

1. INTRODUCTION

CQR's Carbon Monoxide Detector is effective for detecting a build-up of carbon monoxide, also known as CO gas, in your home or business. It is easy to install and allows connection to a fire control panel or security system.

- (1) Monitors for carbon monoxide in a continuous manner.
- (2) Gives a loud alarm (85 dB) when it detects a build-up of carbon monoxide.
- (3) Self-test its operative functions continuously
- (4) Offers a 2 year warranty for the carbon monoxide sensing unit.
- (5) Meets the requirements of EN50291 for sensitivity

2. POSSIBLE SYMPTOMS OF CARBON MONOXIDE POISONING

Carbon monoxide is colourless, odourless, tasteless, and very toxic. When inhaled, it produces an effect known as chemical asphyxiation. Injury is due to the combining of CO with the available hemoglobin in the blood, lowering the oxygen-carrying capacity of the blood. In the presence of CO gas, the body is quickly affected by oxygen starvation.

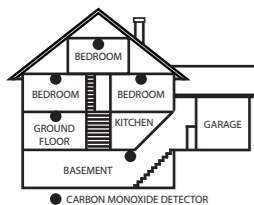
The following symptoms are related to CO poisoning and should be discussed with all members of the household so that you know what to look for:

- (a) Extreme exposure: unconsciousness, convulsions, cardio respiratory failure, death
- (b) Medium exposure: severe throbbing headache, drowsiness, confusion, vomiting, fast heart rate
- (c) Mild exposure: slight headache, nausea, fatigue (similar to "flu-like" symptoms)

Young children and household pets may be the first affected. Exposure during sleep is particularly dangerous, because the victim usually does not awaken.

3. LOCATIONS TO INSTALL YOUR DETECTOR

Since CO gas moves freely in the air, the suggested location is in or as near as possible to sleeping areas of the home. The human body is most vulnerable to the effects of CO gas during sleeping hours. For maximum protection, a CO detector should be located outside primary sleeping areas or on each level of your home. In the figure below are suggested locations in the home. The electronic sensor detects carbon monoxide, measures the concentration and sounds a loud alarm before a potentially harmful level is reached.



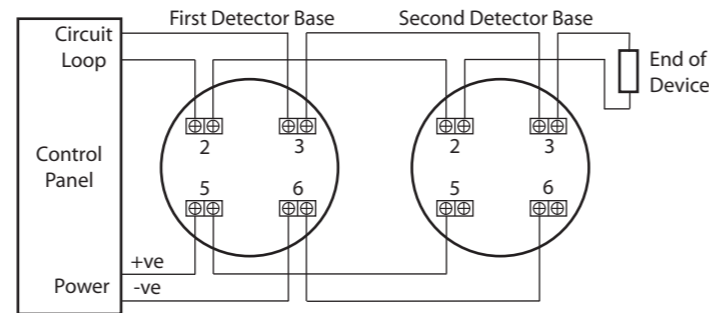
Do not place the detector in the following areas:

- (a) Where the temperature may drop below 4.4°C or exceeds 40°C.
- (b) Near paint thinner fumes
- (c) Within 1.5 meter of open flame appliances such as furnaces, stoves and fireplaces
- (d) In exhaust streams from gas engines, vents, flues or chimneys
- (e) Do not place in close proximity to an automobile exhaust pipe; this will damage the detector.

5. INSTALLING THE BASE OF DETECTOR

- (1) All the wires in the base should be flattened and should not touch any of the other connectors to ensure that the detector head is smoothly secured to the base.
- (2) When using the jump wires to check the connectivity for each gas detector in the circuit loop, be sure to remove all the jump wires before attaching the detector head onto the base.
- (3) Ensure that the components used in the circuit loop as shown in Figure 3 should be coupled up with those components used in the transceiver circuitry of the control panel.
- (4) The base is allowed to be installed within an available wiring box including octagon box (3", 3.5", or 4"), circular box (3") and rectangular box (4" long), without using any other additional mechanical adapters.

6. WIRING DIAGRAM FOR CQR-983 SERIES CARBON MONOXIDE DETECTORS



7. CHANGING THE RELAY

The relay is located in the detector head, the default setting is NC to change the relay output of the unit use the following procedure:-
Insert a screwdriver into the rectangular slot on the side of the detector head between the cover and body.

- (1) Remove the cover to expose the PCB.
- (2) Remove the jumper above the relay as indicated in fig 3.
- (3) Place on to the required setting NO or NC
- (4) Carefully replace the cover.

