

***Qoltec®***



USER MANUAL

SMART NATURAL GAS AND CARBON  
MONOXIDE LEAK DETECTOR

Model: 52654

## Introduction

Thank you for choosing the Qoltec Smart Natural Gas (CH<sub>4</sub>) and Carbon Monoxide (CO) Leak Detector. To ensure your personal and system safety and to achieve the best performance from the device, please read this manual carefully and thoroughly before installing, using or repairing this device. Please pay particular attention to the warnings and notes contained in the manual.

## About the product

This domestic flammable gas detector utilises a high-quality gas sensor. The device is manufactured using a high-performance single-chip microcomputer, advanced electronic components and modern technology. Thanks to its hardware and software, the detector is capable of detecting a sensor failure whilst monitoring gas concentrations, ensuring a high level of safety and reliability.

The detector is suitable for installation in residential properties where there is a risk of a gas leak. It can continuously monitor the concentration of flammable gases indoors. When the gas concentration reaches the alarm threshold, the device will emit an audible and visual alarm, allowing for swift action to be taken to prevent fire, explosion or poisoning.

## Sensor design

Figure 1 in the appendix to the manual

- 1 Status indicator
- 2 Service life indicator
- 3 Button
- 4 Audible alarm ports
- 5 Gas detection ports
- 6 Power cable
- 7 Solenoid valve cable
- 8 Relay cable
- 9 Mounting plate

## IMPORTANT SAFETY INFORMATION

1. Before installing and using the device, please read the user manual carefully.

2. The device should be installed by a competent person, in accordance with the user manual and the requirements regarding the location and method of installation.
3. The sensor is designed to detect carbon monoxide (CO) and natural gas, in accordance with the manufacturer's intended use.
4. Do not use the device to detect other gases, smoke or fire unless this function has been explicitly specified by the manufacturer.
5. The detector must only be installed in the location and at the height specified in the user manual. Incorrect positioning may reduce the effectiveness of hazard detection.
6. Do not cover or block the sensor's vents.
7. Do not paint, stick labels on, cover or modify the device.
8. Do not install the detector in locations exposed to direct contact with water, steam, strong draughts, excessive dust, grease or corrosive chemicals, unless the instructions for the specific model state otherwise.
9. Do not use aerosols, solvents or strong cleaning agents in the immediate vicinity of the sensor.
10. Do not dismantle or repair the device yourself.
11. Do not test the sensor using an open flame, vehicle exhaust fumes, a lighter or by deliberately releasing gas.
12. Check the device's operation regularly using the TEST function, in accordance with the instructions in the user manual.
13. Do not ignore fault signals, low battery warnings or indications that the sensor has reached the end of its service life.
14. Once the stated service life has elapsed, the device must be replaced.

**IMPORTANT:**

**The sensor does not replace the correct installation, use and periodic inspection of gas appliances, heating systems and room ventilation.**

**The device is an additional component of the safety system. You should regularly inspect the gas installation, fuel-burning appliances, flues and the ventilation system to ensure it is unobstructed.**

**Incorrect installation, obstruction of the detector or failure to check its operation regularly may reduce its effectiveness in detecting hazards.**

**WARNING REGARDING CARBON MONOXIDE:**

**“This device is designed to protect people from the serious effects of carbon monoxide exposure. However, it cannot fully protect people with specific health conditions. If in doubt, consult a doctor.”**

## Installation method

**Note:** The detector is intended for indoor use only. It should be installed in areas where gas leaks or build-up may occur. The detector should be mounted horizontally at a distance of between 1 m and 4 m from a gas appliance and vertically at a distance of between 0.3 m and 1 m from the ceiling. Users may select an installation location in accordance with the diagram below, adapting it to the actual conditions.

1. Select a suitable spot on the wall for mounting the detector;
2. Secure the mounting plate using wall plugs;
3. Switch on the detector and check that it is working correctly;
4. Fit the detector by hanging it on the mounting plate.

