3068 results, with 2 selected. The table columns are: Account number, Panel type, Software version, Communication module, MSISDN, Service type, Service provider, and Status. Two rows are checked: one with account number 78007800 and software version 6.9.4, and another with account number 80000001 and software version 10.88.9. A 'Software update' button is highlighted in the top right of the table area.

3. In the **Choose file type** field, select **IUNGO** and continue with the usual software update procedure.



The screenshot shows the 'Software update' dialog box. It contains a 'Browse...' button, a 'Choose file type:' dropdown menu with 'IUNGO' selected, and a 'Description' field with the placeholder text 'Please enter description here...'.

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