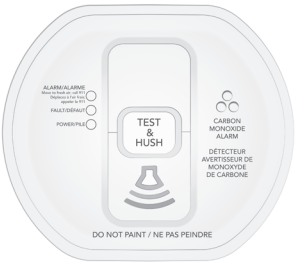
alula™ CO Alarm

INSTALL GUIDE

CO Alarm is a life-safety device that alarms when dangerous levels of carbon monoxide are detected.



Features

- UL2034 and CSA 6.19-01 listed
- Detects carbon monoxide
- 5 year warranty

Learn about the dangers of carbon monoxide and proper use of the CO Alarm by first reading sections 1 through 10.

Enroll by first placing the panel into wireless enrollment mode. To send the enrollment signal, press and hold the test button for several seconds. Note, when enrolling into a Honeywell® panel (RE215), the test button must be held for at least 10 seconds before the enrollment signal is sent.

General Enrollment Tips:

- The CO Alarm is not powered until the battery tabs are removed and it is installed on the mounting plate. If the test button is not working, check to ensure the CO Alarm is properly installed in the mounting plate.
- Use your hand or a cloth to muffle the sounder beeps when using the test button for enrollment.
- The test button must be held for a couple seconds after the CO Alarm beeps before it will send the enrollment signal.

RE115 Interlogix® Compatible Programming

- Recommended Sensor Group: 34

RE215 Honeywell® Compatible Programming

- Zone Type: Carbon Monoxide
- Loop Number: 1
- The automatic enrollment signal (triggered by holding the test button for at least 10 seconds) is only available 60 minutes after the device is first powered up. If the enrollment is not working, remove the batteries for at least 30 seconds, then re-install the batteries and try again.

RE215T 2GIG® Compatible Programming

- RF Sensor Type: Carbon Monoxide Alarm
- RF Equipment Code: [0860]
- RF Sensor Loop Number: 1

RE315 DSC® Compatible Programming

- Recommended Sensor Group: 81

Test the sensor by placing the panel into test mode and then holding the test button for several seconds. Use your panel's installation guide to verify proper system setup.

Choose a location for the Alarm to be installed after reviewing section 3. After choosing a location, refer to section 4 for details on installation.

ATTENTION! This manual should be read prior to use and retained for further information.

1. Read This First

- Replace the CO Alarm after approximately 10 years operation (see 'replace by' date on label).
- Do not install until all building work is completed to avoid contamination.
- This CO Alarm is intended for use in ordinary indoor locations of family units. It is not designed to measure compliance with OSHA commercial or industrial standards.
- This 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 not limited in use in typical single level and multilevel dwelling units or apartment buildings where adjacent apartments may have similar systems, as each unit has a unique ID.
- 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. Individuals with medical problems may consider warning devices which provide audible and visual signals for carbon monoxide concentrations below 30 ppm. If in doubt, consult a medical practitioner.

2. Carbon Monoxide - The Silent Killer

2.1 What is Carbon Monoxide?

Carbon monoxide (CO) is an invisible, odorless, tasteless, and extremely toxic gas. CO is absorbed by red blood cells in the lungs, in preference to oxygen, resulting in rapid damage to the heart and brain from oxygen starvation. CO poisoning can cause death or severe ill health.

High levels of CO in a home can be caused by:

- Incorrectly or poorly installed fuel-burning appliances
- Blocked or cracked chimneys/flues
- Blocked vents or draft-proofing which makes areas with fuel-burning appliances or fireplaces airtight
- Engines of cars, lawnmowers, etc. left running in confined spaces
- Portable paraffin or gas heaters in badly ventilated rooms

2.2 Symptoms of CO Poisoning

Many cases of CO poisoning indicate that while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the building or calling for assistance.