Figure 2 in the appendix to the manual

### **Note:**

1. The power cable is fitted with a plug; please connect it directly to a suitable socket.
2. The solenoid valve is polarised — the red wire is the positive terminal, the black wire is the negative terminal; connect them according to the markings.
3. The relay is non-polarised and does not require polarity to be distinguished when connecting — it can be connected directly.
4. If the product features both a solenoid valve and a relay, please take the above points into account. Otherwise, they may be disregarded.

### **AVOID Installation:**

- Near ventilation inlets/outlets, extractor fans, doors or windows with strong air flow,
- Places with high humidity or exposed to water droplets,
- Directly above sources of heat or water vapour,
- Above gas appliances,
- Places prone to dirt accumulation,

- Areas obscured by obstacles.

**Please note: If the room is to be painted or refurbished, please do not install the detector until the renovation or painting work has been completed.**

## User manual

1. Connect the detector to a power source. The green power LED will flash during the 3-minute warm-up period, during which gas detection is disabled. Once the warm-up is complete, the green LED will remain lit and the detector will enter normal detection mode.

### In the event of a natural gas leak alarm

The alarm should be treated as a warning of a potential hazard.

- 1) Do not use naked flames or smoke.
- 2) Do not switch lights or electrical appliances on or off.
- 3) Do not plug appliances into or unplug them from sockets.
- 4) Do not use appliances that may cause sparks.
- 5) If it is safe to do so, close the main gas supply valve.
- 6) If it is possible to do so without compromising safety, open doors and windows to ventilate the room.
- 7) Leave the affected room.
- 8) From a safe place, contact the relevant emergency services.
- 9) Do not return to the room until the cause of the leak has been identified and rectified.

### In the event of a carbon monoxide alarm

Carbon monoxide (CO) is a colourless and odourless toxic gas, so its presence cannot be detected by sight or smell.

If the alarm is triggered:

- 1) Do not ignore the alarm.
- 2) If you can do so quickly and safely, open doors and windows to ventilate the room.

- 3) If it is safe to do so, switch off any fuel-burning appliances that may be a source of carbon monoxide.
- 4) Leave the room or building and go out into the fresh air.
- 5) Make sure that everyone else has also left the area of danger.
- 6) Contact the relevant emergency services.
- 7) Do not return to the room until the source of the carbon monoxide leak has been identified and removed.
- 8) If you experience symptoms such as headache, dizziness, nausea, weakness, confusion, shortness of breath or loss of consciousness, seek medical assistance immediately.

## Alarm indication

- 1) When the concentration of both gases reaches the alarm threshold, the red LED will flash and the detector will emit 4 beeps, repeated until the alarm ends.
- 2) If only carbon monoxide reaches the alarm threshold, the red LED flashes and the detector emits 3 repeated beeps. If only methane reaches the alarm threshold, the red LED will flash and the detector will emit 2 repeated audible signals.
- 3) The alarm will switch off automatically when the gas level falls below the safe limit. The audible and visual signal indicates that the gas concentration has exceeded the limit.

If the yellow LED is lit continuously and the siren sounds every 10 seconds:

- 3 beeps — both sensors (CO and methane) are faulty,
- 2 beeps — the methane sensor is faulty,
- 1 beep — the carbon monoxide sensor is faulty.

In this case, the detector is not functioning correctly. Contact the service centre or your supplier.

- 4) To perform a self-test, press the button once. The siren will sound 4 beeps, and the yellow, red, yellow and green LEDs will flash in sequence (1 cycle). The detector will return to normal monitoring. If the self-test fails, contact the service centre or the manufacturer.

If the yellow LED is flashing and the siren emits 3 beeps every 10 seconds, briefly press the button to perform a self-test:

- If the green LED is lit continuously and the siren is silent, this indicates that the CO sensor has reached the end of its service life.
- If the yellow LED continues to flash and the siren emits three beeps every 10 seconds, this indicates that both sensors – methane and CO – have reached the end of their service life. Contact the service centre or the manufacturer for repair or replacement.

