

CARBON MONOXIDE DETECTOR ZETA 200 CO USER'S MANUAL

PLEASE READ THESE INSTRUCTIONS BEFORE INSTALLING OPERATING THE CO ALARM

INTRODUCTION

This Carbon Monoxide Detector is effective for detecting any buildup of carbon monoxide, also known as CO gas, in your home or office. The features of your CO gas detector includes:

- (1) Easy to install.
- (2) Monitoring for carbon monoxide in a continuous manner.
- (3) Giving a loud alarm (85 dB) when it detects a buildup of carbon monoxide.
- (4) Having a Test button for you to test the detector anytime.
- (5) Self-testing its operative function continuously.
- (6) Complying the requirements of EN Standard 50291.
- (7) Offering a 5-year warranty for the carbon monoxide sensing unit

YOU SHOULD KNOW ABOUT CARBON MONOXIDE

Carbon monoxide, also known as "CO" by the chemical form, is considered to be a highly dangerous poisonous gas, because it is colorless, odorless or tasteless and very toxic. In general, biochemistry phenomena have shown that the presence of CO gas inhibits the blood's capacity to transport oxygen throughout the body, which can eventually lead to brain damage.

In any enclosed space (home, office, recreational vehicle or boat) even a small accumulation of CO gas can be quite dangerous.

Although many products of combustion can cause discomfort and adverse health effects, it is CO gas which presents the greatest threat to life.

Carbon monoxide is produced by the incomplete combustion of fuels such as natural gas, propane, heating oil, kerosene, coal, charcoal, gasoline, or wood. The incomplete combustion of fuel can occur in any device which depends on burning for energy or heat such as furnaces, boilers, room heaters, hot water heaters, stoves, grills, and in any gasoline powered vehicle or engine (e.g. generator set, lawnmower). Tobacco smoke also adds CO to the air you breathe.

When properly installed and maintained, your natural gas furnace and hot water heater do not pollute your air space with CO. Natural gas is known as a "clean burning" fuel because under correct operating conditions, the combustion products are water vapor and carbon dioxide (CO₂), which is not toxic. The products of combustion are exhausted from furnaces and water heaters to the outside by means of a fuel duct or chimney.

Correct operation of any burning equipment requires two key conditions:

- (a) An adequate supply of air for complete combustion.
- (b) Proper venting of the products of combustion from the furnace through the chimney, vent or duct to the outside.

Typical carbon monoxide gas problems are summarized here:

- (a) Equipment problems, due to defects, poor maintenance, damaged and cracked heat exchangers

- (b) Collapsed or blocked chimneys or flues, dislodged, disconnected or damaged vents
- (c) Downdraft in chimneys or flues. This can be caused by very long or circuitous flue runs, improper location of flue exhaust or wind conditions
- (d) Improper installation or operation of equipment, chimney or vents
- (e) Air tightness of house envelop/inadequate combustion of air
- (f) Inadequate exhaust of space heaters or appliances
- (g) Exhaust ventilation/fireplace competing for air supply

Potential sources of carbon monoxide in your home or office include clogged chimney, wood stove, wood or gas fireplace, automobile and garage, gas water heater, gas appliance, gas or kerosene heater, gas or oil furnace, and cigarette smoke.

POSSIBLE SYMPTOMS OF CARBON MONOXIDE POISONING

Carbon monoxide is colorless, odorless, 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.

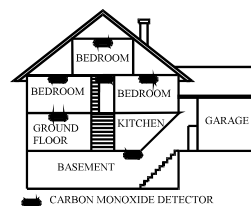
The following symptoms are related to CO poisoning and should be discussed with all members of the household so that you know what to look for:

- (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.

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 40°F (4.4°C) or exceed 100°F (37.8°C)
- (b) Near paint thinner fumes
- (c) Within 5 feet (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

INSTALLING YOUR DETECTOR

The Carbon Monoxide Detector is easy to install to protect you and your family in your home, cottage, cabin and office.

