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› Elitech PHM-230 Professional pH Pen Meter Instruction Manual

Elitech PHM-230

Elitech PHM-230 Professional pH Pen Meter Instruction Manual

Model: PHM-230

IMPORTANT SAFETY INFORMATION

Please read this manual thoroughly before operating the Elitech PHM-230 pH Pen Meter. Retain this manual for future reference.

- Do not immerse the entire meter in water; only the electrode tip is waterproof.
- Keep the electrode clean and moist. Always replace the protective cap after use.
- Store calibration solutions properly, away from direct sunlight and extreme temperatures.
- Handle the glass electrode with care to prevent damage.
- Keep out of reach of children.

PRODUCT OVERVIEW

The Elitech PHM-230 is a professional digital pH pen meter designed for accurate measurement of pH and temperature in various solutions. It features automatic temperature compensation (ATC) and a three-point calibration system.

Components Included

What's in the Package

- ① pH Pen
- ② Plastic Case
- ③ 3 Bottles of Standard Calibration Solution
- ④ instruction book
- ⑤ AAA ×2



Image: The Elitech PHM-230 pH meter, calibration solutions, and batteries neatly arranged in its protective plastic case.

- PHM-230 pH Pen Meter (1 unit)
- Plastic Carrying Case (1 unit)
- Standard Calibration Solutions (3 bottles: pH 4.00, pH 6.86, pH 9.18)
- AAA Batteries (2 units, 1.5V)
- User Manual (1 unit)

Key Features

- **Precision Calibration System:** Three-point push-button calibration with auto-buffer recognition for accurate measurements.
- **Automatic Temperature Compensation (ATC):** Ensures reliable readings in varying temperature environments.
- **Advanced Electrode Design:** Double-junction structure with enhanced reference gel for extended electrode lifespan.
- **User-Friendly Display:** Large, dual-line LCD screen shows pH and temperature values, along with calibration status indicators.
- **Wide Application:** Suitable for hydroponics, agriculture, drinking water, aquariums, and industrial solutions.

Measuring Range:
0~14

pH Resolution:
0.01

pH Accuracy:
±0.05



Image: The Elitech PHM-230 pH meter showing a pH reading of 6.54 and a temperature of 27.1°C.

SETUP

Battery Installation

1. Unscrew the battery compartment cover located at the top of the meter.
2. Insert the two 1.5V AAA batteries, ensuring correct polarity (+/-).
3. Securely replace the battery compartment cover.

Initial Preparation

1. Remove the protective cap from the electrode tip.
2. Rinse the electrode with distilled or deionized water.
3. Gently blot dry with a clean tissue. Do not rub.

OPERATION

Powering On/Off

- Press the **ON/OFF** button to turn the meter on.
- Press and hold the **ON/OFF** button for a few seconds to turn the meter off.

Taking a Measurement



Image: The Elitech PHM-230 pH meter being used to test the pH of a nutrient solution in a hydroponic system, showing a reading of 3.44 pH and 27.1°C.

1. Ensure the meter is clean and calibrated.
2. Immerse the electrode tip into the solution to be tested. Ensure the liquid level is above the glass bulb.
3. Gently stir the meter and wait for the reading to stabilize on the display.
4. Record the pH and temperature values.
5. After measurement, rinse the electrode with distilled water and replace the protective cap.

Testing nutrient solution pH level is crucial in hydroponics because it affects nutrient availability to growing plants.



Upgraded pH Probe

Super stable, values don't jump all over the place.

Clear Digital Readout

Digital backlight design for easy reading at night.

Image: The Elitech PHM-230 pH meter showing its measuring range (0-14), pH resolution (0.01), and pH accuracy (± 0.05).

Automatic Temperature Compensation (ATC)

The PHM-230 automatically adjusts pH readings based on the solution's temperature, ensuring accuracy without manual temperature correction.

Red Light Alarm

Comes with 3 Bottles of Standard Calibration Solution

Discard calibration powder



Image: The Elitech PHM-230 pH meter showing a red light alarm on its display, indicating that the measured pH is either less than 3.5 or greater than 11.5, signifying a strong acid or strong alkaline environment.

When the pH reading is less than 3.5 or greater than 11.5, the meter will emit a red light alarm. This indicates that the environment is strongly acidic or strongly alkaline.

Auto-Off Function

Red Light alarm of Excessive acidity or alkalinity

When the pH is less than 3.5 or greater than 11.5, and the pen determines that the current environment is strong acid or strong alkaline, the screen will emit a red light alarm.



