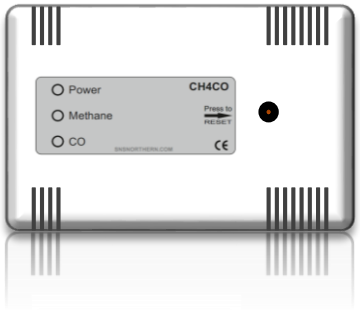
Gas Safety Products

Merlin CH4CO

Dual Gas Sensor – Methane & Carbon Monoxide



User Guide

Please read this guide carefully and retain for future use.

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1 General Information

Your new Merlin CH4CO is a dual gas sensor carefully designed and tested to monitor levels of natural gas- Methane (NG) and Carbon Monoxide (CO) in the air.

If there is a dangerous build-up of gas or unsafe levels of carbon monoxide at the sensor, this device can shut off the gas supply via a gas safety valve.

The information contained within this guide should be referenced for typical installation and operation only. For site specific requirements that may deviate from the information in this guide – contact your supplier.

⚠ Important Warning Statements

It is recommended that this device be commissioned upon installation and serviced annually.

The expected lifetime of gas sensor elements is 5 years.

Do not apply lighter gas or other aerosols to the device – this will cause extreme damage.

High concentrations of alcohol/ ethanol found in many products may damage, deteriorate or affect the gas sensing elements – Avoid exposure near your device.

This device is designed to detect carbon monoxide and methane from any source of combustion.
It is NOT designed to detect smoke, fire or other gases and should NOT be used as such.

Never ignore your device when in alarm.

This device requires a continual supply of electrical power – it will not work without power.

This device should not be used to substitute proper installation, use and/or maintenance of fuel burning appliances including appropriate ventilation and exhaust systems.

This device does not prevent methane or carbon monoxide from occurring.

Actuation of your alarm indicates the presence of dangerous levels of Methane or CO.
Seek fresh air supply and contact your local gas emergency service should you suspect a gas leak.

This unit may not fully safeguard individuals with specific medical conditions.
If in doubt, consult a doctor.

Your product should reach you in perfect condition, if you suspect it is damaged, contact your supplier.

Information on waste disposal for consumers of electrical & electronic equipment. (EEE)

When this product has reached the end of its life it must be treated as Waste Electrical & Electronics Equipment (WEEE). Any WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used.

Please contact your supplier or local authority for details of recycling schemes in your area.

2 Carbon Monoxide (CO) – General Information

Carbon monoxide (CO) is a poisonous, colourless, odourless, and tasteless gas. Although it has no detectable odour, CO is often mixed with other gases that do have an odour. So, you can inhale carbon monoxide right along with gases that you can smell and not be aware that CO is present.

SYMPTOMS OF CARBON MONOXIDE POISONING
The following symptoms are related to CO poisoning and should be discussed with ALL members of the household or person/s frequenting monitored areas.

Mild Exposure:
Slight headache, nausea, vomiting, fatigue, flu-like symptoms.

Medium Exposure:
Severe headache, drowsiness, confusion, increased heart rate.

Extreme Exposure:
Unconsciousness, convulsions, cardio-respiratory failure, death.

If you experience even mild symptoms of CO exposure – consult your doctor immediately.

CARBON MONOXIDE PPM LEVELS
This device is equipped with a digital display that shows levels of CO (displayed in PPM: parts per million).

Dangerous levels:
Generally above 100ppm. This should be treated as an urgent situation.

Medium levels:
Generally between 50ppm to 100ppm. This should be cause for concern and should not be ignored or dismissed.

Low levels:
Maximum acceptable indoor level of CO is <9ppm.
Anything above this level may cause possible health effects with long-term exposure.

POSSIBLE SOURCES OF CARBON MONOXIDE
Inside your home, appliances used for heating and cooking are the most likely sources of CO. Vehicles running in attached garages can also produce dangerous levels of CO.

CO can be produced when burning any fossil fuel, such as gasoline, propane, natural gas, oil and wood. It can be produced in any fuel burning appliance that is malfunctioning, improperly installed or insufficiently ventilated.

- Automobiles, gas stoves, water heaters, portable fuel burning heaters, fireplaces.
- Blocked chimneys or flues, corroded or disconnected vent pipes.
- Vehicles and other combustion engines running in open or closed garages.
- Burning charcoal or fuel in grills in an enclosed area or near the home.

3 Methane / Natural Gas (NG) – General Information

Methane gas comes from the earth and it comes from our bodies. Methane is non-toxic and it can be harnessed as an energy source. However, methane is highly explosive and it can cause death by asphyxiation. It is important to understand how to deal with the hazards associated with methane.

Although methane on its own isn't poisonous, it has the potential to become poisonous when mixed with other substances. That potential exists when natural gas (NG), which is 97% methane, is burned in houses, offices and businesses. The burning of natural gas without proper ventilation can produce carbon monoxide, a deadly gas that is difficult to detect.

SYMPTOMS OF METHANE EXPOSURE

Methane gas is relatively non-toxic and associated with being a simple asphyxiator displacing oxygen in the lungs. However Methane is extremely combustible.

Exposure to high levels of Methane can cause:

- Suffocation
- Loss of consciousness
- Headache and dizziness
- Nausea and vomiting
- Weakness
- Loss of co-ordination
- Increased breathing rate

METHANE LEL% LEVELS

The LEL (Lower Explosive Limit) of methane is considered to be 5% BV (by volume of air).

So we call 5% BV (by volume) the same as 100% of the LEL (Lower Explosion Limit).

