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› Milwaukee Instruments MW100 Ph Meter with 2 Point Manual Calibration User Manual

Milwaukee MW100

Milwaukee Instruments MW100 pH Meter

Model: MW100

PRODUCT OVERVIEW

The Milwaukee MW100 is a compact, portable pH meter designed for fast and reliable measurements. It features a fast microprocessor and a large, easy-to-read LED display. This meter is suitable for a wide range of applications including educational, agriculture, horticulture, and water analysis. It offers manual 2-point calibration for accurate results.

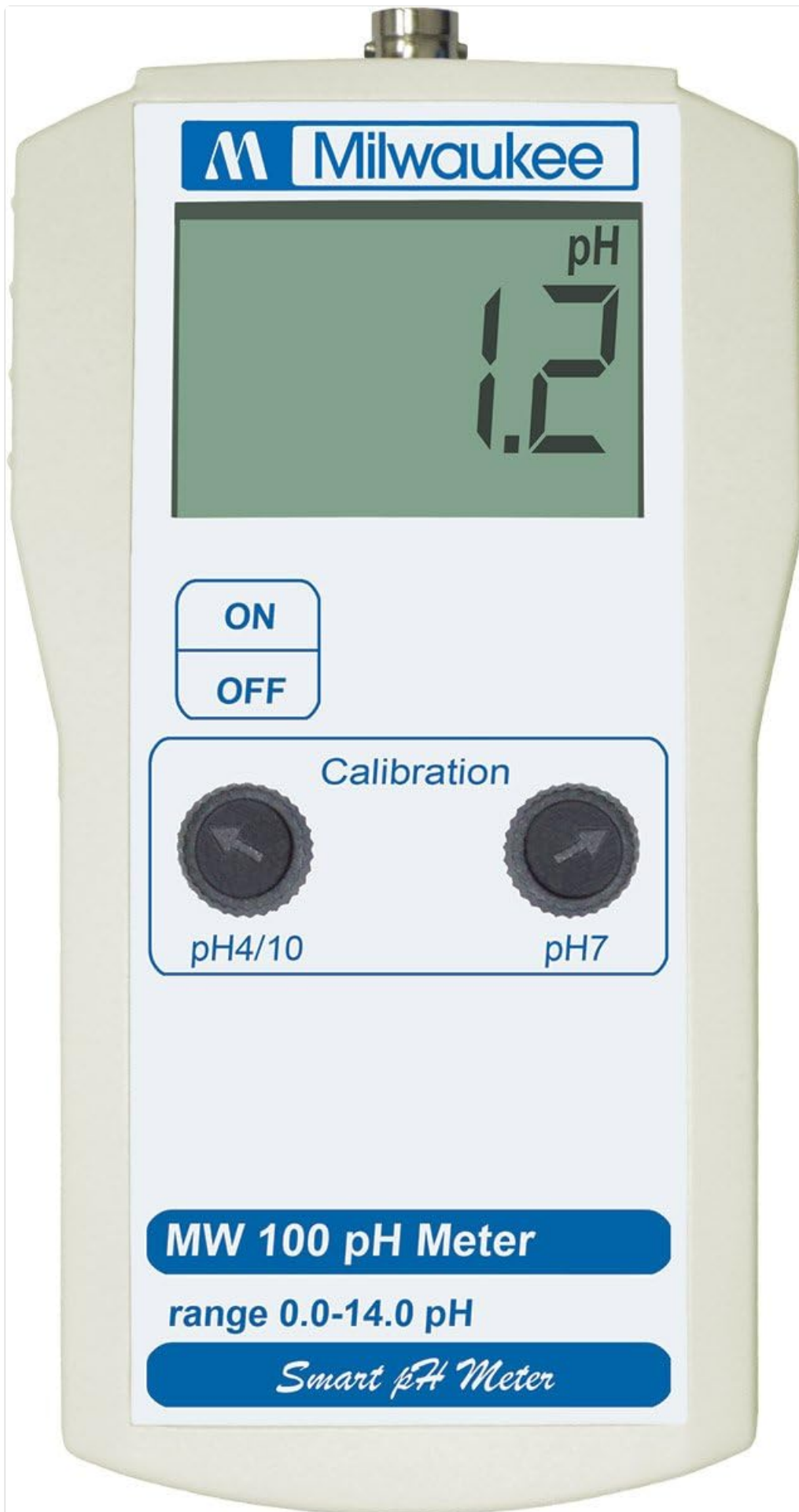


Figure 1: Front view of the Milwaukee MW100 pH Meter. The display shows "pH 1.2". Below the display are "ON" and "OFF" buttons. Further down, there are two calibration knobs labeled "pH4/10" and "pH7" under a "Calibration" heading.