Image: The Elitech PHM-230 pH meter being used to test a solution, highlighting its 3-point auto calibration, LED backlight for dark environments, and 10-minute auto-off feature to conserve battery life.

The meter is equipped with a 10-minute auto-off function to conserve battery life. If no operation is detected within 10 minutes, the meter will automatically power down. This setting is retained for the next startup.

CALIBRATION

Regular calibration ensures the accuracy of your pH meter. The PHM-230 supports 3-point automatic calibration using standard buffer solutions (pH 4.00, pH 6.86, pH 9.18).

Video: An official guide demonstrating the operation and calibration procedure for the Elitech PHM-230 pH Meter.

Calibration Procedure (3-Point)

One pH Meter, All Scenarios

The Two-in-One Guide for Home & Professional Use



**Hydroponics/Soilless
Cultivation**



**Drinking Water Safety
Self-Testing**



Home/Office Aquariums



**Chemical Industry/Electroplating
Solution Monitoring**



Pet Product Testing

Image: The Elitech PHM-230 pH meter immersed in three separate beakers containing pH 4.00 (pink), pH 6.86 (green), and pH 9.18 (blue) calibration buffer solutions.

1. Power on the meter.
2. Press and hold the **CAL** button to enter calibration mode. The display will show 'CAL'.
3. Immerse the electrode (glass bulb fully) into the first standard buffer solution (e.g., pH 6.86).
4. Wait for the reading to stabilize. The meter will automatically recognize the buffer and save the calibration.
5. Rinse the electrode with distilled water for at least 1 minute.
6. Repeat steps 3-5 for the second standard buffer solution (e.g., pH 4.00).
7. Repeat steps 3-5 for the third standard buffer solution (e.g., pH 9.18).
8. After completing all three points, the meter will automatically exit calibration mode and return to measurement mode. Calibration is saved.

MAINTENANCE

Electrode Care and Storage

- Always keep the electrode clean. Rinse with distilled water after each use.
- For long-term storage, ensure the electrode is kept moist. The protective cap should contain a small amount of electrode storage solution or pH 4 buffer solution. Do not store in distilled water.
- If the electrode becomes dry, soak it in electrode storage solution or pH 4 buffer for at least 30 minutes before use.

Cleaning

- Wipe the meter body with a clean, damp cloth. Do not use abrasive cleaners or solvents.
- If the electrode is contaminated with oil or grease, clean it with a mild detergent solution, then rinse thoroughly with distilled water.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Inaccurate readings	Uncalibrated meter, dirty electrode, expired buffer solutions, dry electrode.	Calibrate the meter, clean the electrode, use fresh buffer solutions, rehydrate electrode.
No display/Meter won't turn on	Dead batteries, incorrect battery installation.	Replace batteries, check battery polarity.
Slow response time	Dry electrode, contaminated electrode.	Rehydrate electrode, clean electrode.
Readings fluctuate	Air bubbles on electrode, unstable sample temperature, electrical interference.	Gently tap meter to remove bubbles, ensure stable sample temperature, move away from electrical sources.

SPECIFICATIONS

Feature	Detail
Product Dimensions	6.5 x 1.38 x 1.38 inches
Item Weight	15.8 ounces
Item Model Number	PHM-230
Batteries	2 x 1.5V AAA batteries (included)
pH Measuring Range	0.00 - 14.00 pH
pH Resolution	0.01 pH
pH Accuracy	±0.05 pH
Temperature Measuring Range	0.0 - 60.0 °C (32.0 - 140.0 °F)
Temperature Resolution	0.1 °C / 0.1 °F
Temperature Accuracy	±0.5 °C / ±1.0 °F
Automatic Temperature Compensation (ATC)	Yes
Calibration	3-point automatic calibration (pH 4.00, 6.86, 9.18)
Auto-Off	10 minutes
Waterproof Rating	IP67 (electrode tip only)

WARRANTY INFORMATION

For detailed warranty information regarding your Elitech PHM-230 pH Pen Meter, please refer to the official Elitech

website or contact Elitech customer support directly. Warranty terms and conditions may vary by region and purchase date.

CUSTOMER SUPPORT

If you encounter any issues or have questions about your Elitech PHM-230 pH Pen Meter that are not covered in this manual, please contact Elitech customer service for assistance.

- Visit the official Elitech website for support resources and contact details.
- Refer to the contact information provided on the product packaging or warranty card.