

## Natural Gas Detector ML-310

### User's Manual

This gas detector detects methane gas.

When gas is detected, an alarm (flashing of red LED, sounding of warning alarm) will be activated.

Read, understand and retain this manual for future reference.

### Safety Precautions

Read these precautions before using the product and be sure to follow these precautions in order to prevent hazardous situations and property damage.

Precautions are classified with the following symbols according to the severity of the hazards and damage that may arise due to incorrect handling of this product.



**DANGER** This indicates details for which incorrect handling of the product is expected to lead to situations having an imminent chance of hazards leading to death or serious injury.



**WARNING** This indicates details for which incorrect handling of the product is expected to lead to situations having a chance of hazards leading to death or serious injury.



**CAUTION** This indicates details for which incorrect handling of the product is expected to lead to situations having a chance of injury or property damage.



**DANGER** Make sure that the following are observed when a gas alarm sounds. There may be a risk of explosion. Leave the building immediately, opening doors and windows as you leave. Take others with you. If you are outside when you smell the gas, leave the area immediately.

Avoid causing a spark, which might cause the gas to explode:

1. Do not remove the connector from the lithium battery
2. Do not light a match or smoke.
3. Do not turn appliances or lights on or off.
4. Do not use a flashlight.
5. Do not start a car.
6. Do not use a telephone.

Find a phone away from the area and immediately call 911 and/or your natural gas utility. You can report leaks anonymously. Always call to report the problem. Do not assume someone else will do it.

Do not re-enter the area until the source of the leak is found and corrected. Follow directions from utility employees or emergency responders who are on site.



- This gas detector is equipped with an End Of Life timer that will expire after 5 years from date of installation. Replace any gas detectors for which 5 years has passed since their installation with a new gas detector.
- Do not subject the gas detector to water either by submerging it in water or spraying water on it.
- Do not disassemble or modify this product.
- Do not subject this product to any impact.

- Do not remove the dedicated lithium battery, except for when disposing of the gas detector.
- Never cover this product.
- When removing or installing the gas detector, do so by using a stable ladder or step stool and proceed with caution.
- Do not change this product's installation position.
- Do not place or install objects in front of the gas detector.
- Do not spray cleaning chemicals or insect sprays directly on or near the detector, as this may cause the detector to malfunction.
- Do not expose this detector to high concentrations of Freon, other CFCs or Volatile Organic Compounds, as over exposure to such substances may cause the detector to malfunction.
- Do not expose this detector to silicones, as over exposure to such substances may cause the detector to malfunction.
- Do not paint over the Alarm. Doing so may permanently damage the detector.