PACKAGE CONTENTS

Verify that all items are present and undamaged upon unpacking:

- MW100 pH Meter unit
- MA911B/1 pH electrode
- pH 7.01 calibration solution sachet (20mL)
- Calibration screwdriver
- 9V alkaline battery
- Instruction manual (this document)

SETUP

1. Battery Installation

1. Locate the battery compartment on the back of the meter.
2. Open the battery compartment cover.
3. Insert the 9V alkaline battery, observing the correct polarity.
4. Close the battery compartment cover securely.

2. Electrode Connection

1. Remove the protective cap from the MA911B/1 pH electrode.
2. Connect the BNC connector of the pH electrode to the BNC socket on top of the MW100 meter. Ensure a firm connection.
3. Rinse the electrode tip with distilled water before first use.

OPERATING INSTRUCTIONS

Turning the Meter On/Off

- To turn the meter **ON**, press the "ON" button located below the display.
- To turn the meter **OFF**, press the "OFF" button located below the display.

pH Measurement

1. Ensure the meter is calibrated (see Calibration section).
2. Rinse the pH electrode with distilled water.
3. Immerse the electrode tip into the sample solution, ensuring the sensing bulb is fully submerged.
4. Stir gently and wait for the reading on the display to stabilize.
5. Record the pH value.
6. After measurement, rinse the electrode with distilled water and replace the protective cap.

Manual Temperature Compensation

The MW100 features manual temperature compensation from 0 to 50 degrees Celsius. To ensure accurate readings, measure the temperature of your sample solution separately and adjust the temperature compensation setting on the meter accordingly if available (Note: The MW100 description states manual temperature compensation but does not detail a user-adjustable knob for it. It implies the user should account for temperature effects on pH readings, often done via external charts or calculations for precise work).

2-Point Manual Calibration

Calibration is crucial for accurate pH measurements. The MW100 uses a 2-point manual calibration process.

1. **Preparation:** Ensure you have fresh pH 7.01 and pH 4.01 (or pH 10.01) calibration solutions. Use the provided pH 7.01 sachet.
2. **First Point (pH 7.01):**
 - Turn the meter ON.
 - Rinse the electrode with distilled water and immerse it into the pH 7.01 calibration solution.
 - Wait for the reading to stabilize.
 - Using the provided calibration screwdriver, adjust the "pH7" trimmer knob (located on the front panel) until the display reads "7.0".
3. **Second Point (pH 4.01 or pH 10.01):**
 - Rinse the electrode with distilled water.
 - Immerse the electrode into the pH 4.01 (for acidic range) or pH 10.01 (for alkaline range) calibration solution.
 - Wait for the reading to stabilize.
 - Using the calibration screwdriver, adjust the "pH4/10" trimmer knob until the display reads "4.0" or "10.0" respectively.
4. Your meter is now calibrated. Rinse the electrode with distilled water before taking measurements.

MAINTENANCE

Electrode Care and Storage

- Always rinse the electrode with distilled water before and after each measurement.
- Do not wipe the glass bulb; gently blot it dry with a lint-free tissue.
- For short-term storage (up to one week), keep the electrode tip immersed in electrode storage solution or pH 7.01 buffer solution. Never store in distilled or deionized water.
- For long-term storage, ensure the protective cap is filled with electrode storage solution and securely placed over the electrode tip.
- If the electrode becomes dry, soak it in electrode storage solution for at least 30 minutes before use.

Battery Replacement

When the display becomes dim or the meter shows erratic readings, it's time to replace the 9V battery. Follow the battery installation steps in the "Setup" section.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Erratic or unstable readings	Dirty or dry electrode; air bubbles on electrode; old calibration solution; low battery.	Clean electrode; gently tap electrode to remove bubbles; use fresh calibration solution; replace battery.
Meter does not turn on	Dead or incorrectly installed battery.	Check battery polarity; replace battery.
Unable to calibrate	Contaminated or expired calibration solution; faulty electrode.	Use fresh calibration solution; test electrode with known good solution or replace if necessary.
Slow response time	Dirty electrode; electrode nearing end of life.	Clean electrode thoroughly; consider replacing electrode if cleaning does not improve response.

SPECIFICATIONS

pH Range: 0.0 to 14.0 pH

pH Resolution: 0.1 pH

Temperature Compensation: Manual, 0 to 50 °C (32 to 122 °F)

Calibration: Manual, 2-point through offset and slope trimmers

pH Electrode: MA911B/1 (included)

Battery Type: 1 x 9V alkaline (included)

Battery Life: Approximately 300 hours of use

Dimensions: 145 x 80 x 40 mm (5.7 x 3.1 x 1.6 inches)

Weight: 220g (0.48 lbs) with battery

Product Dimensions (Packaging): 15 x 14 x 9 inches

Item Weight (Packaging): 10 pounds

WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact Milwaukee Instruments directly through their official website or customer service channels. Specific warranty terms and support contacts may vary by region and purchase location.