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Xetron VGW-10X

Xetron VGW-10X Digital Micron Vacuum Gauge User Manual

1. Introduction

The Xetron VGW-10X is a high-precision digital micron vacuum gauge designed for professional use in refrigeration and air conditioning systems. This device provides accurate deep vacuum measurements with a resolution of 1 micron across a wide range of 0 to 19,000 microns. Featuring Bluetooth connectivity, it allows for smart app control, data browsing, report export, and offline recording via your smartphone or tablet. The VGW-10X also includes functions for measuring ambient temperature and water saturation temperature, aiding in the assessment of H2O saturation. With eight selectable vacuum units and a long-lasting rechargeable lithium battery, the VGW-10X offers versatility and reliability for various applications. This manual provides detailed instructions for the proper setup, operation, and maintenance of your device.

2. Safety Information

Please read all safety instructions carefully before operating the Xetron VGW-10X Digital Micron Vacuum Gauge. Failure to follow these instructions may result in injury or damage to the device.

- Always wear appropriate personal protective equipment (PPE) when working with refrigeration systems.
- Ensure the device is securely connected to the system before taking measurements.
- Do not expose the device to extreme temperatures, direct sunlight, or corrosive environments.
- Avoid dropping or subjecting the device to severe impacts.
- Keep the device away from water and moisture to prevent electrical hazards.
- Only use the provided charging cable and power adapter.
- Do not attempt to disassemble or repair the device yourself. Contact customer support for assistance.

3. Package Contents

Verify that all items listed below are included in your package. If any items are missing or damaged, please contact customer support.

Figure 3.1: Xetron VGW-10X Package Contents

- Vacuum meter x 1
- Metal fitting x 1
- Filter cotton x 3
- User manual x 1
- O-ring x 2
- Protective bag x 1

4. Product Overview

Familiarize yourself with the components and display elements of the Xetron VGW-10X Digital Micron Vacuum Gauge.

Figure 4.1: Xetron VGW-10X Display Elements

Number	Element	Function
1	Icon [REC]	Indicates when recording is enabled.
2	Vacuum Display	Shows the currently measured vacuum value. Units include microns, mTorr, inHg, Pa, Torr, kPa, mbar, psia.
3	Icon [Bluetooth]	Indicates an active Bluetooth connection.
4	Battery Icon	Displays the current battery capacity: >75%, >50%, >25%, >5%, <5%.
5	Temperature Display	Shows the currently measured temperature. Parameters include TH2O (evaporation temperature of water), Tamb (ambient temperature), and ΔT (Tamb-TH2O). Units can be set to °C or °F.

5. Setup

Follow these steps for initial setup of your VGW-10X vacuum gauge.

1. **Charge the Device:** Before first use, fully charge the built-in lithium battery using the provided charging cable. A full charge can provide up to 20 hours of operation.
2. **Attach the Fitting:** Screw the SAE 1/4" metal fitting onto the vacuum gauge securely. Ensure the O-ring is properly seated to prevent leaks.
3. **Power On:** Press and hold the power button (usually located on the side or front) for a few seconds until the display illuminates.
4. **Unit Selection:** Briefly press the unit button (if available, or refer to the app for selection) to cycle through the available vacuum units (microns, mTorr, inHg, Pa, Torr, kPa, mbar, psia) and temperature units (°C/°F).

6. Operating Instructions

This section outlines the basic operation of the vacuum gauge for taking measurements.

Figure 6.1: Clear LCD Screen Reading

1. **Connect to System:** Connect the vacuum gauge (with the attached fitting) to the vacuum pump or the system port where you intend to measure vacuum. Ensure all connections are tight to prevent leaks.

2. **Start Vacuum Pump:** Activate your vacuum pump to begin evacuating the system.
3. **Monitor Readings:** The vacuum gauge will display real-time vacuum values. The response is fast and sensitive, allowing for precise monitoring of deep vacuum levels.
4. **Observe Temperature:** The device also displays ambient temperature (Tamb) and water saturation temperature (TH2O), which can help in determining the presence of moisture in the system.
5. **Power Off:** After completing your measurements, disconnect the gauge from the system and press and hold the power button to turn off the device.

7. Bluetooth APP Control

The Xetron VGW-10X can be connected to a smartphone or tablet via Bluetooth for enhanced monitoring and data management.