## LED indicator statuses – Description of LED indicators

Green LED: Power

Red LED: Alarm

Yellow LED: Fault

| <i><b>Mode</b></i>    | <i><b>LED</b></i>                                                    | <i><b>Lifespan indicator</b></i> | <i><b>Audible signal</b></i>                               |
|-----------------------|----------------------------------------------------------------------|----------------------------------|------------------------------------------------------------|
| <i>Heating mode</i>   | <i>Green LED flashes</i>                                             | -                                | -                                                          |
| <i>Normal mode</i>    | <i>The green LED is lit continuously</i>                             | -                                | -                                                          |
| <i>Self-test mode</i> | <i>Flashing in sequence: yellow, red, yellow and green (1 cycle)</i> | -                                | <i>4 beeps (1 cycle)</i>                                   |
| <i>Fault mode</i>     | <i>The yellow LED remains lit</i>                                    | -                                | <i>CO+CH4: 3 beeps every 10 seconds (continuous cycle)</i> |
|                       |                                                                      | -                                | <i>CH4: 2 beeps every 10</i>                               |

|                                                      |                                                                                                   |   |                                                                                                                    |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------|
|                                                      |                                                                                                   |   | <i>seconds (continuous cycle)</i>                                                                                  |
|                                                      |                                                                                                   | - | <i>CO: 1 signal every 10 seconds (continuous cycle)</i>                                                            |
| <i>Alarm mode</i>                                    | <i>The red LED flashes continuously</i>                                                           | - | <i>CO: 3 beeps every 2 seconds (continuous cycle)</i>                                                              |
|                                                      |                                                                                                   | - | <i>CH4: 2 beeps every 2 seconds (continuous cycle)</i>                                                             |
|                                                      |                                                                                                   | - | <i>CO+CH4: 4 beeps every 2 seconds (continuous cycle)</i>                                                          |
| <i>End of CO sensor life</i>                         | <i>The yellow LED flashes continuously</i>                                                        | - | <i>3 beeps every 10 seconds (continuous cycle)</i>                                                                 |
| <i>End of service life of CO and methane sensors</i> | <i>Yellow LED: flashing continuously (Pressing the button does not restore normal operation.)</i> | - | <i>Audible alarm: 3 beeps every 10 seconds (cyclical) (Pressing the button does not restore normal operation.)</i> |

## Warm-up mode

Once the detector is connected to the power supply, the green power LED will start flashing and the device will enter warm-up mode, which lasts approximately 3 minutes. During this time, the detector will not detect any gas leaks. After 3 minutes, the device will switch to normal operating mode and the green LED will remain lit.

## Alarm mode

When the concentration of gas in the air reaches the set alarm threshold, the detector will enter alarm mode:

- the red LED will flash,
- the device will emit 4 audible beeps repeated in a cycle,
- the mobile app will display a gas leak notification.

In this situation, you must immediately:

- turn off the gas supply,
- open the windows,
- do not switch on any electrical appliances (including your mobile phone),
- if necessary, contact a specialist to repair the leak.

Sensor activation thresholds (carbon monoxide): in accordance with PN-EN 50291-1:2018

Alarm levels and volume:

Alarm level (natural gas): 10% LEL  $\pm$ 3%

Alarm level (carbon monoxide): in accordance with PN-EN 50291-1:2018

- 50 ppm – alarm after 60–90 minutes
- 100 ppm – alarm after 10–40 minutes
- 300 ppm – alarm within  $\leq$  3 minutes

Alarm volume:  $\geq$ 85 dB(A) at a distance of 3 m

Installation: Installation must be carried out in accordance with the instructions, by a competent person and in compliance with local regulations.

## Return to normal operation

When the gas concentration falls below the alarm threshold, the device will automatically cancel the alarm.

