Apera Instruments AI311

Apera Instruments AI311 PH60 Waterproof pH Pocket Tester Kit User Manual

Brand: Apera Instruments

Model: AI311

1. Introduction

The Apera Instruments PH60 Pocket pH Tester is designed for reliable and easy pH measurement in general water solutions. This includes applications such as hydroponics, horticulture, aquaculture, pools & spas, water treatment, cooling towers, environmental monitoring, beverage making, and educational settings. The meter features a replaceable pH probe (PH60-E) specifically for general water solutions. It is also compatible with three other types of pH electrodes and an ORP probe (sold separately) for specialized applications like solid samples and surface tests.

Note: A few drops of 3M KCL liquid (included in the kit) should be added to low ion-strength test samples (e.g., distilled water or RO water) to significantly accelerate stabilization without affecting the pH reading.

Image: Close-up view of the high-quality glass pH sensor bulb, designed for accuracy and stability.

Image: Visual representation of diverse applications including hydroponics, pools, brewing, drinking water, water treatment, aquariums, and aquaculture.

2. What's in the Box

Your Apera Instruments PH60 Waterproof pH Pocket Tester Kit includes the following items:

- PH60 Pocket pH Tester
- Replaceable pH Probe (PH60-E)
- Ready-to-use pH calibration solutions (pH 4.00, pH 7.00, pH 10.01)
- Calibration bottles
- 3M KCL storage solution
- AAA batteries (4 included)
- Lanyard
- Rugged portable carrying case
- User Manual & Quick Start Guide

Image: The complete PH60 pH Tester Kit, showing the meter, calibration solutions, bottles, and accessories neatly organized in its hard-shell case.

3. Setup

3.1 Battery Installation

The PH60 tester requires 4 AAA batteries (included). To install or replace batteries:

1. Unscrew the battery cap at the top of the meter.
2. Insert the 4 AAA batteries, ensuring correct polarity (+/-).
3. Securely screw the battery cap back on.

Image: The top section of the PH60 pH tester with the cap removed, revealing the battery compartment for AAA batteries.

3.2 Initial Probe Preparation

Before first use or if the tester has not been used for a long time (over 1 month):

1. Pull out the battery insulation slip (if present) and remove the probe cap.
2. Rinse the probe thoroughly with pure water (preferably distilled or deionized water, RO water is acceptable). Shake off excess water.
3. If the tester hasn't been used for a long time (over 1 month), soak the probe in the 3M KCL soaking solution (included in the kit) for 15 minutes.
4. Proceed to calibrate the meter before testing.

Video: Apera Instruments PH60 pH Tester Quick Start Tutorial. This video demonstrates the initial preparation steps, including removing the battery insulation slip, rinsing the probe, and soaking it in KCL solution if necessary (0:13 - 0:55).

4. Operating Instructions

4.1 pH Calibration

The PH60 tester features 1-3 point automatic calibration with auto-buffer recognition. Always calibrate pH 7.00 first. If you need to calibrate pH 4.00 or pH 10.01, do so immediately after pH 7.00 calibration. Do NOT turn the meter off between pH 7.00 and pH 4.00/10.01 calibrations.

1. Pour pH buffer solutions (pH 4.00, pH 7.00, pH 10.01) into the corresponding calibration vials to about half volume.
2. Rinse the probe in pure water and shake off excess water.
3. Short press the power button to turn on the tester.
4. Dip the probe into the pH 7.00 buffer solution. Make a quick stir, then let it stand.
5. Long press the 'CAL' button to enter calibration mode. The screen will turn green.
6. Wait for the reading to stabilize (a smiley icon will appear on the screen), then short press 'CAL' to finish the first point calibration. The tester will return to measurement mode, and an 'M' icon will appear at the bottom left, indicating a successful first-point calibration.
7. Without turning off the tester, rinse the probe and repeat steps 4-6 for pH 4.00 buffer solution. An 'L' icon will appear for successful 2-point calibration.
8. Without turning off the tester, rinse the probe and repeat steps 4-6 for pH 10.01 buffer solution. An 'H' icon will appear for successful 3-point calibration.