The product can be installed flush mounted set into a wall/partition. You will need the following tools to install the unit:

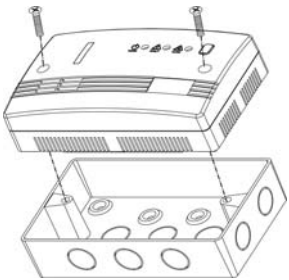
- Drill with a 6mm bit
- Phillips screwdrivers

The product is designed with the cables emerging from the bottom of the unit.

Flush mounting

In order to flush mount the unit a suitable hole will need to be cut in the wall. This will need to be 150mm wide by 90mm high and a minimum of 40mm deep. The power supply cabling and connections for the Remote LED and relay (if used) will need to come from behind or inside the wall. This will normally be via conduit in solid wall or from inside the outer skin of a partition wall. Once mounted in the hole in the wall, the unit can be secured to the wall using the two screws provided (and if needed the raw plugs) through the two holes either side of the base.

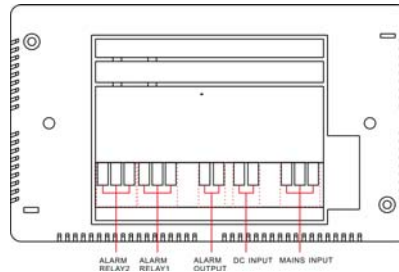
Figure 1 – Flush Mounting



Before connecting power ensure you have selected the correct connection for either mains or DC installation, checking the label on the product.

Feed the cables for the power (and, if used, the relay and Remote LED) up from the underside of the base. The cables are then secured using the cable clamps provide. The cable clamp can be reversed to accommodate larger cables as shown.

Figure 2 Cable Clamps



Mains Powered Connect

CAUTION: ISOLATE THE MAINS BEFORE STARTING WORK

The detector should be wired to the mains supply via an unswitched fused outlet to BS5733. The fuse should be rated at 3 Amps. The brown or red wire should be connected to the live terminal shown L below and the blue or black wire should be connected to the neutral terminal shown N. The earth terminal is not required.

Figure 3 AC Supply Wiring

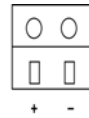


DC Powered Connect

The detector should be wired to the 12V or 24V supply with a fuse rated at 3 Amps. The red wire should be connected to the terminal shown below with a + (plus) sign and the black wire to the negative terminal shown with a – (minus). Reversing the connections may damage the product.

In caravans and motorhomes the detector should be connected to the battery supply via the main switch. This will ensure operation when the caravan is occupied. Permanent connection for prolonged periods may cause a flat battery if the battery remains uncharged

Figure 4 DC Supply Wiring

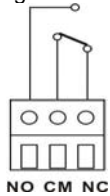


HOW TO USE THE RELAY FACILITY

The relay provides a means of signalling an alarm condition to an external warning device such as control panel or remote audible buzzer. It can also be used to shut off a gas valve in the event of a detected leak. The relay is a single pole changeover type that allows contacts to be either open or closed when gas is detected. Relay contacts can be wired in parallel to provide an alarm signal when any of the units connected detect gas.

For the mains powered versions the relay contact is specified up to 240V @ 6A ac and for DC powered versions its is specified at 24V @ 6A

Figure 5 Relay Wiring



TESTING AND RESETTING YOUR DETECTOR

A green power light indicates that power is supplied. To test the detector (do not test when detector is at warm up mode), press the test button and the detector will beep intermittently and the Yellow Fault LED, Red Alarm LED will flash. Release the Test button, the beep and the two LED will stop and green LED remains on.

A malfunctioning unit is indicated by beep-sounding twice within 4 Seconds and the Yellow Fault LED will flash. If this occurs, attempt to disconnect the power supply to the unit for 10 seconds and then power the unit again. Should the unit again beep intermittently, DO NOT use this detector. Send the malfunctioning unit to the manufacturer for servicing.