- **Mild Exposure:** Headache, running nose, sore eyes, "flu like symptoms"
- **Medium Exposure:** Dizziness, drowsiness, vomiting
- **Extreme Exposure:** Unconsciousness, brain damage, death

CO (PPM)	Symptoms
35	The maximum allowable concentration exposure in any 8 hour period according to OSHA
150	Slight headache after 1.5 hours
200	Slight headache, fatigue, dizziness, nausea after 2-3 hours
400	Frontal headaches within 1-2 hours, life threatening after 3 hours, also maximum parts per million in flue gas (on an air free basis) according to US Environmental Protection Agency.
800	Dizziness, nausea and convulsions within 45 minutes. Unconsciousness within 2 hours. Death within 2-3 hours.
1600	Headache, dizziness, and nausea within 20 minutes. Death within 1 hour.
3200	Headache, dizziness and nausea within 5-10 minutes. Death within 25-30 minutes.
6400	Headache, dizziness and nausea within 1-2 minutes. Death within 10-15 minutes.
12800	Death within 1-3 minutes

3. Where to Place CO Alarms

Per NFPA 720, Carbon Monoxide Alarms shall be installed as follows:

1. Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom.
2. On every occupiable level of a dwelling unit, including basements but excluding attics and crawl spaces.
3. Other locations where required by applicable laws, codes or standards. The equipment should be installed using wiring methods in accordance with the National Fire Protection Association's Standard 72, 720. (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269)

IMPORTANT! Specific requirements for CO Alarm installation vary from state to state and from region to region. Check with your local Fire Department for current requirements in your area.

3.1 Ideal Carbon Monoxide Alarm Locations

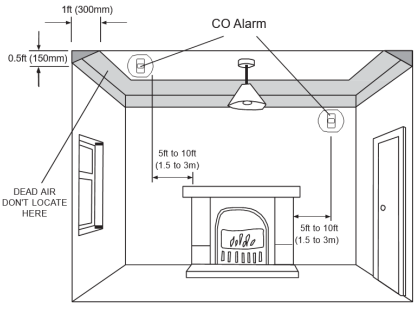
- Every room containing a fuel burning appliance
- Rooms where occupants spend a considerable amount of time
- Every Bedroom

If the number of carbon monoxide Alarms to be fitted is limited, the following locations should be considered when deciding where best to fit the Alarms:

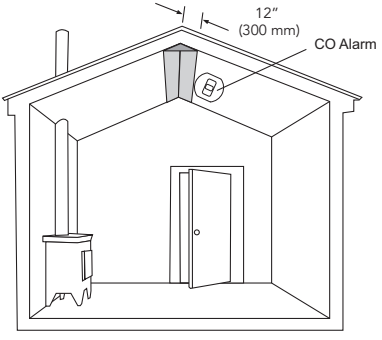
- Any room with an appliance where people sleep
- Any room containing a flueless or open-flued appliance
- Any room where the occupant(s) spend most of their time
- In a single room dwelling, the CO Alarm should be placed as far away from the cooking appliance as possible, but near to where the person sleeps
- If the appliance is in a room not normally used, such as a boiler room, the CO Alarm should be placed just outside the room so that the alarm will be heard more easily

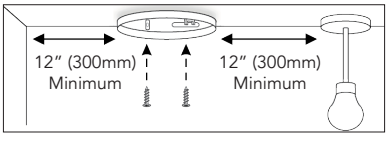
3.2 Locating in Rooms <u>WITH</u> a Fuel Burning Appliance

- ***If there is a partition in the room***, the CO Alarm should be located on the same side of the partition as the potential source.
- ***If it is mounted on a wall***, it should be located at a height greater than the height of any door or window but still be at least 6 inches from the ceiling.
- ***In rooms with sloped ceilings,*** the CO Alarm should be located at the high side of the room at least 12 inches from the peak.



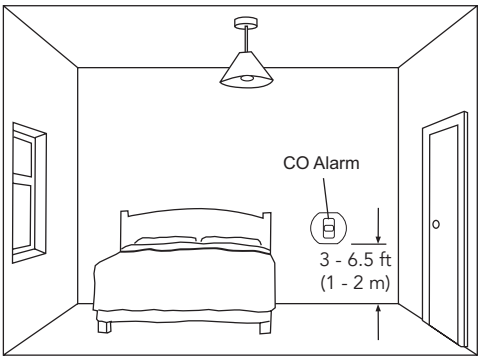
- The CO Alarm should be installed 5 to 10 feet horizontally from the potential CO source.
- ***If it is mounted on the ceiling*** it should be at least 12 inches from any wall or light fitting.





3.3 Locating in Rooms WITHOUT a Fuel Burning Appliance

Mount the CO Alarm relatively close to the **breathing zone** of the occupants. Whatever position is chosen make sure it is possible to view the three LED indicators.