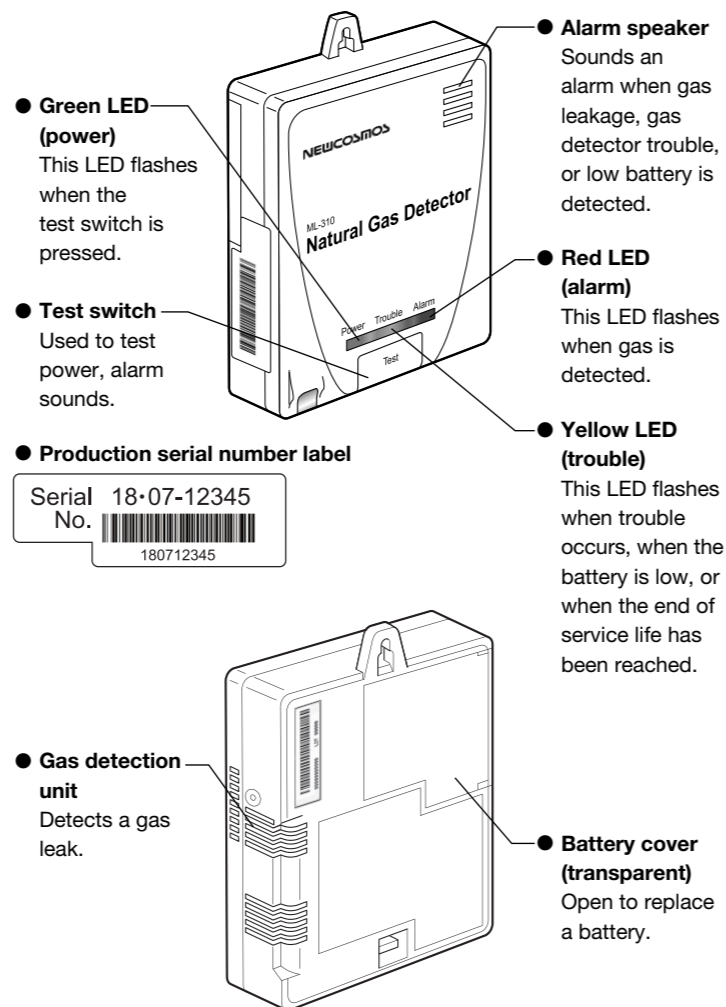
### CAUTION

- Do not listen to alarms with your ear close to the gas detector.
- Do not expose this detector to abnormally strong radio waves/signals, like those emitted from amateur radio equipment, as this may cause the detector to malfunction.

### Target Gas

- This gas detector detects methane gas.

### Names and Functions of Parts

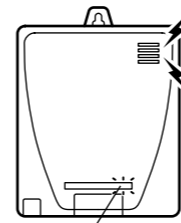


### Gas Detector Functions

Visual and audible signals will not stop until the product is reset by removing and reinstalling the battery.

#### When a gas leak occurs

An alarm sounds when the level of gas in the area of the gas detector reaches or exceeds a certain concentration.

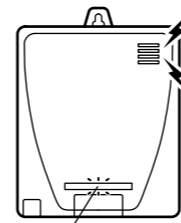


Red LED (alarm)  
Flashes once every 2 seconds

An alarm sounds every 6 seconds stating "Beep Beep Beep Beep Danger – gas leak explosion risk – evacuate, then call 911."

#### When trouble occurs

When trouble occurs, a trouble alarm sounds.

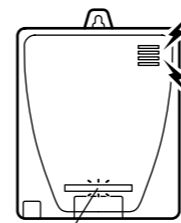


Yellow LED (trouble)  
Flashes 3 times every 10 seconds

An alarm sounds every 60 seconds stating "Beep Beep Beep Detector error"  
By pressing the switch for 3 seconds, an alarm will sound stating "Beep Beep Beep Detector error"

#### When the battery is low

When the battery is low, a low battery alarm sounds.



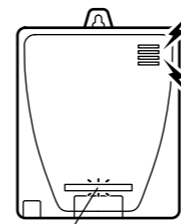
Yellow LED (trouble)  
Flashes once every 10 seconds

An alarm sounds every 60 seconds stating "Beep Low Battery"  
By pressing the switch for 3 seconds, an alarm will sound stating "Beep Low Battery"

\* Batteries in this device are not available in retail. Please call NEW COSMOS ELECTRIC CO.,LTD.for replacement batteries.

#### When the end of service life is reached

When the end of service life is reached, an end of service life notification is issued.

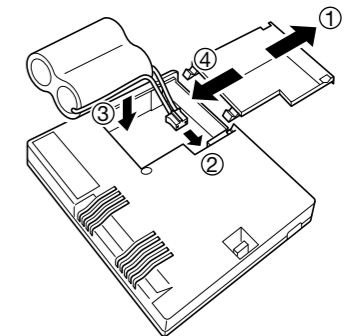


Yellow LED (trouble)  
Flashes twice every 10 seconds

An alarm sounds every 60 seconds stating "Beep Beep Please replace detector"  
By pressing the switch for 3 seconds, an alarm will sound stating "Beep Beep Please replace detector"

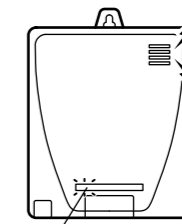
### Usage Instructions

1. Open the battery cover on the back of the gas detector.
2. Connect the included lithium battery by inserting the battery harness connector into the product as shown in the attached illustration.  
\* Once the lithium battery is connected, the gas detector's green LED (power) will flash once for 1 second.
3. Insert the lithium battery and close the cover.



