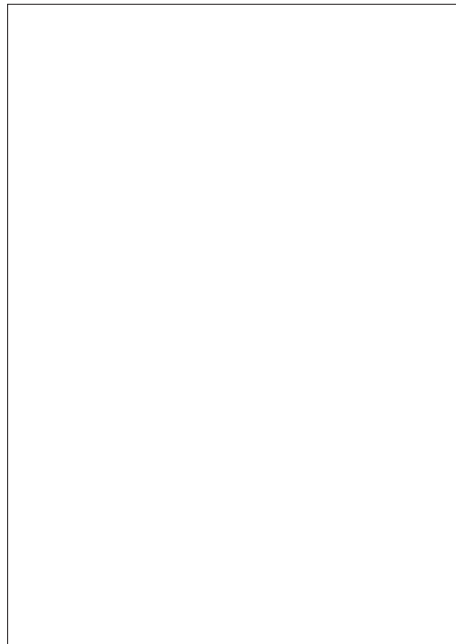


60\*85mm

封底  
▼

封面  
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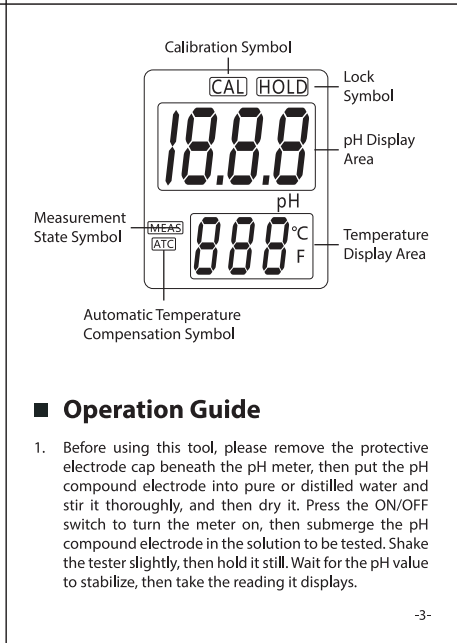
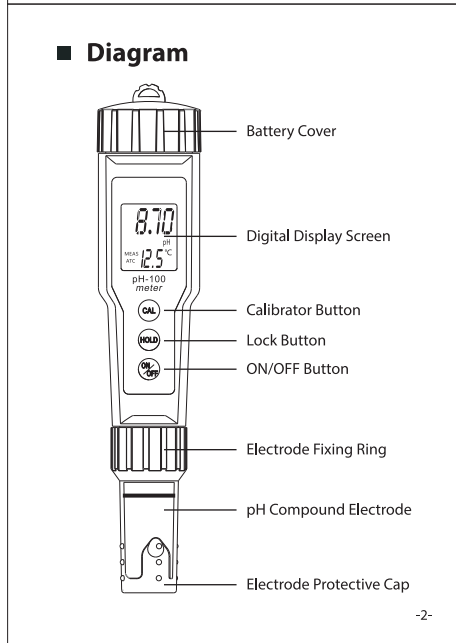
### Overview

The PH-100 pH meter is the ultimate portable pH testing tool, suitable for use in the field or in the lab, and can display pH value and temperature simultaneously. This versatile tester can be used for aquaculture, environmental health and safety, printing and dyeing, and the beverage industry, as well as in the sciences by research institutes for accurate measurements of water quality and pH value.

### Technical Specifications

Model	pH-100
Measuring Range	pH: 0.01-14.00 Temperature: 0-50°C/32-122°F
Resolution	pH: 0.01 Temperature: 0.1°C/1°F
Accuracy	pH: ±0.02 Temperature: 1°C/2°F
pH Calibration	25°C three point calibration: 4.01, 6.86, 9.18
Operation Temperature	0-50°C (32-122°F)
Power Supply	1.5V battery(LR44)x4Pcs
Size	Φ40x185mm
Weight	88g

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- By default, the pH meter measures temperature in Centigrade. If you need to convert the temperature to Fahrenheit, please do the following: While the pH meter is turned off, hold CAL. Then press the ON/OFF switch at the same time to turn it on. When "C" or "F" appear on the right side of the display, release the CAL button and long press CAL again to select "F" or "C". Then press HOLD to save it. At this time, the display screen will read "SA", indicating that the temperature unit you have selected has been set, and you may begin testing.
- Calibration:**  
The calibration is called "3-point-calibration", which means you should calibrate the meter with 6.86, 4.00 and 9.18 solution separately, but with the same procedure.
  - Prepare 6.86 PH standard buffer solution, press ON/OFF switch to turn it on. Insert the PH compound electrode into the configured standard buffer solution. Shake it appropriately and place it still. After the PH value is stable, press the CAL about 3 seconds until the CAL symbol displays. Then release the CAL, and the PH meter will automatically identify the value of the standard buffer solution under the current temperature, showing the current measured value about 1 second, and then display the value of standard buffer solution under the current temperature. After 2 seconds, there appears "SA", which means it is memorizing the calibration results.
  - Clean the electrode with distilled water and then dry it. Do the above procedures with PH4.00 solution, and then the second calibration point is complete.
  - Clean the electrode with distilled water and then dry it. Do the above procedures with PH9.18 solution, and then the third calibration point is complete. When the PH meter is calibrating, the "END" doesn't appear, please DO NOT take the PH meter out of the standard buffer solution. When the PH meter is calibrating, please use standard buffer solution and correct methods. Any incorrect calibration will increase the measurement errors. Under the non-standard calibration, please DO NOT press CAL; otherwise, it will cause wrong calibration, and the instrument will not function properly or the measurement error will badly exceed the standard.

