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Apera Instruments AI3101

Apera Instruments LabSen 211 pH Electrode User Manual

Model: AI3101

PRODUCT OVERVIEW

The Apera LabSen 211 pH Electrode is engineered with proprietary sensor technology and premium materials from Switzerland, making it ideal for professional lab and field pH measurements in general water solutions. Its robust design ensures stable and accurate readings.



Figure 1: Apera LabSen 211 Glass-Body pH Electrode

Key Features:

- **Proprietary pH Sensor Technology:** Utilizes advanced technology and premium materials from Switzerland for superior performance.
- **Unique LabSen Blue Hemispherical Glass Membrane:** Offers faster response rates, improved repeatability, and enhanced impact resistance, being 10 times stronger than traditional glass membranes.
- **Long-Life Reference System:** Designed to improve the stability of the reference electrode and prolong its service life.
- **TRIS Buffer Compatible:** Ensures accurate measurements even in complex buffer solutions.
- **No Air Bubbles:** Features a Swiss blue gel electrolyte that prevents air bubbles from forming inside the glass membrane, ensuring consistent stability.

SETUP AND OPERATION

This section provides guidance on setting up and operating your LabSen 211 pH Electrode for optimal performance.

Initial Setup:

1. **Unpacking:** Carefully remove the LabSen 211 pH Electrode from its packaging.
2. **Inspection:** Inspect the electrode for any visible damage. Ensure the glass membrane and body are intact.
3. **Connection:** Connect the standard BNC connector of the electrode to a compatible pH meter.
4. **Temperature Compensation:** Note that this electrode does not have a built-in temperature sensor. For accurate readings, use a separate temperature probe (e.g., Apera MP500) for Automatic Temperature Compensation (ATC) or manually input the temperature into your pH meter.

Operating Principles and Applications:

The LabSen 211 pH Electrode is designed for a wide range of applications. The following video provides an overview of its features and diverse uses:

Video: Introducing LabSen pH Electrodes. This video highlights the advanced sensor technology and manufacturing techniques from Switzerland, showcasing the electrode's strength, unique gel electrolyte, and diverse applications across various industries.

1. General Water Solutions:

Ideal for pools, wastewater, hydroponics, aquariums, beverage, aquaculture, environmental monitoring, TRIS buffer, titration, etc. The low-resistance glass membrane and patented pH/Temp. rapid sensing structure ensure reliable measurements.



Figure 2: Applicable fields for LabSen 211 pH Electrode.

2. Low Ion Concentration Solutions:

The exquisite structure ensures fast reading stabilization for low ion concentration solutions such as RO water, distilled water, deionized water, storm water, and ground water.

3. Strong Acid / Basic, High Temp, Complex Solutions:

Special HF and HA glass membranes are designed for strong acid, strong base, and high-temperature solutions, including those containing hydrofluoric acid, used in electroplating, battery electrolyte, and industrial wastewater.

4. Micro-volume Samples:

For testing micro-volume samples in test tubes, microplates, NMR tubes, cuvettes, and centrifuge tubes, an ultra-slim yet strong glass membrane with fast response is required.

5. Solid & Semi-solid Samples and Flat Surface:

Direct pH measurement of solid, semi-solid, and flat media like cheese, meats, fruits, dough, soil, sushi, skin, textiles, paper, and fabrics requires different types of spear and flat electrodes.

6. Viscous & Dairy Samples:

For viscous and dairy samples such as coatings, resin, syrup, chocolates, sauce, milk, yogurt, and cream, the pre-pressurized reference system and Protelyte electrolyte provide the best solution to prevent junction clogs.

MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your LabSen 211 pH Electrode.

- **Storage:** Always store the electrode in its protective cap with the recommended storage solution to keep the glass membrane hydrated.
- **Cleaning:** Regularly clean the electrode tip with distilled water after each use. For stubborn residues, refer to specific cleaning solutions recommended by Apera Instruments.
- **Electrolyte Level:** Ensure the electrolyte level is always above the reference wire. Refill if necessary with the appropriate electrolyte solution.
- **Calibration:** Calibrate the electrode regularly according to your pH meter's instructions and application requirements to maintain accuracy.

TROUBLESHOOTING

If you encounter issues with your LabSen 211 pH Electrode, consider the following common troubleshooting steps:

- **Unstable Readings:** Ensure the electrode is properly hydrated. Check for air bubbles in the electrolyte. Verify the temperature compensation settings.
- **Slow Response:** Clean the electrode tip. Re-calibrate the electrode. Ensure the sample temperature is stable.
- **Inaccurate Readings:** Perform a fresh calibration with new buffer solutions. Check the integrity of the electrode's glass membrane. Ensure the sample is well-mixed and free of interferences.
- **No Reading:** Check the BNC connection to the pH meter. Ensure the pH meter is powered on and functioning correctly.

For persistent issues, please contact Apera Instruments customer support.

SPECIFICATIONS

Specification	Detail
Product Dimensions	6.3 x 0.11 x 0.11 inches; 9 ounces
Item Model Number	AI3101
Date First Available	October 9, 2017
Manufacturer	Apera Instruments
ASIN	B0769XQNF5
Country of Origin	China

WHAT'S IN THE BOX

- LabSen 211 pH Electrode

WARRANTY & SUPPORT

Apera Instruments is committed to providing excellent customer service and product support.

- **Warranty:** The LabSen 211 pH Electrode comes with a **6-month manufacturer warranty**.
- **After-Sales Service:** Apera Instruments offers worry-free after-sales service, based out of Columbus, Ohio. Support is available via online chat, phone calls, and emails.





WORRY-FREE AFTER-SALES SERVICE



Based out of
Columbus, Ohio



We are here
to support your success
(online chat/phone calls/emails)



6-month
manufacturer warranty
for the electrode

Figure 3: Apera Instruments Worry-Free After-Sales Service.