Figure 7.1: Xetron Mobile Application Interface

- **Download the App:** Search for the Xetron vacuum gauge app on the App Store (for iOS devices) or Google Play (for Android devices).
- **Enable Bluetooth:** Ensure Bluetooth is enabled on your smartphone or tablet and on the VGW-10X device.

- **Connect to Device:** Open the app and follow the on-screen instructions to search for and connect to your VGW-10X. The Bluetooth icon on the gauge display will illuminate when connected.
- **Monitor Data:** The app allows you to browse real-time measurement data, view graphs, and monitor the progress of your vacuum process.
- **Export Reports:** Generate and export measurement reports directly from your smartphone or tablet.
- **Offline Recording:** Utilize the offline recording function to log data even when not actively connected to the app, allowing for later review.

8. Advanced Features

8.1. Understanding H2O Saturation

The VGW-10X can help assess the physical status of H2O in a cooling system by comparing ambient temperature and water saturation temperature.

Figure 8.1: H2O Status in Cooling System

By measuring both ambient temperature (Tamb) and the water saturation temperature (TH2O) corresponding to the vacuum level, the gauge can automatically determine if H2O is likely in a liquid or vapor state within the system. This

feature is crucial for ensuring thorough dehydration during evacuation processes.

8.2. Temperature Compensation

The device incorporates an advanced ambient compensating design to maintain accuracy across varying temperature conditions.

Figure 8.2: Temperature Compensation for Accuracy

This feature automatically compensates for temperature fluctuations, ensuring consistent and reliable vacuum measurements without the need for manual adjustments by the user.

9. Maintenance

Proper maintenance ensures the longevity and accuracy of your Xetron VGW-10X.

- **Cleaning:** Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the sensor port is free of debris.
- **Sensor Protection:** Always keep the protective cap on the sensor port when the device is not in use to prevent contamination.

- **O-Rings:** Regularly inspect the O-rings on the fitting for wear or damage. Replace them if necessary to maintain a leak-free connection.
- **Battery Care:** Recharge the battery regularly, even if the device is not used frequently, to maintain battery health. Avoid fully discharging the battery for extended periods.
- **Storage:** Store the device in its protective bag in a cool, dry place away from direct sunlight and extreme temperatures.

10. Troubleshooting

Refer to the table below for common issues and their potential solutions.

Issue	Possible Cause	Solution
Device does not power on.	Low battery or device malfunction.	Charge the device fully. If it still doesn't power on, contact customer support.
Inaccurate vacuum readings.	Sensor contamination, leaks in the system, or incorrect unit selection.	Ensure the sensor port is clean. Check all connections for leaks. Verify the correct vacuum unit is selected.
Bluetooth connection fails.	Bluetooth not enabled, device out of range, or app issue.	Ensure Bluetooth is active on both devices. Move closer to the gauge. Restart the app and the gauge.
Vacuum decays rapidly after pump is off.	Leak in the system or gauge connection.	Perform a leak test on the entire system, including all connections to the gauge. Ensure O-rings are intact and fittings are tight.
Display is dim or flickering.	Low battery.	Recharge the device battery.

11. Specifications

Technical specifications for the Xetron VGW-10X Digital Micron Vacuum Gauge.

Parameter	Value
Manufacturer	Xetron
Model Number	VGW-10X
Product Reference	XT-VGW-10X-EU
Dimensions (L x W x H)	12.5 x 3.5 x 2.8 cm
Weight	290 grams
Material	Metal
Vacuum Measurement Range	0 to 19,000 microns
Vacuum Resolution	1 micron
Vacuum Units	inHg, Torr, psia, mbar, mTorr, Pa, micron, kPa
Temperature Measurement	Ambient Temperature (Tamb), Water Saturation Temperature (TH2O)

Parameter	Value
Temperature Units	°C / °F
Connectivity	Bluetooth Smart APP
Battery Type	Rechargeable Lithium Battery (1 included)
Battery Life	Up to 20 hours (on a full charge)
Fitting	SAE 1/4"

12. Warranty and Support

Xetron provides a one-year warranty for the VGW-10X Digital Micron Vacuum Gauge, covering manufacturing defects from the date of purchase. Additionally, we offer lifetime customer support to assist you with any questions or issues you may encounter.

For warranty claims, technical assistance, or any other inquiries, please contact Xetron customer support through the contact information provided on our official website or your purchase platform. Please have your product model number (VGW-10X) and purchase details ready when contacting support.