



# CHCO Detector



- Microprocessor control
- Detects carbon monoxide and methane
- 230V supply
- Methane alarm relay SPDT
- Carbon monoxide relay SPDT
- Catalytic sensor for methane
- Electrochemical sensor for carbon monoxide
- Sensor active indicator
- EN50291 for toxic gas
- EN50194 for explosive gas

## Application

The CHCO is a dual sensor, methane and carbon monoxide detector. When methane and/or carbon monoxide are sensed the detector sounds an on board audible alarm and changes over a volt free contact relating to the type of gas sensed. These volt free relays can be used to isolate the electrical supply to gas solenoid valves or give a remote indication of an alarm. The alarm threshold for methane is 20% LEL and for carbon monoxide is 300ppm. The CHCO also has a separate carbon monoxide relay alarm facility which gives a relay output at 30-50-100ppm of carbon monoxide based on time weighted average function.



## Technical Specifications

Power supply: 230V 50Hz +/- 10% from detector

Electrical input: 1W

External protection rating: IP42

Working temperature: From -10°C to 40°C

Sensor type: Electrochemical and Nemoto Catalytic

CE Certification: No.96125

Alarm thresholds;

- Carbon monoxide: TWA 30ppm(2 hours), 50ppm (1 hour), 100ppm (10 minutes), 300ppm (0-3 minutes)

- Methane: 10% LEL

Humidity range: 0 - 90% condensing

Calibrated using: Duomo test gases

Interconnecting cable size: 1mm csa

Dimensions (L x W x D): 150 x 115 x 53mm

Guarantee: 3 years

### CAUTION!

**DO NOT TEST THIS SENSOR WITH ANYTHING OTHER THAN DUOMO TEST GAS 40% LEL METHANE IN AIR AND 300ppm CARBON MONOXIDE IN AIR.** Concentrations above this will damage the sensor and shorten its life. Carefully read the following instructions prior to installation of this device. Always keep this pamphlet for future reference. Ensure that the gas detection system is wired correctly and is only used for the purpose for which it is intended.

# CHCO Operation

**Before powering up the CHCO check that all electrical connections are correct.**

1. Apply 230V supply to terminals 1 (Ph) and 2 (N). Ensure that the correct fuse is used in the supply (4A max.)
2. The green 'ON' LED will flash during the sensor warm up period (approximately 2 minutes).
3. When the 'ON' LED become constant the detector is in operation.
4. A dry function test can be achieved by pressing the 'Test' button mounted inside the CHCO. This should only be carried out by a competent engineer. By pressing and holding the 'Test' button a simulated alarm will be performed, allowing a system check for all external wiring connected to the CHCO.
5. In order to conduct a full function test it is essential to use Duomo or equivalent calibrated test gas. The maximum concentration of methane in air is 40% LEL and carbon monoxide @ 330ppm in air. Any higher than this will reduce sensor life. NOTE: NEVER TEST USING NEAT GAS. THIS WILL POISON THE SENSOR.

The methane sensor will give an almost immediate alarm when the test gas is applied. The carbon monoxide will take approximately 1 minute at 330ppm. It is recommended that test gas is applied through a regulated test valve. This will extend the test time per bottle of gas.

6. When test gases are applied to the detector the audible alarm will sound and the relevant relay will be changed over to the normally open (NO) position.
7. When the test gases are removed from the detector the levels of gas will decline and when safe levels are reached the CHCO will auto reset.
8. Should the 'FAULT' LED be illuminated, the detector will fail safe and change over both alarm relays.

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## In Case Of Methane Alarm

Extinguish any naked flames.

Do not switch lights or electrical devices ON or OFF.

Open all windows and doors to increase ventilation.

If the audible alarm stops this means that the levels of gas have dropped. A responsible, qualified person is now safe to find the cause of the alarm.

If the alarm sound remains constant, and the cause is not evident or possible to eliminate turn off the emergency isolation valves to the area and contact your gas provider emergency line. They will advise accordingly.

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## In Case Of Carbon Monoxide Alarm

Open all windows and doors to increase ventilation.

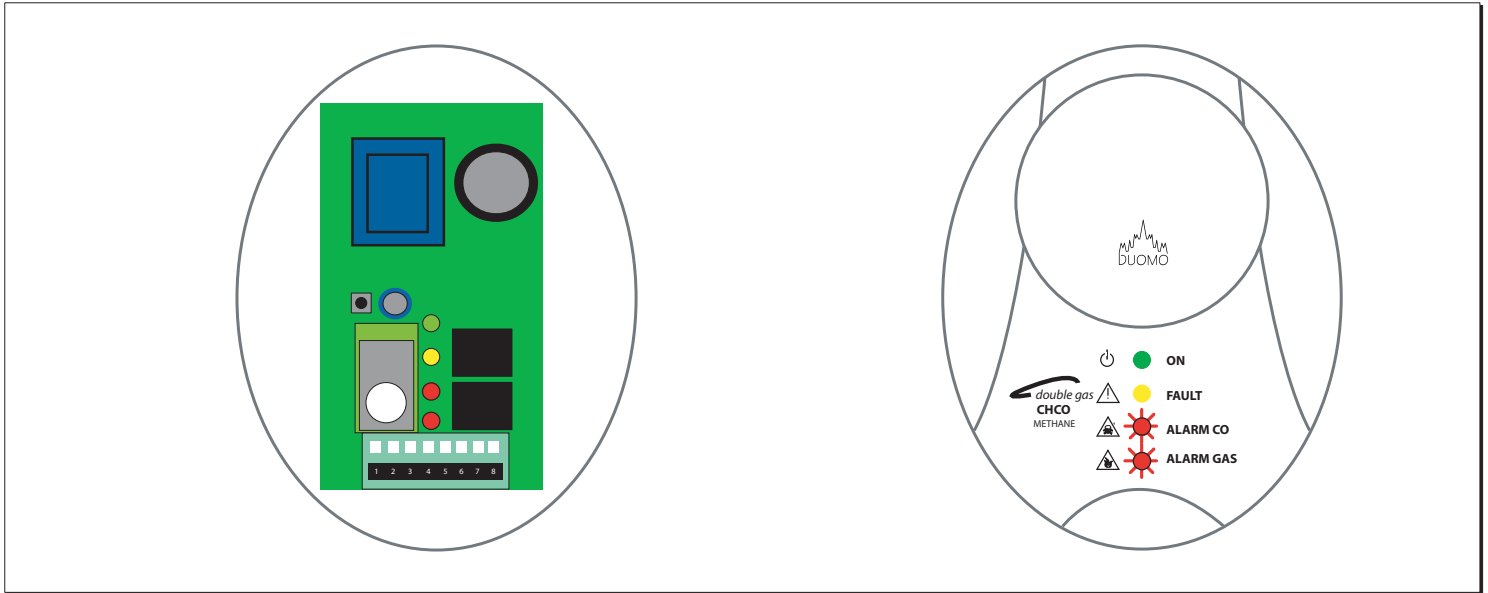
If the alarm stops it is necessary to find the cause of the alarm. This must be only be carried out by a responsible, qualified person.