If the detector triggers the visual and audible alarm again, this means that the gas concentration has once more exceeded the safe level.

## Detector fault alarm

If the yellow LED is lit continuously and you hear 3 beeps every 10 seconds, this indicates a fault with the detector. The device cannot detect gas correctly — please contact your retailer for repairs.

## Function test – TEST button

As part of a routine check, press the button once.

The detector will enter self-test mode:

- the device will emit 4 beeps,
- the battery life indicator will flash 4 times,
- the LEDs: yellow, red, yellow and green will light up in sequence (1 cycle),
- your phone will receive a notification about the alarm test.

Once the test is complete, the device will automatically return to normal operating mode.

The self-test also includes activating the solenoid valve and the relay (if connected).

If the device does not perform the self-test, contact your dealer or the manufacturer.

## Network connection setup

Connect the detector to the power supply, then press and hold the button for 3 seconds during the warm-up process. Release the button when the red LED starts flashing rapidly. Enable Wi-Fi and Bluetooth on your phone and connect to your home Wi-Fi network (the network must operate on the 2.4 GHz band). If the connection is not established within 2 minutes, pairing mode will switch off automatically (Figure 3 in the appendix to the manual).

- 1) Open the Tuya Smart or Smart Life – Smart Living app.
- 2) Select the [Add Device] option. (Figure 4 in the appendix to the manual).
- 3) Your phone will automatically scan for nearby devices. The detected device will be displayed – marked with a red rectangle.
- 4) Tap [Add]. A window will appear where you must enter your Wi-Fi password, then tap [Next].

- 5) After a few seconds, the device will be successfully added.
- 6) You can also add the device manually (Bluetooth must be enabled on your phone). After selecting [Add Device], choose the 'Sensor' category, then 'Gas Detector (Wi-Fi)'.
- 7) After completing the previous step, a window will appear where you should enter the Wi-Fi password and click [Next].
- 8) Check the message shown in the illustration and click [Confirm the indicator is blinking].
- 9) Tap [Blink Quickly].
- 10) After a few seconds, the detected gas detector will appear – click [Next].
- 11) Once the process is complete, a screen will appear confirming that the device has been added. Here, you can rename the detector as required. When finished, click [Done].

Figure 5 in the appendix to the manual

**Note:**

**Make sure your home Wi-Fi network is working properly; otherwise, you may not be able to use the device.**

**If you change your Wi-Fi network, you must remove the device from the app and add it again following the instructions in point 1.**

## Wi-Fi connection trouble indicator

If the yellow LED is lit continuously and you hear 4 beeps every 10 seconds, you should:

- check that the router is working properly,
- check that the Wi-Fi network is operating on the 2.4 GHz band,
- ensure that the Wi-Fi signal at the detector's installation location is stable,
- check that the Wi-Fi network name or password has not been changed.

## Sensor wear – messages

**The device has two independent sensors:**

**CO sensor – 3-year service life,**

**methane (CH<sub>4</sub>) sensor – service life of 5 years.**

If the CO sensor reaches the end of its service life whilst the methane sensor is still functioning, the device will trigger an end-of-life alert:

- the yellow service life LED flashes,
- 3 beeps are heard every 10 seconds.

Pressing the button will trigger a self-test, after which the device will return to normal operation — but pressing the button again will trigger the alert once more (as per the device's design).

This function operates only when:

- the CO sensor has failed,
- the methane sensor is still operational.