Your device will monitor the level of natural gas in the area referred to as LEL% (a percentage of the LEL) and will alarm at 10% LEL.

For more information, please visit our website or contact your supplier.

4 Technical Specification

Power Supply	100-240VAC, 50-60Hz (Max 3.1VA without load)
Gas Sensor Type	**Methane**: semiconductor **Carbon Monoxide**: electrochemical
Typical Sensor Measuring Range	**Methane**: 50 ~ 10,000ppm **Carbon Monoxide**: 0 ~ 1000ppm
Accuracy @ 25℃ (77℉)	± 1ppm ± 5% reading
Initial Power Up Time	30-60 seconds
Gas Level Alarm	**Methane:** 10%LEL by volume
	Carbon Monoxide: 30 ppm for 2 hours 50 ppm for 1 hour 100 ppm for 10 minutes 300 ppm for 1 minute
Operating Conditions	-32 - 122℉; (0 - 50℃) 0 - 95%RH, Non Condensing
Net Weight	220g
Dimensions	(135mm (W) x 95mm (H) x 37mm (D)
Installation Standard	Wall mountable
Model No:	CH4CO

5 Installation & Location

This device is designed for surface mounting using 2 mounting screws (not supplied) and MUST be installed by a competent person. Mark the location of the holes needed on the wall using the back plate as a template.
Placing at eye level allows for optimum monitoring of the digital display screen, or as guide, 5 foot (1.5 meters) from ground level.

Removing the back plate gives access to the circuit board.
Do not attempt to remove the Circuit Board! This will void any warranty you may hold.

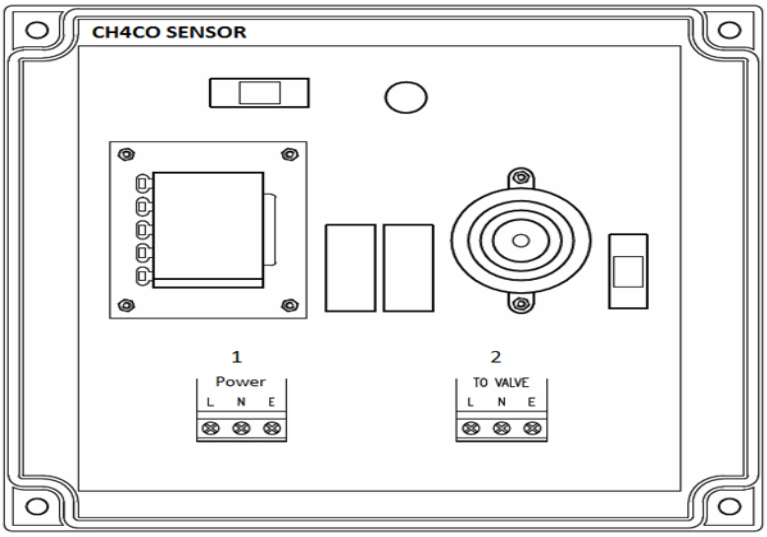
Recommended Installation Locations
The device should be mounted near the boiler or gas fired appliance/s such as domestic and commercial boiler rooms and basements.

When choosing your location, make sure you are able to hear the alarm from all areas.

- ✓ **DO** place the device at eye level to optimise monitoring of the digital display.
- ✓ **DO** place out of reach of children.
- × **AVOID** installation within 2 meters (6 feet) of heating or cooking appliances.
- × **AVOID** Installation near any ventilation openings, i.e. vents, chimneys, windows etc.
- × **AVOID** installation near ceiling fans, windows or areas exposed to direct weather.

⚠ **DO NOT OBSTRUCT THE VENTS LOCATED ON THE DEVICE ITSELF**

6 Circuit Board



1. POWER (LNE)

An electrical supply should be supplied to the sensor. (100-240VAC)
This should be externally fused at 3 Amps and connected to these terminals.

2. TO VALVE (LNE)

The gas solenoid valve should be powered using these terminals.

7 Power On & Off

How to turn your device ON

- Supply 240vAC mains to the [L N E POWER IN] terminal.
- Press RESET button.

How to turn your device OFF

- Remove or switch off the mains power supply.

8 LED Status

- **Power LED**

When the system is connected to the power supply, the Green Power LED will illuminate.

- **Methane LED**

When the gas detector has reached alarm state for Methane, this will illuminate Red.
To reset Alarm press RESET button.

- **CO LED**

When gas is detected, this will flash Red. If gas is exposed for pre-defined time – the Red LED will remain ON. To reset the Alarm press RESET button.

9 Maintenance

To keep your device in good working order, you must follow these steps:

- NEVER use detergents or solvents to clean your device – this may permenantly or temporarily damage the gas sensing elements.
- NEVER spray air fresheners, hair spray, paint or other aerosols near the device.
- NEVER paint the device. Paint will seal vents and interfere with the device.

10 Manufacturer's Warranty

3 Year Limited Warranty

Warranty coverage: The manufacturer warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of three (3) years from date of purchase. The manufacturer's liability hereunder is limited to replacement of the product with repaired product at the discretion of the manufacture. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only.

Warranty disclaimers: Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and intended operational purpose, are limited in duration to the above warranty period. In no event shall the manufacturer be liable for loss of use of this product or for any indirect, special, incidental or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent or consequential damage of any kind resulting from gas leakage, fire or explosion. This warranty does not affect your statutory rights.

Warranty Performance: During the above warranty period, your product will be replaced with a comparable product if the defective product is returned together with proof of purchase date. The replacement product will be in warranty for the remainder of the original warranty period or for six months – whichever is the greatest.

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