

Gas Detector User Manual

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Product: Gas Detector

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Category: Gas Detector

Connectivity: 2.4 GHz Wi-Fi

Power: 100-240V AC Mains Plug-in (or 12V DC adapter)

What this detector does

The TechGuard Gas Detector is a continuous Wi-Fi combustible gas leak alarm engineered for domestic kitchens, restaurant cooking areas, LPG gas cylinder storage banks, and commercial generator power rooms across Nigeria.

The hardware houses a high-stability catalytic gas sensor that continuously samples ambient air for combustible hydrocarbon gases:

- Liquefied Petroleum Gas (LPG: butane and propane) from cooking cylinders
- Natural gas (methane) from gas pipelines
- Fuel vapors in generator rooms

When combustible gas concentration exceeds safe lower explosive limits, the detector sounds an 85dB onboard siren, flashes its red visual alarm indicator, and dispatches instant alerts through the TechGuard cloud.

In the TechGuard app you can:

- View live monitoring state: Monitoring, Gas Alarm, Fault, or Offline
- Receive immediate push notifications, email reports, and mandatory SMS alerts
- Remotely mute the siren during an active alarm event once you have confirmed the leak site
- Review historical leak and clear events in the Activity feed

Important operation notice: The detector is a standalone sensor. It does not actuate an external solenoid gas valve or shut off gas pipes automatically. It does not report arbitrary ppm numerical readouts. It triggers verified alarm states based on physical sensor thresholds.

What you need

- The TechGuard mobile app on iOS or Android (native build)
- A 2.4 GHz Wi-Fi network with constant internet connectivity (5 GHz is not supported)
- Continuous AC mains power supply at the installation site
- A verified phone number on your TechGuard profile to receive urgent SMS leak warnings

Mounting and placement guidelines

Proper placement depends on the type of gas being monitored:

- For LPG (cooking gas cylinders, butane/propane): LPG is heavier than air and sinks to the floor. Install the detector 30 cm to 100 cm above the floor, within 1.5 meters horizontal distance from the gas cylinder or cooker.
- For Natural Gas (methane): Methane is lighter than air and rises toward the ceiling. Install the detector 30 cm to 100 cm below the ceiling, within 1.5 meters horizontal distance from the gas source.
- Do not install: Directly above cooking hobs (smoke and grease steam cause false readings), directly next to exhaust fans, behind curtains, or in areas with high humidity and water splashes.

Setup and pairing

The detector requires an initial warm-up period before pairing can succeed.

1. Plug the detector into AC power.
2. Wait 1 to 5 minutes for sensor preheating. During preheating, the indicator light cycles through red, green, and yellow. Do not attempt pairing until the light turns solid green (Monitoring mode). Pairing too early will fail.
3. Open the TechGuard app, navigate to Add Device, and select Gas Detector.
4. Enter your home 2.4 GHz Wi-Fi network name and password.
5. Using a pin or paperclip, press and hold the RESET button on the side of the housing for 5 seconds until the LED begins blinking slowly (approximately once every 3 seconds). If the LED blinks rapidly, press and hold RESET again until it enters slow-blink mode.
6. Return to the app and confirm the indicator is blinking slowly.
7. Follow the on-screen prompts: connect to the device setup Wi-Fi if prompted, rejoin your home network, and assign a room name (for example "Main Kitchen" or "Generator Room").
8. Tap Save Device.

If pairing fails

| Symptom | Resolution |

|-----|-----|

| Device fails to connect during countdown | Ensure you allowed the full 1 to 5 minute sensor warm-up before pressing RESET. |

| Home Wi-Fi not found | Verify your router broadcasts a 2.4 GHz signal. Move the detector closer to the router during setup if needed. |

| Fast blinking LED | Hold RESET again until the LED flashes slowly (once every 3 seconds). Slow blink is required for pairing. |

| Unit previously registered on another app | Press and hold RESET for 10 seconds to restore factory defaults, allow warm-up, and retry. |

The detector screen in TechGuard

- Monitoring: The sensor is online, healthy, and ambient gas concentration is normal.
- Gas Alarm: Combustible gas detected. The hardware siren is sounding, the LED ring is red, and emergency dispatches are active.

- Fault: The internal sensor has encountered a self-diagnostic issue. Clean the vents or contact support.
- Offline: The device has lost Wi-Fi connection or AC mains power has failed.

What to do during a gas alarm

If the detector sounds an alarm:

1. Do not operate light switches, electrical appliances, power generators, or mobile phone chargers in the vicinity. Sparks can ignite gas.
2. Extinguish all open flames immediately.
3. Close the shutoff valve on your gas cylinder or main supply pipe immediately.
4. Open all doors and windows to ventilate the space thoroughly.
5. If the leak persists, evacuate all persons from the premises and call emergency services from a safe outdoor distance.
6. Do not re-enter until the app confirms the sensor status has returned to "Monitoring" and all gas odors have dissipated.

Siren mute function

You can silence the 85dB alarm siren from the TechGuard app:

1. Open the detector detail screen in the app.
2. Tap Settings.
3. Under Siren Control, tap Mute Siren.

Mute rules:

- The Mute button is active only while an alarm is sounding. You cannot pre-mute the sensor.
- Muting silences only the current alarm event. It does not disable the detector permanently.
- Once the room air clears and gas levels drop below threshold, the mute state resets automatically. Any subsequent gas leak will trigger the siren again.

Alert channels

- Push Notifications: Immediate alert dispatched to your smartphone.
- Email Alerts: Formal incident report sent to your registered account email.
- SMS Text Messages: Urgent text alert sent to your profile mobile number. SMS is permanently enabled for all gas alarms and cannot be turned off in the app.

What the app does not do

- Shut off gas valves or solenoid actuators automatically
- Display continuous ppm or percentage gas density numbers
- Remotely trigger a siren self-test from the smartphone
- Permanently disable the hardware alarm siren

Maintenance and testing

- Test the unit monthly by pressing the physical test button on the device face. The siren will sound and the LED will flash to confirm alarm circuitry is functional.
- Do not spray lighter gas, aerosol sprays, or cleaning solvents directly into the sensor vents. Direct high-concentration gas exposure degrades the sensor element.
- Keep the ventilation slots clean by vacuuming or wiping gently with a dry microfibre cloth every 3 months.