**If both sensors have reached the end of their service life, the device will not allow the end-of-life alarm to be cancelled.**

**Please contact your retailer or the manufacturer to arrange for repairs or to purchase a new detector.**

## Technical specifications

|                              |                                                                                                             |
|------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Standard</b>              | EN 50291-1:2018; EN 50194-1:2023; RED 2014/53/EU                                                            |
| <b>Operating voltage</b>     | AC 100V–240V / 50Hz–60Hz                                                                                    |
| <b>Application</b>           | Methane (CH <sub>4</sub> ) / Carbon monoxide (CO)                                                           |
| <b>Sampling method</b>       | Free diffusion                                                                                              |
| <b>Sensor type</b>           | Semiconductor (CH <sub>4</sub> ) / electrochemical (CO)                                                     |
| <b>Sensor service life</b>   | 5 years (typical for CH <sub>4</sub> ) 3 years (typical for CO)                                             |
| <b>Alarm volume</b>          | 7% LEL ± 3% LEL (CH <sub>4</sub> ) / 70 ± 30 ppm (CO)                                                       |
| <b>Alarm mode</b>            | Audible + visual                                                                                            |
| <b>Alarm sound level</b>     | ≥85 dB (1 metre in front)                                                                                   |
| <b>Installation</b>          | Wall-mounted                                                                                                |
| <b>Storage temperature</b>   | -20°C to 55°C                                                                                               |
| <b>Operating environment</b> | Temperature: -10 °C to 40 °C<br>Relative humidity: <95% (non-condensing) Ambient pressure: 86 kPa ~ 106 kPa |

|                   |                          |
|-------------------|--------------------------|
| <b>Dimensions</b> | 112 mm × 86 mm × 33.5 mm |
|-------------------|--------------------------|

## Troubleshooting

| <b>Fault</b>                                                                                 | <b>Possible cause</b>                                                                                                         | <b>Solution</b>                                                                                                                                             |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The green power LED is not lit                                                               | The power cable is not connected correctly                                                                                    | Check and reconnect the power cable correctly                                                                                                               |
|                                                                                              | Faulty power LED or circuit failure                                                                                           | Contact your distributor or the manufacturer for repairs                                                                                                    |
| No audible or visual alarm during the self-test                                              | Circuit failure                                                                                                               | Contact your distributor or the manufacturer for repairs                                                                                                    |
| No response to detected gas                                                                  | The detector is warming up                                                                                                    | Please wait until the warm-up is complete                                                                                                                   |
|                                                                                              | System failure                                                                                                                | Contact your distributor or the manufacturer for repairs                                                                                                    |
|                                                                                              | The power cut lasted too long                                                                                                 | Switch on the power and wait at least 4 hours                                                                                                               |
|                                                                                              | The gas concentration has not reached the alarm threshold                                                                     | Wait until the gas concentration reaches the alarm threshold                                                                                                |
| A continuous alarm after switching on the device and a specified period of time has elapsed. | Presence of large amounts of cigarette smoke, alcohol or volatile organic compounds (e.g. petrol, perfume, banana oil, paint) | Move to a clean, well-ventilated area and try again                                                                                                         |
|                                                                                              | System failure                                                                                                                | Contact your distributor or the manufacturer for repairs                                                                                                    |
| Wi-Fi connection error                                                                       | Wi-Fi disconnection                                                                                                           | <ol style="list-style-type: none"> <li>1. Check that the router is working properly.</li> <li>2. Check that the Wi-Fi signal is operating on the</li> </ol> |

|  |  |                                                                                                                                                                                    |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>2.4 GHz band.</p> <p>3. Ensure that the Wi-Fi signal is stable where the device is installed.</p> <p>4. Check that the Wi-Fi network name or password has not been changed.</p> |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### **NOTES:**

In the event of faults that you cannot resolve yourself, do not dismantle the detector. Contact your distributor or the manufacturer for assistance.

#### **NOTES:**

1. High levels of cigarette smoke, alcohol or volatile organic compounds such as petrol, perfume, banana oil or paint in the room may cause the detector to trigger false alarms;
2. Do not use gases of unknown concentration to test the detector. Gases with very high concentrations may damage the sensor, shorten its service life and be harmful to health;
3. Contact your distributor or manufacturer for assistance and use suitable gases at the correct concentration for the annual testing of the detector;
4. The product must not be used or stored in an environment containing corrosive gases (e.g. chlorine);
5. Regularly clean the surface of the detector to remove dust and oily dirt using a brush or a dry, soft cloth;
6. After prolonged storage or transport, switch on the detector and leave it for at least 24 hours to achieve optimum performance;
7. Under normal operating conditions, the semiconductor sensor has a service life of up to 5 years, whilst the electrochemical sensor has a service life of up to 3 years.