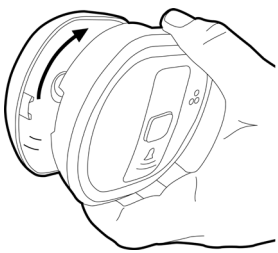
3.4 Where Carbon Monoxide Alarms SHOULD NOT be Located

- Within 3 feet of a cooking appliance
- In an enclosed space (e.g. in or below a cupboard)
- In a damp or humid area
- Directly above a sink or kitchen appliance
- Next to a door, window, air vent or anywhere that it would be affected by drafts
- Next to an extractor fan
- Over heat sources such as radiators or hot air vents
- Where it would be obstructed (e.g. by curtains or furniture)
- In an area where the temperature could drop below 40°F (4.4°C) or rise above 100°F (37.8°C)
- Where dirt or dust could block the sensor
- In areas where the CO Alarm may be exposed to water splashes, dripping or condensation (e.g. in a bathroom, above an electric kettle, etc.)
- Near paint, thinners, solvent fumes or air fresheners

4. Installation

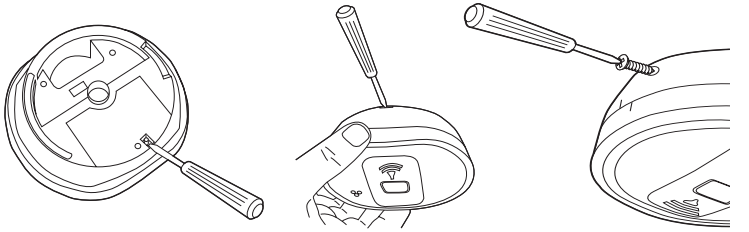
4.1 Installation Procedure

1. Select a location complying with the advice in Section 3.
2. Remove the mounting plate from the packaging/Alarm.
3. Place the mounting plate on the ceiling/wall exactly where you want to mount the Alarm. With a pencil, mark the location of the two screw holes.
4. Taking care to avoid any electrical wiring in the ceiling, drill holes using a 13/64" (5.0mm) drill bit through the center of the marked locations. Push the plastic screw anchors provided into the drilled holes. Screw the mounting plate to the ceiling/wall. Alternatively, if desired, the CO Alarm can also sit on a flat surface with mounting plate attached.
5. Ensure the RF module is fitted correctly into the base of the Alarm.
6. Remove the battery door, gently pull the battery tab, and replace the battery door.
7. Carefully line up the Alarm on the base, gently press home & twist on (this connects the batteries). The red, amber & green LEDs will immediately flash in sequence to show they are working.
8. After waiting at least 15 seconds, press the test button to ensure the alarm is working properly.



4.2 How to Tamper Proof the CO Alarm

To make the Alarm resistant to unauthorized removal, break off the small pillar on the battery door of the base as shown in the figure below. To remove the Alarm from the base use a small screwdriver to release the catch by pushing it upwards and then twist off the Alarm. If necessary it is possible to further secure the CO Alarm by using a No. 2 or No. 4 self tapping screw 6 to 8mm long to firmly lock the Alarm and its mounting plate together.



5. Testing and Maintenance

5.1 Testing

Frequent testing of the system is a requirement to ensure its continued and safe operation. To test the Alarm press and hold the test button for several seconds. The green LED will flash and the horn will ramp up to full sound to indicate the Alarm is operating correctly. The unit should be tested as follows:

- After the system is installed
- Once weekly thereafter
- After prolonged absence from the dwelling (e.g. after a holiday period)
- After repair or servicing of any of the systems elements or household electrical works

5.2 Maintenance

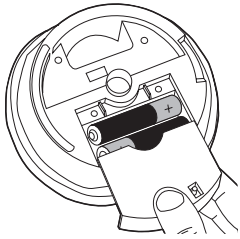
Clean the outside case by occasionally wiping with a clean damp cloth. Do not use any cleaning agents, bleaches, detergents or polishes, including those in aerosol cans. Avoid spraying air fresheners, hair spray, paint or other aerosols near the CO Alarm. Do not place air fresheners near the unit. Use the narrow nozzle of a vacuum cleaner to remove fluff and other contamination from the cover slots and gas entry holes. Remove the CO Alarm when decorating. Do not allow water or dust to contaminate the Alarm.

WARNING!

- Do not paint the CO Alarm
- Do not open or tamper with the CO Alarm. There are no user serviceable parts inside and this can damage the Alarm.

