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Apera Instruments AI531

Apera Instruments PH820 Benchtop pH Meter Kit

INSTRUCTION MANUAL

Product Overview

The Apera Instruments PH820 Benchtop pH Meter Kit is designed for reliable and accurate pH measurements in laboratory settings. It features advanced functionalities including intelligent calibration, data management, and a durable, water-resistant structure. This manual provides detailed instructions for proper use and care of your PH820 meter.



Figure 1: Apera Instruments PH820 Benchtop pH Meter Kit, showing the main unit, electrode, temperature probe, and electrode arm.

Key features of the PH820 include:

- **High Accuracy:** Achieves ± 0.002 pH ± 1 digit precision.
- **Premium Electrode:** Equipped with the Swiss LabSen 211 Glass-body pH Electrode for stable and accurate measurements.
- **Intelligent Calibration:** Supports 1 to 5 points auto-calibration with calibration guide and reminder functions.
- **Self-Diagnosis:** Assists in identifying and resolving common calibration issues and monitors electrode health.
- **Data Management:** GLP-compliant data storage for up to 500 groups with USB data output and PC software support.
- **Durable Design:** IP54 water-resistant construction.

Setup

Unpacking and Component Check

Carefully unpack all components from the kit. Verify that the following items are present:

- PH820 pH Meter Unit
- LabSen 211 pH Electrode
- Temperature Probe
- Flexible Electrode Arm and Holder
- USB Cable
- PC-Link Software Flash Drive
- Power Adaptor (Input: 120V AC 60Hz; Output: 9V 300mA)
- Calibration Solutions (4.00 pH, 7.00 pH, 10.01 pH)

Connecting Components

Connect the electrode, temperature probe, and power adapter to the corresponding ports on the back of the PH820 meter unit. Ensure all connections are secure.



Figure 2: Rear view of the PH820 meter, highlighting the REF, pH/mV, TEMP, RS232, and DC 9V input ports.

1. **Electrode Connection:** Plug the LabSen 211 pH Electrode into the port labeled "pH/mV".
2. **Temperature Probe Connection:** Insert the temperature probe into the port labeled "TEMP".
3. **Power Connection:** Connect the power adapter to the "DC 9V" port and then to a power outlet.
4. **Electrode Arm Assembly:** Attach the flexible electrode arm and holder to the side of the meter unit for convenient electrode placement during measurements.

Operating Instructions

Basic pH Measurement

1. Power on the meter by pressing the power button.
2. Rinse the electrode with distilled water and gently blot dry.
3. Immerse the electrode and temperature probe into the sample solution. Ensure the electrode tip is fully submerged.
4. Wait for the reading on the large LCD to stabilize. The meter displays pH and temperature simultaneously.
5. Record the stable reading.

pH Calibration

The PH820 supports 1 to 5 points automatic calibration. Regular calibration ensures measurement accuracy.

1. Prepare the standard calibration solutions (4.00 pH, 7.00 pH, 10.01 pH are included).
2. Press the **CAL** button to enter calibration mode.
3. Rinse the electrode and immerse it into the first calibration solution (e.g., 7.00 pH).
4. The meter will automatically recognize the solution and begin calibration. Wait for the stability icon to appear.
5. Once stable, the meter will prompt for the next calibration point. Repeat the rinsing and immersion process for

subsequent solutions.

6. The self-diagnosis function will provide feedback on the calibration process and electrode condition, including slope data.
7. Exit calibration mode once all desired points are completed.

Data Management

The PH820 allows for GLP data management, storing up to 500 groups of data. Data can be output via USB to a PC using the provided PC-Link software (Windows-based system only). Auto-timing data logging can also be configured.

ORP Measurement (Optional)

The PH820 can measure Oxidation-Reduction Potential (ORP) when an ORP electrode (e.g., 301Pt-C, sold separately) is connected to the pH/mV port. Refer to the ORP electrode's specific instructions for calibration and measurement procedures.

Maintenance

Electrode Care

Proper care of the LabSen 211 pH Electrode is crucial for maintaining accuracy and extending its lifespan.





Figure 3: Close-up view of the LabSen 211 pH Electrode, showing its glass body and sensor tip.

- **Rinsing:** Always rinse the electrode with distilled or deionized water before and after each measurement.
- **Storage:** Store the electrode in its protective cap filled with a suitable electrode storage solution (or 3M KCl solution). *Never store the electrode dry or in distilled water.*
- **Cleaning:** If the electrode becomes contaminated or readings are sluggish, clean it according to the electrode's specific cleaning instructions.
- **Bubble-free Tip:** The LabSen 211 features an impact-resistant and bubble-free sensor tip. Ensure no air bubbles are trapped around the sensor during measurement.

Meter Care

The PH820 meter unit is IP54 water-resistant, meaning it is protected from dust and splashing water. However, it should not be submerged. Keep the meter clean and dry. Use a soft, damp cloth to wipe the surface. Avoid using abrasive cleaners or solvents.