## Product maintenance

1. Clean the detector at least once a year, ensuring that the gas inlet is free from dust and oil;
2. After cleaning, refit the detector onto the mounting plate and check that it is working correctly;
3. Carry out an analogue alarm test every six months to ensure correct operation;
4. Do not expose the detector to prolonged or frequent exposure to high concentrations of gas, as this may reduce the sensor's sensitivity, shorten its service life or damage it;
5. The detector should be connected to a stable power supply;
6. In the event of a fault, contact your distributor or the manufacturer to arrange for repairs or to purchase a new unit.

## Disposal

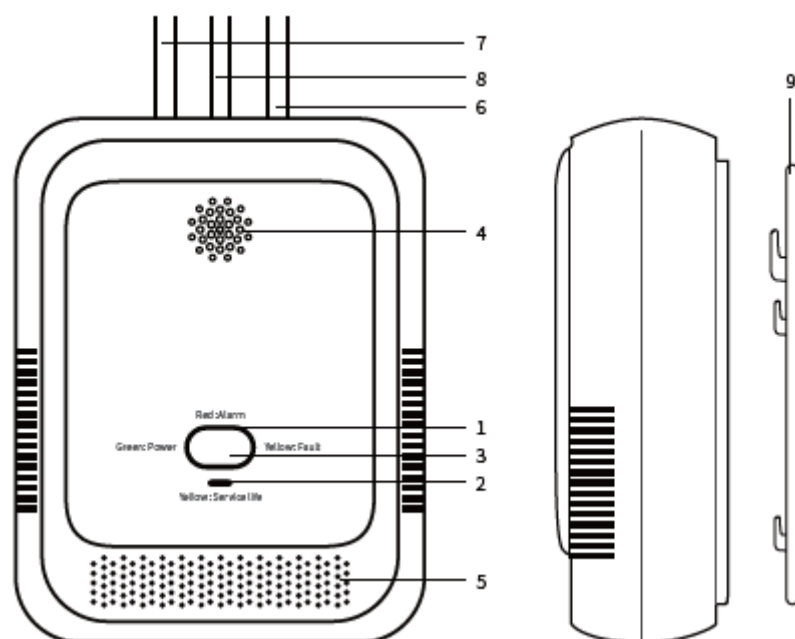
Dispose of in accordance with local regulations on electronic waste. Do not throw into a fire or burn.

