ATO GD200-N2

ATO GD200-N2 Portable Nitrogen Gas Detector Instruction Manual

Model: GD200-N2 | Brand: ATO

1. Introduction

The ATO GD200-N2 is a portable nitrogen (N2) gas detector designed for accurate and reliable leak detection. It features a built-in micro-pump and a high-accuracy sensor, ensuring fast response times. This device is equipped with a digital LCD display, providing clear readings of gas type, unit, concentration, and local time. It also includes sound, light, and vibrating alarms with settable alarm points for enhanced safety. The detector is compact, lightweight, and housed in a durable casing, making it suitable for various applications.

2. Key Features

- **High Accuracy Sensor:** Equipped with a built-in micro-pump and high-accuracy sensor for precise N2 gas detection.
- **Digital LCD Display:** Clear dot matrix display shows gas type, unit, concentration, and local time. Gas units can be switched between PPM and mg/m3.
- **Multiple Alarms:** Features sound, light, and vibrating alarms with user-settable alarm points.
- **Rechargeable Battery:** Powered by a large-capacity rechargeable lithium polymer battery.
- **Durable Design:** Compact, lightweight, and housed in a robust casing for easy portability and longevity.
- **User-Friendly:** One-key factory reset, self-calibration, and zero calibration functions ensure accurate and reliable detection.
- **Wide Application:** Ideal for N2 concentration detection in electronic component storage, nitrogen tank areas, food packaging, nitrogen cylinder and tank purity measurement, and laboratories.

3. Package Contents

Upon unboxing, verify that all items are present and in good condition:

- ATO GD200-N2 Portable Nitrogen Gas Detector
- Aluminum Alloy Carrying Case
- USB Charging Cable
- Power Adapter (Type-A, Type-C, Type-G, or Type-I depending on region)
- Filter for dust and water vapor
- Instruction Manual
- Test Certificate / Quality Inspection Report

Image: The ATO Portable Nitrogen Gas Detector shown next to its protective carrying case.

4. Product Overview

The ATO GD200-N2 features a robust design with clearly labeled buttons and a bright LCD display for easy interaction.

Image: Diagram of the ATO Portable Nitrogen Gas Detector with numbered components and their labels.

Controls and Display:

- **ON/OFF Button:** Located in the center, used to power the device on or off.
- **MENU Button:** Accesses the main menu and navigates through options.
- **ESC (Escape) Button:** Exits current menu or setting.
- **Arrow Buttons (< / >):** Used for navigation and adjusting values.
- **LCD Display:** Shows gas concentration, battery level, time, and other operational information.

5. Setup

Initial Power On and Warm-up:

1. Ensure the device is in an area with fresh ventilation.
2. Press and hold the **ON/OFF** button in the center for 3 seconds to power on the device.
3. The device will display a startup sequence and then initiate a 60-second warm-up period. This ensures the sensors are fully activated for accurate readings.
4. Once the warm-up is complete, the device enters measure mode, and information will be displayed on the screen.

Basic Settings:

Adjust alarm points, language, pump speed, and time settings as needed.

Video: This video demonstrates how to adjust basic settings such as alarm points, language, and time on the ATO portable gas detector.

Alarm Settings:

1. From the main menu, navigate to 'ALARM' and press **OK**.
2. Select the channel (CHAN) and press **OK**. Use the arrow keys to change the channel. Press **OK** again.
3. Navigate to 'LOW' alarm and press **OK**. Use the arrow keys to adjust the low alarm value. Press **OK** again.
4. Navigate to 'HIGH' alarm and press **OK**. Use the arrow keys to adjust the high alarm value. Press **OK** again.
5. Press **ESC** to return to the main menu.

Language Settings:

1. From the main menu, navigate to 'SET' and press **OK**.
2. Select 'LANG' (Language) and press **OK**. Use the arrow keys to select your preferred language (e.g., English, Chinese). Press **OK** again.
3. Press **ESC** to return to the main menu.

Pump Speed Settings:

1. From the main menu, navigate to 'SET' and press **OK**.
2. Navigate to 'PUMP' and press **OK**. Use the arrow keys to adjust the pump speed (11 settings available). Higher speed results in greater vibration. Press **OK** again.
3. Press **ESC** to return to the main menu.

Time Settings:

1. From the main menu, navigate to 'CLK' (Clock) and press **OK**.
2. Select 'TIME' and press **OK**. Use the arrow keys to adjust the time. Press **OK** again.
3. Select 'DATE' and press **OK**. Use the arrow keys to adjust the date. Press **OK** again.
4. Press **ESC** to return to the main menu.