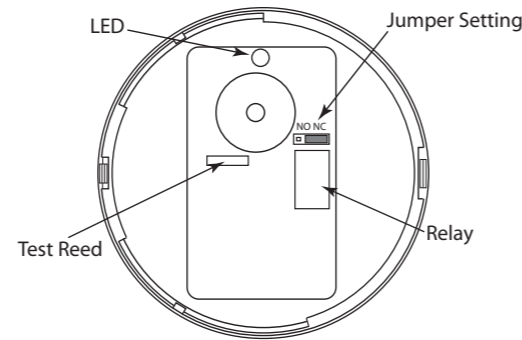


Figure 3. Internal view of detector

7. INSTALLING THE DETECTOR HEAD

- (1) Align the position of head to the base, see Figure 4.
- (2) Screw the detector head into the base in clockwise direction.

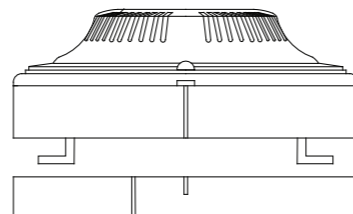


Figure 4. Alignment of detector head and its base

8. LED INDICATION

The carbon monoxide detector has to be warmed up for at least 15 minutes after being powered, during this time the GREEN Led will flash.

- There are four types of detector signaling:
- (1) During detector warm up GREEN LED will flash
 - (2) A constant GREEN LED indicates the detector in the normal monitoring condition.
 - (3) When the carbon monoxide is detected, the LED will change to a flashing RED, and be accompanied by an alarm sound.
 - (4) If the detector is not in normal operation, the LED will flash YELLOW and the buzzer will sound once every minute to indicate that a malfunction has been detected by the built-in self-monitoring circuitry.

9. ACTIONS TO TAKE WHEN ALARM SOUNDING

In case of harmful levels of CO gas being detected, your detector will go into a continuous full alarm. Try to take the following necessary actions immediately:

- (a) If there is anyone experiencing the effects of carbon monoxide poisoning such as headache, dizziness, nausea or other flu-like symptoms, call the fire services immediately. You should evacuate all the people in the premises immediately. Do a head count to check that everybody is accounted for.
- (b) Do not re-enter the premises until the problem has been corrected and the CO gas has been dispersed out and a safe level is reached.
- (c) If no symptoms exist, immediately ventilate the home by opening windows and doors. Turn off fuel burning appliances and call a qualified technician or your utility company to inspect and repair your problem before restarting appliances.

WARNING: Normally an activation of the detector indicates the presence of CO gas.

CAUTION: This detector will only indicate the presence of CO gas at the sensor. However, you have to be aware that the CO gas may be present in other areas in the premises.

10. ACTIONS TO TAKE AFTER THE PROBLEM BEING CORRECTED

When the amount of the CO gas presence in the premises has been corrected, the alarm from the detector should silence and the unit should reset automatically.

11. MAINTENANCE AND TESTING OF CARBON MONOXIDE DETECTORS

A CO detector constantly monitors for any carbon monoxide under its normal operational conditions. The following maintenance procedures for gas detectors will assure its desired performance:

- (1) Use a vacuum cleaner to clean the dust around the vent holes of gas detector cover.
- (2) Carry out a regular or weekly test of gas detectors. This test should only be carried out if the LED is a steady GREEN.
 - (a) To test the detector, place a magnet as indicated in figure 5 on the front of the detector. The detector should sound and the LED will change to RED.
 - (b) Remove the magnet; the sounder should stop sounding and the LED will change back to GREEN.

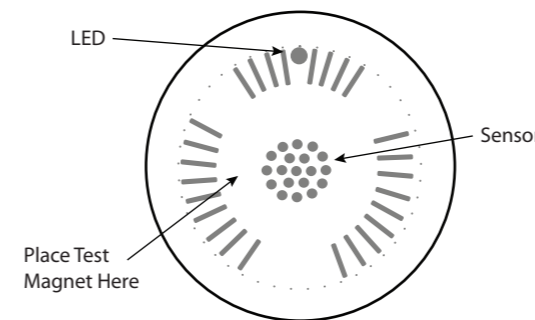


Figure 5 Front cover of detector head

12. SPECIFICATION:

Gas Monitored	CO
Operating Voltage	12 -30Vdc
Sensitivity (EN 50291)	50ppm within 90 minutes 100ppm within 40 minutes 300ppm within 3 minutes
Alarm Sounds	85dB
Operating Temp(°C)	0°C~40°C
Standby current	50uA @ 24Vdc
Alarm current	30mA @ 24Vdc
Output	Relay Output (Dry connection output)

13. WARNING AND LIMITATION

Note that CQR-983 series gas detector is not supposed to be used as smoke detector or fire alarm. In addition, a gas detector will operate normally under regular power supply; therefore, it will not detect when power is removed. The detector should be replaced every 5 years.

WARRANTY INFORMATION

Under the normal operation conditions, the manufacturer provides a 2 year warranty for the sensor head of the gas detector and a one-year warranty for other parts for repairing without charge. Part and labour charge will be required after the warranty is expired.

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