## Warranty

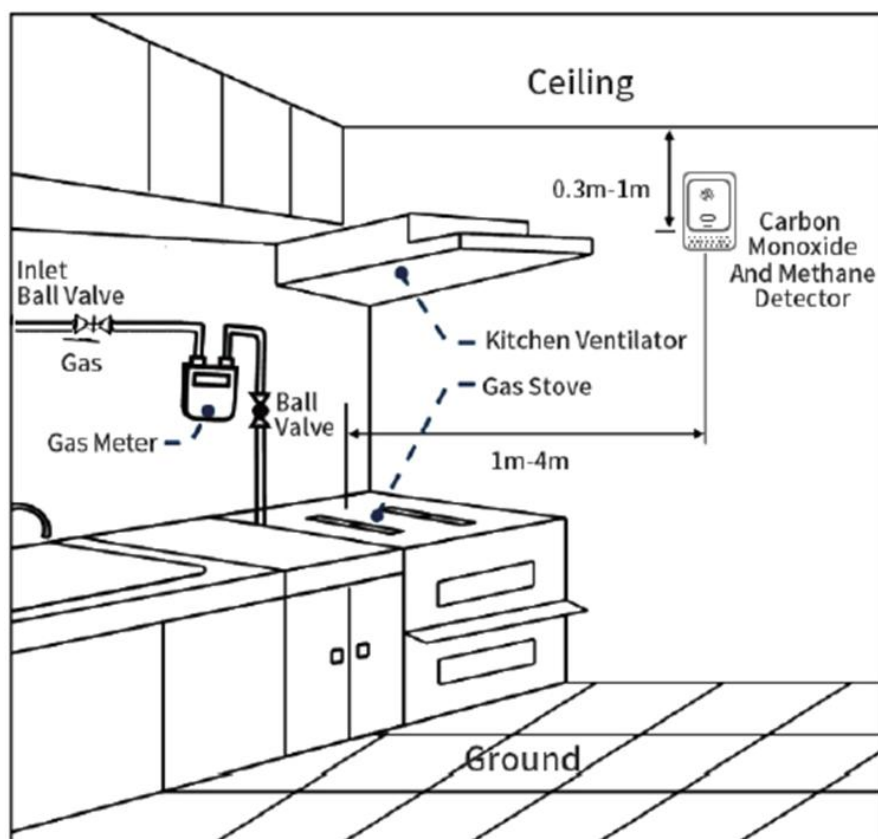
The product is covered by a 24-month manufacturer's warranty from the date of purchase. If you experience any problems, please contact customer services.

## Attachment 1

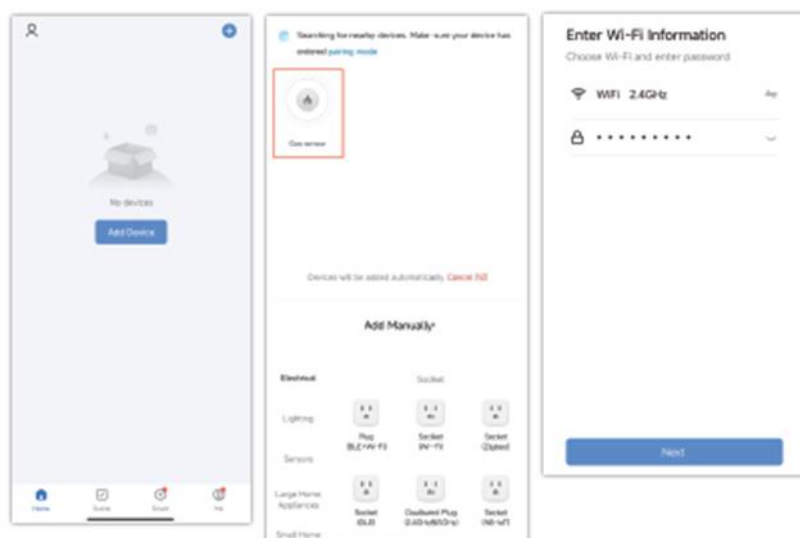
1



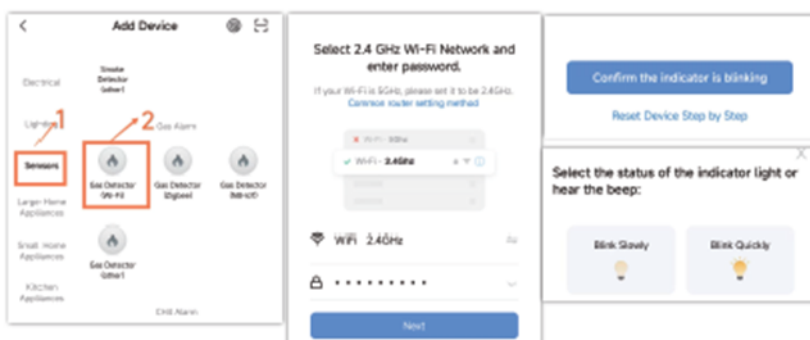
2



3



4



5