6. Operation

Once the device has completed its warm-up and basic settings are configured, it is ready for gas detection. The device will continuously monitor N2 gas concentration in the range of 0 to 100% Vol. The digital LCD display will show real-time readings.

Image: A hand holding the ATO Portable Nitrogen Gas Detector in an industrial environment.

Alarm Indication:

If the N2 gas concentration exceeds the set low or high alarm points, the device will activate its audible, visual (light), and vibrating alarms to alert the user.

7. Calibration

Regular calibration is crucial for maintaining the accuracy and reliability of the gas detector. Calibration should be performed by qualified professionals using necessary accessories and standard gas. Typically, calibration should be done yearly.

Video: This video demonstrates the calibration process for the portable gas detector.

Zero Calibration:

Zero calibration is performed when the drifting is too large after the reading is stable, or if an alarm occurs unexpectedly. This ensures the device reads zero in a clean air environment.

Span Calibration (Target Point Calibration):

Span calibration involves applying a standard gas of a specific known concentration to the sensor without

atmospheric dilution. The calibration result should match the concentration of the standard gas.

Calibration Procedure:

1. Connect the standard gas to the detector.
2. Press **MENU** and navigate to 'Calibrate span'. Press **OK**.
3. Enter the password (default is 2020). Use arrow keys to change digits and **OK** to confirm each digit.
4. Set the value to match the standard gas concentration (e.g., 502.0). Use arrow keys to adjust and **OK** to confirm.
5. The device will indicate successful calibration.

8. Data Storage

The device has a memory function to retrieve history data and map out trends of gas density. It also features a USB port for high-speed data transmission to a computer for easier analysis.

Video: This video provides instructions on parameter settings, including data storage functions.

Storage Settings:

1. From the main menu, navigate to 'Storage set'.
2. You can enable or disable the storage function by using the arrow keys and confirming with **OK**. Note that the storage function is OFF by default every time the device is turned on.
3. Adjust the storage interval (e.g., 5 seconds) using the arrow keys and confirming with **OK**.

Viewing History Data:

1. From the 'Storage set' menu, navigate to 'View history'.
2. The display will show records with data coding, date, time, and gas concentration.
3. Use the arrow keys to review different records.

Erasing History Data:

1. From the 'Storage set' menu, navigate to 'Erase ex_flash'.
2. Enter the password (default is 9999).
3. Confirm the action. The device will beep and display 'erasing', then return to measure mode once complete.

9. Charging

The device is powered by a rechargeable lithium polymer battery. When the battery level is low, the device will indicate this on the display.

1. Insert the charging cable into the USB port on the device.
2. Plug the power adapter into a suitable power outlet.
3. The device display will show the recharging status.

10. Maintenance

- **Cleaning:** Regularly clean the exterior of the device with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Filter:** Ensure the filter is clean and free from dust and water vapor to maintain optimal performance. Replace if damaged or excessively dirty.
- **Storage:** Store the device in its protective aluminum alloy carrying case when not in use to prevent damage.
- **Calibration:** As mentioned in Section 7, regular calibration (typically yearly) by qualified professionals is essential for accuracy.
- **Restore Settings:** If parameters are incorrect or the instrument malfunctions (e.g., continuous alarm), use the 'Restore settings' option in the 'SET' menu. This function requires a password to activate and should be used with caution.

11. Troubleshooting

- **Inaccurate Readings:** Perform zero and span calibration. Ensure the sensor inlet is clear and the filter is clean.
- **No Power:** Check battery level and recharge if necessary. Ensure the charging cable and adapter are properly connected.
- **Alarms Not Functioning:** Verify alarm settings (low and high points) in the menu.
- **Device Unresponsive:** Try restarting the device. If issues persist, consider using the 'Restore settings' function (requires password).

12. Specifications

Feature	Description
Brand	ATO
Model Number	GD200-N2
Style	Digital
Power Source	Battery Powered
Item Weight	0.7 Pounds
Alarm Type	Sound, Light, Vibration
Operating Humidity	Up to 95% (non-condensing)
Upper Temperature Rating	50 Degrees Celsius
Unit Count	1.0 Count

13. Support

For any questions, issues with the product, or to request an electronic user manual, please contact ATO customer support. Calibration kits are available for purchase separately if needed.