TAKING CARE OF YOUR DETECTOR

You have to maintain the detector frequently to ensure it working properly. Few tips are provided for you to take care of your detector:

- (a) Use a vacuum cleaner to clean the air vents occasionally to keep them free of dust. (Before cleaning your unit, unplug it from the wall outlet or .)
- (b) Push the Test button on your detector to test its operating function once every week.

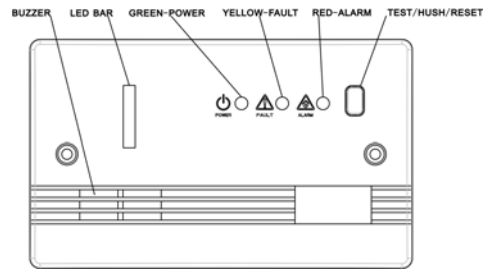
MEANINGS OF LED LIGHT & BUZZER

The LED light and buzzer turn on and/or off to indicate various situations. There are four different light and buzzer operations:

- (a) When the green LED is flashing, this situation means **warm up**. This situation is occurs between detector just power on and properly working.
- (b) When the green LED remains on, this situation means detector is **working properly**.
- (c) When the red LED flashes and the full alarm sounds sequentially, this situation means **alarm**.
- (d) When the unit emits beeps twice within 4 seconds and orange LED flashes, it indicates that the unit is **malfunctioning**. In this case, the detector is needed to be returned to manufacturer for repair or service.

Note: The Red Alarm LED and Yellow Fault LED flash every 0.5s and buzzer beeps as the sequence that 3 beeps, pause, 3 beeps pause, when you press the Test button.

Figure 6 Control Unit



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 your fire department right away or 911. 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. However, the CO gas can be extremely fatal, if it is not detected. The source of the CO gas may come from several possible situations, please refer to the list of sources of carbon monoxide in page 1.

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.

ACTIONS TO TAKE AFTER THE PROBLEM BEING CORRECTED

Once the problem about the CO gas presence in the premises has been corrected, the alarm of the detector should be off. After waiting for 10 minutes, push the Test button to test the detector so that you can make sure that the detector is working properly again.

TECHNICAL INFORMATION

Zeta CO 200 Carbon Monoxide Detector is engineered to be able to provide alarm sounds based on the EN standards due to various exposure time at different level of carbon monoxide concentrations.

Specifications:

MAINS POWERED

Input Supply Voltage: 230V 50/60Hz.
Fuse Rating: 0.2Amps in unswitched fused outlet.
Power Consumption: less than 7 Watts.

DC POWERED

Input Supply Voltage: 9 to 28 Volts DC
Fuse Rating: 0.5Amps.
Power Consumption: less than 4 Watts.

ALL ALARMS

Temperature range: -10° to +40°C.

Sensitivity: 50ppm within 90 minutes
100ppm within 30 minutes
300ppm within 3 minutes

Audible Alarm Output: 85dB at 3m

All alarms are calibrated, tested and design to meet the stringent performance requirements of the latest European standard for domestic gas alarms - BS EN50291:2001

The Alarm is calibrated at the factory and does not need recalibration. Do not tamper with the inside of the case or electric shock or malfunction may occur.

No user maintenance or adjustment is required.

WARNING AND LIMITATION

This detector may not alarm at low carbon monoxide levels. The Occupational Safety and Health Association (OSHA) has established that continuous exposure levels of 30 ppm should not be exceeded in an 8 hours period. Individuals with a medical problem may consider more sensitive detection devices.

The CO gas detector is not suitable as a smoke or fire detector. This detector is not suitable to install in a hazardous location, as defined in the National Electrical Code.

This detector will not work without power. The Carbon Monoxide Detector will not work if the power supply is disconnected or cut off or remove the batteries for any reason. Additionally, carbon monoxide must reach the detector for the proper performance of CO gas detection.

Carbon monoxide detectors may wear out because they contain electronic parts that fail at any time. Test your detector at least every week (see the section "TESTING YOUR DETECTOR").

SERVICE OR REPAIR INFORMATION

For service or repair, return your Zeta CO 200 Carbon Monoxide Detector intact, stating the reason for return and details of any fault, to the distributor who supplied the product.