4. After the battery is plugged in, the detector will enter an initialization period for approximately 30 seconds . A "Beep" will sound after this 30 second period and the detector will begin monitoring.

\* The device status will be confirmed during that 30 second period.



A "Beep" sounds 30 seconds after power is turned on

Green LED (power)  
Flashes once every second during the 30 second initialization period.

5. After the 30 second initialization period, press and hold the Test Switch for more than 3 seconds to test the alarm.

### General Maintenance

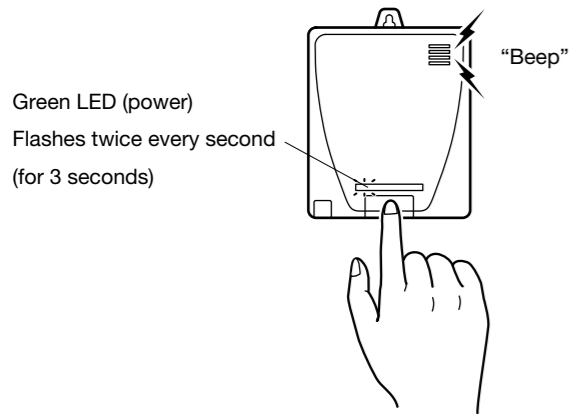
This detector has been designed to be as maintenance-free as possible, but there are a few simple things you must do to keep it working properly:

- Test it at least once a week.
- Clean the detector at least once a month; gently vacuum the outside of the detector using your household vacuum's soft brush attachment. Test the alarm. Never use water, cleaners or solvents since they may damage the unit.
- Relocate the unit if it sounds frequent unwanted alarms. See "Where This Alarm Should Not Be Installed" for details.
- If product enters low battery mode, the batteries must be replaced. Batteries in this device are not available in retail. Please call NEW COSMOS ELECTRIC CO.,LTD. for replacement batteries. In order to replace the battery, open the battery cover on the back of the product and gently disconnect the battery harness connector from the product. Follow the Usage Instructions section to install the new battery.

## Test Functions

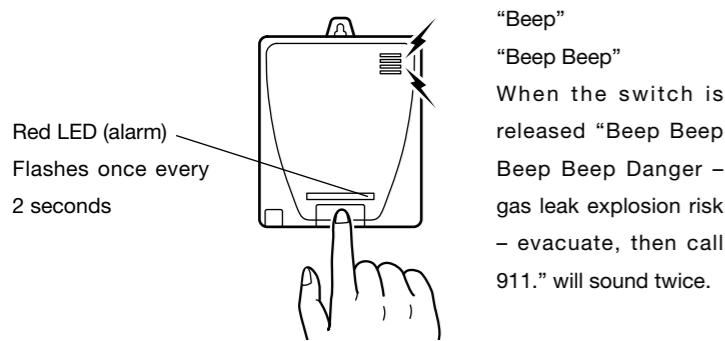
### ■ Power check function

A “Beep” sounds when the switch is pushed. If the switch is then released in less than 3 seconds, the green LED will flash twice every second (for 3 seconds) to indicate that the power is on.



### ■ Alarm push button function

If the switch is pressed for approximately 3 seconds, both a “Beep” and a “Beep Beep” will sound. If the switch is then released in less than 10 seconds, the red LED will flash once every 2 seconds and the gas alarm “Beep Beep Beep Beep Danger – gas leak explosion risk – evacuate, then call 911.” will sound twice.