5.3 Battery Replacement

- Check the *Replace By* label on the side wall. If it has been exceeded, replace the entire unit. If the *Replace By* label on the side wall has not been exceeded, remove the Alarm from the mounting plate, remove the battery cover, and remove the old batteries.
- Use only Duracell® Alkaline MN2400BK AAA size batteries (available from local retailers). Use of a different battery may have detrimental effects on alarm operation. Insert the new batteries and replace the battery cover. Reinstall the Alarm back on its mounting plate. Button test the Alarm (after 15 seconds) to check the batteries are installed correctly and that they are not depleted.



WARNING! Constant exposures to high or low temperatures or high humidity may reduce battery life.

6. CO Alarm Behavior

6.1 Pre-Alarm (before horn sounds)

When the Alarm detects CO concentrations over 50 ppm, the red LED flashes in accordance with section 6.2. This helps locate CO leaks as the unit gives an indication straight away. Without this feature the CO level would need to be at 50 ppm CO for typically 90 minutes for an alarm sound to be given.

NOTE: The pre-alarm signal may be triggered by CO coming for example, from cooking with gas, from car engines, or from nearby barbecues. This is usually not a concern, unless the pre-alarm signal persists until the alarm sounds and the CO source is unknown.

NOTE: The CO Alarm may sound if cigarette smoke is blown into it, or aerosols are released nearby.

6.2 Alarm Response Time and Indicators

The table below shows how the CO Alarm reacts to different CO gas levels and exposure time. At higher CO levels, the alarm turns on sooner. The rate at which the red LED flashes indicates the level of CO. If your CO Alarm sounds, follow the instructions in Section 7. **NEVER IGNORE THE ALARM!**

CO Level	Red LED	Sounder
0 - 30 ppm	Off [1]	Off
> 50 ppm	1 flash every 3 seconds	On within 60-240 minutes
> 110 ppm	2 flashes every 3 seconds	On within 10-50 minutes
> 250 ppm	3 flashes every 3 seconds	On within 4-15 minutes

[1] Unless it has alarmed previously (see Section 6.3 Alarm Memory)

6.3 Alarm Memory

The CO Alarm memory is an important feature of the CO Alarm where even if the house is unoccupied during an alarm condition it warns the homeowner that the CO Alarm has previously detected CO gas and been in alarm. The memory feature has two operation modes:

- **24 Hour Memory Indicators:** For 24 hours after an alarm, the red LED will flash at different rates every 50 seconds depending on the level of CO detected.
- **Memory recall on demand:** To review the memory status after the initial 24 hours, press and hold the test button. The red LED will flash at different rates depending on the level of CO detected.

CO Level	Alarm Memory - Red LED Response	
	24 Hour Memory	Memory Recall (button press)
> 50 ppm	1 flash every minute	1 flash
> 110 ppm	2 flashes every minute	2 flashes
> 250 ppm	4 flashes every minute	4 flashes

To reset the alarm memory, hold down the test button until the red LED stops and the green LED starts flashing. Cover the horn with a cloth to muffle the alarm during this time. Please note that the CO Alarm memory will also be reset when the CO Alarm is powered off.

6.4 Silencing the CO Alarm (Hush)

When the Alarm sounds after sensing CO, pressing the test/hush button will immediately stop the horn (the red LED will continue to flash). If CO is still present, the red LED and the horn will turn on again after about 4 minutes. The unit can only be silenced once during a CO incident. ***At CO levels greater than 300 ppm, the unit cannot be silenced!***

7. What to Do When the Alarm Sounds

WARNING! Actuation of your Alarm indicates the presence of carbon monoxide (CO) which can KILL YOU. **NEVER IGNORE THE ALARM!**

1. Push the Test/Hush button.
2. Immediately evacuate the premises leaving the doors and windows open. Do a head count to check that all persons are accounted for.
3. Call your emergency services Fire Department or 911.
4. DO NOT re-enter the premises until the emergency services responders have arrived, the premises has been aired out and your Alarm remains in its normal condition.
5. After following steps 1-4, if your Alarm reactivates within a 24 hour period, repeat steps 1-4 and call a qualified appliance technician to investigate for sources of CO from fuel burning equipment and appliances, and inspect for proper operation of this equipment. If problems are identified during this inspection have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturers' instructions, or contact the manufacturer directly, for more information about CO safety and this equipment. Make sure that motor vehicles are not, and have not been, operating in an attached garage or adjacent to the residence.