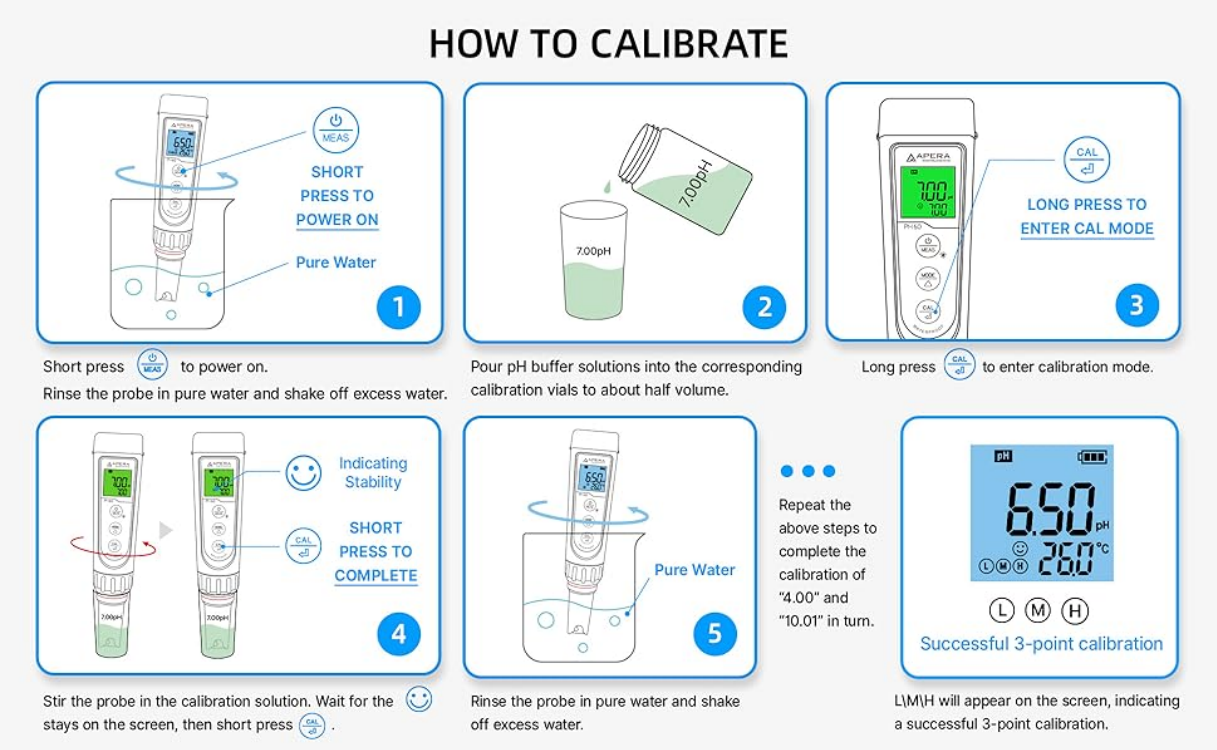

Image: Detailed infographic illustrating the 3-point calibration process for the PH60 pH tester.

Video: Apera Instruments PH60 pH Tester Quick Start Tutorial. This segment demonstrates the pH calibration process (0:56 - 4:26).

4.2 pH Measurement

To take a pH measurement:

1. Short press the power button to turn on the tester.
2. Rinse the probe in pure water and shake off excess water.
3. Insert the probe into your sample solution, make a quick stir, and hold still.
4. Take the reading as the measurement when it is fully stabilized (a smiley icon appears and stays on screen).
5. If the Auto-Hold function is turned on (in parameter setting P4), the reading will be automatically locked when it's stable for more than 10 seconds. The 'HOLD' icon will stay on. Short press the 'CAL' button to cancel Auto-Hold and continue measuring.
6. Short press the 'MODE' button to switch to mV mode, which is for ORP testing or technical analysis (an ORP probe is needed for ORP measurements).

Image: A hand holding the PH60 pH tester, displaying a pH reading of 7.00 and a temperature of 25.0°C.

Video: Apera Instruments PH60 pH Tester Quick Start Tutorial. This segment demonstrates the pH measurement process (4:26 - 5:33).

5. Maintenance

5.1 Probe Cleaning

The accuracy of the tester depends on the cleanliness of the probe. Always thoroughly rinse off the probe before and after each measurement with pure water.

- For tough contaminants, detach the sensor shield.
- Soak the probe in Apera probe cleaning solution (SKU: AI1166) or detergent water for 30 minutes.
- Use a soft brush to gently remove contaminants.
- Rinse the probe off with pure water and reattach the sensor shield.
- After cleaning, soak the probe in 3M KCL soaking solution for 1 to 2 hours.
- Re-calibrate the tester before using it again.

Video: Apera Instruments PH60 pH Tester Quick Start Tutorial. This segment demonstrates probe cleaning procedures (5:33 - 6:36).

5.2 Probe Storage

Proper storage is crucial for maintaining probe longevity and accuracy.

- **For regular storage (daily or weekly usage):** Ensure there are a few water droplets inside the probe cap to maintain humidity. Close the probe cap tightly to prevent drying out.
- **For long-term storage (no use >1 month):** Store the probe in the 3M KCL soaking solution.

IMPORTANT: NEVER store the probe in pure water (like tap, RO, distilled, or deionized water) as they could damage the pH sensor. If this happens, immediately soak the pH probe in the 3M KCL soaking solution overnight to restore. Then re-calibrate it before using. Pure water is only for rinsing off the probe, NOT for storage.

Video: Apera Instruments PH60 pH Tester Quick Start Tutorial. This segment demonstrates proper probe storage (6:36 - 7:29).

6. Troubleshooting

Here are some common issues and their solutions:

- **Water droplets inside the electrode cap:** This is normal for a new product. It is added before the product leaves the factory to maintain the sensitivity of the electrode.
- **Inaccurate or unstable readings:** Ensure the probe is clean and properly calibrated. If the probe has been stored dry, soak it in 3M KCL solution for at least 15 minutes before re-calibrating.
- **Meter not powering on or display issues:** Check if the AAA batteries are correctly installed and have sufficient charge. Replace batteries if necessary.
- **Calibration failure:** Ensure you are using fresh, uncontaminated calibration solutions. Always calibrate pH 7.00 first, then proceed with pH 4.00 or pH 10.01 without turning off the meter.

7. Specifications

Feature	Value
Product Dimensions	7 x 1.6 x 1.6 inches
Item Weight	10 ounces
Item Model Number	AI311
Batteries	4 AAA batteries required (included)
pH Accuracy	±0.01 pH
pH Range	-2.00 to 16.00 pH
Temperature Range	32 to 122°F (0 to 50°C)
Auto Power-Off	8 minutes without operation

8. Warranty and Support

Apera Instruments is committed to providing reliable products and ongoing support to ensure you achieve the most accurate results. For warranty information, technical assistance, or any product-related inquiries, please refer to the official Apera Instruments website or contact their customer support directly. Contact details are typically provided on the product packaging or within the full user manual.