## What to do when the alarm “Beep Beep Beep Beep Danger – gas leak explosion risk – evacuate, then call 911.” sounds

<b>⚠ DANGER</b>	Make sure that the following are observed when a gas alarm sounds. There may be a risk of explosion.
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Leave the building immediately, opening doors and windows as you leave. Take others with you. If you are outside when you smell the gas, leave the area immediately.

Avoid causing a spark, which might cause the gas to explode:

1. Do not remove the connector from the lithium battery
2. Do not light a match or smoke.
3. Do not turn appliances or lights on or off.
4. Do not use a flashlight.
5. Do not start a car.
6. Do not use a telephone.

Find a phone away from the area and immediately call 911 and/or your natural gas utility. You can report leaks anonymously. Always call to report the problem. Do not assume someone else will do it.

Do not re-enter the area until the source of the leak is found and corrected. Follow directions from utility employees or emergency responders who are on site.

## How to Install

Gas detectors should be installed in all rooms where a gas leak may occur or a gas appliance is located. Examples are a kitchen (gas leaks from gas ovens and cook tops), laundry (gas leaks from a gas clothes dryer), and furnace area (gas leaks from furnace burners or boilers). However, do not install closer than 10 feet (3 meters) from gas appliance.

It is possible that gas leaks may migrate along pipes so consideration should be given to place gas detectors in multiple rooms.

Gas detectors should be located between 6 to 12 inches (0.15 to 0.3 meters) from the ceiling.

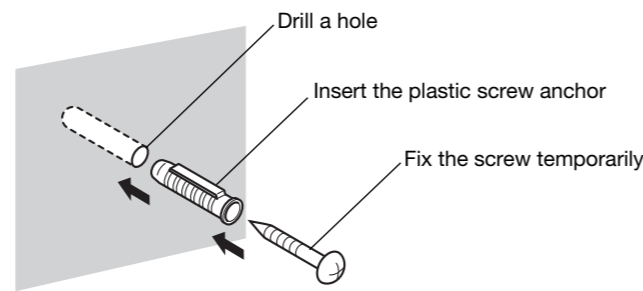
Air movement around the detector must not be impeded by items hanging from the ceiling or near the ceiling such as curtains, drapes, ceiling fans.

The detector should not be installed in the peak of a cathedral ceiling.

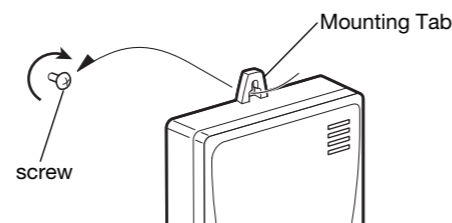
### ■ Wall Mounting

Tools you will need: Drill with 3/16” or 5mm drill bit, Phillips head screwdriver, hammer.

1. Choose a location on the wall between 6 inches (0.15 meters) to 12 inches (0.3 meters) from the ceiling. Make a mark in the Mounting Tab of the detector where you will drill the mounting hole.
2. Use a 3/16” (5 mm) drill bit to drill the mounting hole.
3. Insert the plastic screw anchor into the mounting hole until it is flush with the wall. If necessary, tap it gently with a hammer.
4. Tighten the screw into the anchor until the screwhead is about 3/16 inch (5 mm) away from the wall, leaving enough space for the Mounting Tab.



5. Hang the Mounting Tab on the screw.



6. Lightly tighten the screw to secure the detector.
7. Press and hold the Test Switch for more than 3 seconds to test the alarm.

## Where This Alarm Should Not Be Installed

- In a small enclosed space.
- Directly above or near sources of water or humidity such as a sink, cooktop, dishwasher or bathroom.
- Although it is important to install detectors in rooms where gas appliances exist, it is recommended the detector be placed as far from these appliances as possible, preferably more than 10 feet (3 meters) away. The placement recommendations are intended to keep these detectors at a reasonable distance from a gas source, and thus reduce “unwanted” alarms. Unwanted alarms can occur if a detector is placed directly next to a gas source.
- If you must install the detector near a cooking appliance or cooktop hood, install at least 5 feet (1.5 meters) from appliance because cooking vapors or grease may contaminate the detector.
- Next to a door or window.
- Next to a ventilation fan.
- Near a room return or HVAC duct.
- In an area where the temperature will drop below 32°F (0°C) or exceed 122°F (50°C).
- In an area that is dusty or dirty.
- In an area where organic solvents exist.
- In a damp or very humid location.