NOTE: When ventilation is provided by leaving the window and doors open, the CO build up may have dissipated by the time help arrives and the Alarm may have stopped sounding. Although your problem may appear temporarily solved, it is crucial that the source of the CO is determined and appropriate repairs made.

8. Troubleshooting

8.1 Alarm does not work with the test button

- Check the Alarm is secured correctly on the mounting plate
- Wait 15 seconds after connecting the power before button testing
- Hold button down firmly for at least 5 seconds
- Replace the batteries

8.2 Alarm sounds for no apparent reason

Follow the instructions in section 6. If there are still problems:

- Ensure there are no fuel burning appliances in the vicinity which could be leaking CO gas (e.g. even from next door)
- Ensure there are no fumes in the area (e.g. Paint, thinners, hair spray, chemical cleaners, aerosol sprays, etc.)
- Ensure there is no outdoor source of CO in the vicinity such as a running engine, heavy traffic, or heavy air pollution
- Ensure there is no source of hydrogen such as batteries being charged
- Ensure there is not excessive smoke or fumes from smoking devices
- Press the test/hush button to silence the alarm

8.3 Trouble Conditions

The CO Alarm will monitor itself and give a status update every 50 seconds if there are any problems. The status of the Alarm can also be checked on demand by using the test button. The CO Alarm will beep and the amber LED will flash to indicate a fault condition as follows.

CO Alarm Fault Table		
Fault Condition	**Fault Indication**	**Action**
Low Battery	1 beep with 1 amber flash	Replace batteries (see §5.3)
Faulty Sensor	2 beeps with 2 amber flashes	Replace Alarm
End of Life	3 beeps with 3 amber flashes	Replace Alarm

NOTE: If the CO Alarm has detected a fault, pressing the test/hush button will silence the beeps for a 24 hour period. This is for your convenience and can only be done once.

9. Panel Response Details

Condition	Panel Response to Condition				
	Interlogix	Honeywell	2GIG	DSC	Alula Connect+™
Test Button	Alarm	Alarm	Alarm	Alarm	CO Test Indication (single Temporal 4 siren)
CO Alarm	Alarm	Alarm	Alarm	Alarm	Alarm
Removed From Base (Tamper)	Tamper	Tamper	Tamper	Tamper	Tamper
Low Battery	Low Battery	Low Battery	Low Battery	Low Battery	Low Battery
Fault[1]	Tamper	Fault	Tamper	Fault	Fault
End of Life[1]	Tamper	Fault	Tamper	Fault	Fault

[1] If a faulty sensor is detected, or it has reached the end of its service life, the CO Alarm will also stop sending supervision transmissions.

10. Specifications

Housing Dimensions Weight with Batteries Mounting Fastener	4.7 x 4.1 x 1.6 inches (12.0 x 10.4 x 4.1 cm) 6.53 ounces (185 grams) #6 screws and anchors (provided)
Operating Temperature Maximum Humidity	32°F to 104°F (0°C to 40°C) 15% to 95% non-condensing relative humidity
Replacement Batteries	2 x Alkaline AAA Batteries (Duracell MN2400BK)
Sensor Indications	Low Battery, Supervision, Removal Tamper, Fault, End of Life
Audible Alarm	85 dBA at 10 feet (3m) minimum
Compatible Panels	Simon XTi 600-1054-95R-12 (RE115), Honeywell Lynx Touch L5200 (RE215), 2GIG-GC3-345 (RE215T), DSC PC1832 (RE315), Connect+ RE6100 (RE615)
Frequencies	319.50 MHz (RE115) 345.00 MHz (RE215/215T) 433.92 MHz (RE315/RE615)
Certifications/Listings	FCC, IC, UL2034, CSA 6.19-01

Specifications subject to change without notice

FCC NOTICE

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.
(2) This device must accept any interference that may be received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Alula could void the user's authority to operate this equipment.

FCC ID: U5X-RE115, U5X-RE215, U5X-RE315

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IC NOTICE

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux cnr d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) L'appareil ne doit pas produire de brouillage, et
(2) L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC: 8310A-RE115, 8310A-RE215, 8310A-RE315

WARRANTY

Alula will replace non-portable products that are defective in their first five (5) years and all defective portable products in their first two (2) years.

Additional Information
https://alula.net/knowledge-base/co-info/

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