Troubleshooting

The PH820 features a self-diagnosis function that can assist in identifying and fixing common problems, particularly during calibration. Refer to the meter's display for diagnostic messages.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Unstable Readings	Dirty electrode; air bubbles; insufficient sample volume; expired calibration.	Clean electrode; ensure no bubbles; use adequate sample; recalibrate.
Calibration Failure	Incorrect buffer solution; contaminated electrode; electrode aging.	Use fresh, correct buffers; clean electrode; check electrode slope data (self-diagnosis) for replacement indication.
No Display/Power	Power adapter issue; loose connection.	Check power adapter and outlet; ensure all cables are securely connected.
Inaccurate Readings	Electrode not calibrated; temperature not compensated; damaged electrode.	Perform calibration; ensure temperature probe is functioning; inspect electrode for damage.



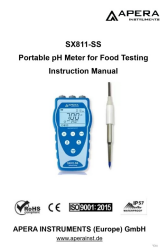



For persistent issues not resolved by the above, please contact Apera Instruments customer support.

Specifications

Parameter	Value
Model Number	AI531
pH Accuracy	±0.002 pH±1 digit
Calibration Points	1 to 5 points (Auto.)
Data Storage	500 groups (GLP compliant)
Data Output	USB (PC software support)
Water Resistance	IP54
Power Input	120V AC 60Hz
Power Output	9V 300mA
Package Dimensions	10.67 x 10.2 x 6.65 inches
Weight	6.69 Pounds
Certifications	CE, RoHS, ISO 9001:2015

Warranty and Support

Apera Instruments products are manufactured under an ISO 9001:2015 certified quality system, ensuring high standards of production. For specific warranty information and technical support, please refer to the warranty card included with your product or visit the official Apera Instruments website. You may also contact their customer service directly for assistance with product operation, troubleshooting, or parts replacement.

 <p>APERA PH60Z-WW Smart pH Meter for Wastewater, Suspensions, Emulsions, and other Dirty Liquid User Manual</p> <p>APERA INSTRUMENTS (Europe) GmbH www.aperaintl.de</p>	<p>Apera PH60Z-WW Smart pH Meter User Manual</p> <p>Comprehensive user manual for the Apera PH60Z-WW Smart pH Meter, covering setup, calibration, measurement, troubleshooting, and specifications for wastewater, suspensions, and emulsions.</p>
 <p>APERA PH60Z-HT Smart pH Meter for High Temp. Solutions and Caustic Solutions User Manual</p> <p>APERA INSTRUMENTS (Europe) GmbH www.aperaintl.de</p>	<p>PH60Z-HT Smart pH Meter User Manual - Apera Instruments</p> <p>User manual for the Apera Instruments PH60Z-HT Smart pH Meter, detailing its features, operation, calibration, maintenance, and troubleshooting for high temperature and caustic solutions.</p>
 <p>APERA SX811-SS Portable pH Meter for Food Testing Instruction Manual</p> <p>APERA INSTRUMENTS (Europe) GmbH www.aperaintl.de</p>	<p>Apera SX811-SS Portable pH Meter for Food Testing: Instruction Manual & Specifications</p> <p>Comprehensive instruction manual and technical specifications for the Apera SX811-SS portable pH meter, designed for accurate food testing. Learn about features, calibration, setup, USB communication, and troubleshooting.</p>
 <p>APERA PH60Z-MS Smart pH Meter für Kleinvolumige Messungen Bedienungsanleitung</p> <p>APERA INSTRUMENTS (Europe) GmbH www.aperaintl.de</p>	<p>Apera PH60Z-MS Smart pH-Meter: Bedienungsanleitung für Kleinvolumenmessungen</p> <p>Diese Bedienungsanleitung bietet detaillierte Informationen zur Verwendung des Apera PH60Z-MS Smart pH-Meters, einschließlich Kalibrierung, Messung, Wartung und Fehlerbehebung für präzise pH-Messungen in kleinen Volumina.</p>
 <p>APERA PH700 Benchtop pH Meter Instruction Manual</p> <p>APERA INSTRUMENTS (Europe) GmbH www.aperaintl.de</p>	<p>Apera PH700 Benchtop pH Meter Instruction Manual</p> <p>Comprehensive instruction manual for the Apera PH700 Benchtop pH Meter, covering features, specifications, operation, calibration, maintenance, and troubleshooting.</p>
 <p>APERA PH60-HT pH Meter for High Temp. Solutions and Caustic Solutions User Manual</p> <p>APERA INSTRUMENTS (Europe) GmbH www.aperaintl.de</p>	<p>Apera PH60-HT pH Meter User Manual: High Temperature & Caustic Solutions</p> <p>Comprehensive user manual for the Apera PH60-HT pH Meter, designed for accurate pH measurement in high temperature (up to 140°C) and caustic solutions. Covers kit contents, operation, calibration, electrode care, parameter settings, technical specifications, troubleshooting, and warranty.</p>