## Troubleshooting

Symptom	Cause	Action
The green LED does not flash even when the switch is pressed	Battery connector not plugged in	Plug in the battery connector.
	Battery is low	Replace the gas detector.
The yellow LED is flashing	Flashes 3 times every 10 seconds Gas detector trouble	Replace the gas detector.
	Flashes twice every 10 seconds End of gas detector service life	Replace the gas detector.
	Flashes once every 10 seconds Low gas detector battery	Replace the gas detector.

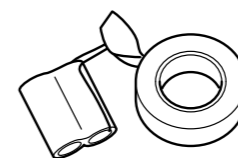
## Disposal

When disposing of this product, do so in accordance with local laws and regulations.

Also, remove the lithium battery when disposing.

### ⚠ WARNING

- Wrap the removed lithium battery with tape, etc., so that the connector portion does not short. Such a short may cause heat generation, an explosion, or ignition to occur. Any of these may result in injury or fire.



## Specifications

Conforming standards	UL standard (UL1484), FCC certified
Detection principle	MEMS hot wire semiconductor sensor
Target gas	Methane gas
Gas immunity*	Acetone, ethanol, bleach solution
Operating temperature range	32°F (0°C) to 122°F (50°C)
Operating humidity range	5% to 95%, no condensation
Power supply	CR17450E-R-2-CN DC3V, 300mA (dedicated connector connection)
Battery warranty	5 years
Alarm level	10%LEL
Response time	120 sec. (25%LEL)
Sound pressure	Gas alarm : 85 dB/10 feet
Initial power-up timer	Approx. 30 seconds (green LED flashes once every second)
Power indicator	A “Beep” will sound once when the switch is pressed for less than 3 seconds and the green LED will flash twice every second (for 3 seconds)
Gas alarm	Red LED flashes once every 2 seconds Gas alarm sounds “Beep Beep Beep Beep Danger – gas leak explosion risk – evacuate, then call 911” every 6 seconds. Alarm will continue as described for 4 minutes. After 4 minutes, Alarm Sound will be produced 1X/60sec and LED will blink as described during sound. Visual and audible signals will not stop until the product is reset by removing and reinstalling the battery.
Trouble alarm	Yellow LED flashes 3 times every 10 seconds Trouble alarm sounds “Beep Beep Beep Detector error” every 60 seconds.
Low battery	Yellow LED flashes once every 10 seconds Low battery sounds “Beep Low battery” every 60 seconds.
Alarm push button function	Product produces Gas alarm signal when the switch is pressed for more than 3 seconds.
End of service life	Yellow LED flashes twice every 10 seconds End of service life sounds “Beep Beep Please replace detector” every 60 seconds.
Battery removal indicator	The battery removal indicator will consist of a transparent battery cover that when a battery is not present exposes a warning flag label with the following markings: WARNING : NO BATTERY! Alarm is non-operational.
Weight and dimensions	Approx. 130 g, W 85 × H 100 × D 22 mm (excluding protrusions)
Installation	Pipe mount by cable ties or wall mount with hardware.
Accessories	User’s Manual (this manual)
FCC Compliance	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. and (2) this device must accept any interference received, including interference that may cause undesired operation.

\* Validated by Gas Technology Institute report, Evaluation of Residential Methane Detectors, Phase III. Project No. 21696. Report Issued July 25, 2017 [https://www.newcosmos-global.com/product/gti\\_report.pdf](https://www.newcosmos-global.com/product/gti_report.pdf)

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