If the alarm continues, leave the room immediately.

If you have any of the following symptoms; nausea, drowsiness or headache seek medical attention.

For any damage caused to people, property or animals resulting from incorrect connection, installation or application of this gas detector, Duomo (UK) Ltd. will not be held responsible or liable.

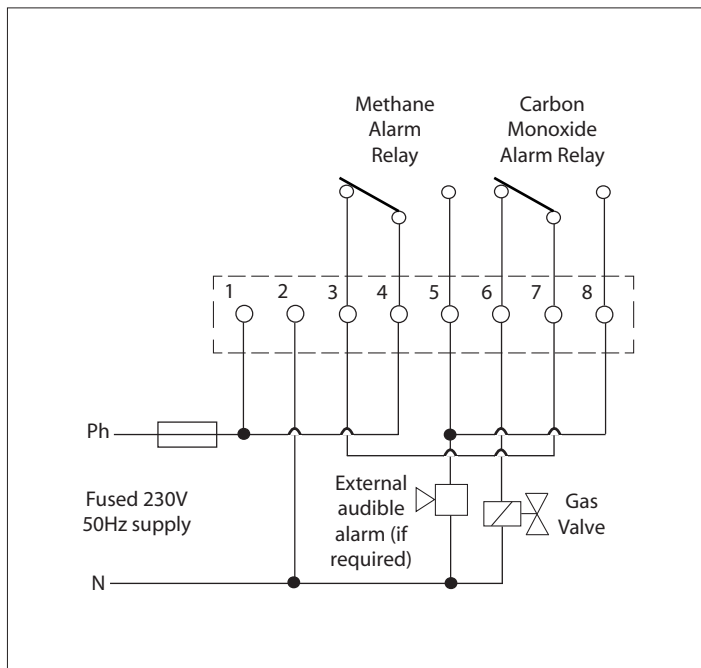
# CHCO Fascia & PCB Layout



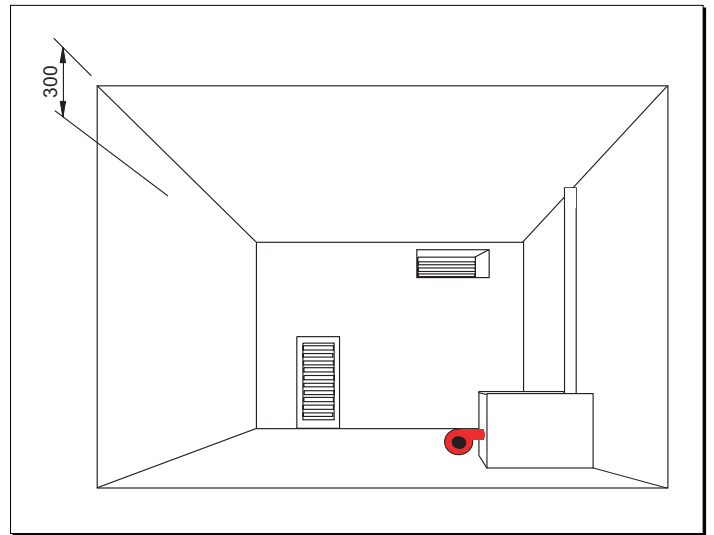
## Key

- 1. Catalytic sensor** - Sensor for detecting methane.
- 2. Test button** - Only to be used for testing in the laboratory by a qualified technician.
- 3. Electrochemical sensor** - Sensor for detecting carbon monoxide.
- 4. Wiring block**
- 5. Power on** - When blinking, indicates that the system is in test. After 2 minutes, the light will remain lit to indicate that it is fully operational.
- 6. Fault** - When lit, indicates that the catalytic sensor is not working efficiently and must be replaced. After 6 years this LED will blink continuously and the unit will emit a beep every hour.
- 7. CO Alarm** - Indicates that carbon monoxide has been detected
- 8. Gas Alarm** - Indicates that methane has been detected.

## Wiring Diagram



## Positioning Sensors



Position this sensor as shown above. Do not place near a direct heat source. The operating temperature limits of this sensor are from  $-10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ . The vertical position of the sensor is determined by the type of gas to detect (see diagram above). The installation of this gas detector does not release the user from observing all the regulations concerning the characteristics, installation and the use of gas appliances; the ventilation of the environment and the elimination of combustion products in accordance with local recommendations, regulations and byelaws.