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- Press the ON/OFF switch to turn the meter on. The "MEAS" symbol will appear on the normal working screen, indicating that the instrument is in the measuring state. Press HOLD to lock the current data on the screen, and "MEAS" will appear again. Then press HOLD again which will lock the reading, and the locking icon will appear.
- This instrument has the ability to memorize the current measurement results. When finishing measuring, press HOLD until "HOLD" appears on the screen; then turn the unit off. When the instrument is turned on next time, it will automatically display the last measurement value, at which point you can press HOLD to delete it.
- Outrange display**  
When the pH value is lower than "0" or higher than "14", the pH display area will show "L-" or "H-". When the temperature is too low or too high, the temperature display will show "L" or "H".
- Low voltage prompt**  
When the battery symbol appears, it indicates that the battery voltage is insufficient for proper measuring. Please install new batteries as soon as possible. Do NOT mix the old and new batteries, please replace all of them fully.

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### Precautions

- Please select a standard buffer solution closest to the pH value of the solution being tested to ensure more accurate measurement results.
- The calibration times depend on the tested solution, the electrode performance and the measurement accuracy. High precision measurement ( $\leq \pm 0.03\text{pH}$ ) should be calibrated often. For precision measurement ( $\leq \pm 0.1\text{pH}$ ), the pH tester can be continuously used for one week or longer after one calibration. Before using, when inserting the electrode into the standard buffer solution close to the pH value of the solution you are testing, you may find that the reading is beyond your accuracy tolerance, in which case it must be calibrated again. The following are situations in which the instrument must be recalibrated:
  - The long-term unused electrode or a new electrode;
  - After measuring concentrated acid solution ( $\text{pH} < 2$ ) or strong alkali solution ( $\text{pH} > 12$ );
  - After measuring solutions containing fluoride ( $\text{pH} < 7$ ) or stronger organic solutions.
- Do not insert the pH meter too deeply into the solution when in use; as long as the glass electrode is fully immersed in the solution, it will measure properly. Before using, please check and ensure that the pH

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electrode fixing ring is not loose. If it is loose, the solution may enter into the instrument, causing reading failures and unit malfunction.

- The glass ball of the pH compound sensitive electrode must be kept in humid conditions to keep it active and conduct normal tests. If the pH electrode has been dry for a long time, abnormal functions may occur such as slow response, poor accuracy and other issues. Therefore, at the bottom of the front of the electrode cap of the pH-10/100 waterproof pen type pH meter, there is a water storage sponge, which must always be kept wet. When the sponge is dry, add an appropriate amount of pH4.00 standard buffer solution (do not let the solution flow out), and close the electrode protective cap tightly to keep the pH electrode active under the correct moist conditions.
- If an electrode has been unused for a long time and is dry, insert the instrument into a 3.3mol/l kcl solution for several hours before using. (3.3mol/l kcl solution preparation: weigh 25g kcl and dissolve it in pure water and dilute to 100ml) Or you can purchase a special electrode soaking solution.
- The external reference ratio of the compound electrode is 3.3 mol/L potassium chloride solution.

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- Keep the electrode output clean and dry. Short circuits must be prevented at both ends of the output, otherwise the measurement results will be inaccurate or invalid.
- Do not immerse the electrode into distilled water, protein solution or acidic fluoride solution for a long time to prevent it making contact with silicone grease.
- The sensitive glass ball on the pH electrode front must not come into contact with hard objects. Any damage or friction on the electrode might cause failure. Before and after the measurement, the electrode should be cleaned with pure water to ensure the best measurement accuracy. After measuring viscosity samples, the electrode should be cleaned with pure water several times to remove sample residue on the glass membrane. Or first clean it with an appropriate solvent, then rinse the solvent with pure water.

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### Preparation and Usage for a Standard Buffer Solution

#### Preparation:

The instrument comes with three kinds of powdered standard buffers solutions. Examples of the preparation methods are as follows:

- Prepare a clean container larger than 250ml, take a plastic bag of pH=6.86 (green) buffer solution, and pour the inner white powder into the container.
- Add 250ml of distilled water to the container. If there is no distilled water, replace it with 250ml of purified water.
- Stir the solution slowly with a clean stirring rod until the powder is completely dissolved.
- Preparation methods of other standard buffers are the same as above. Make sure to label the three prepared buffer solutions to prevent confusion.

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#### Usage :

250ml buffer solution can be used multiple times. To calibrate the pH meter, pour three buffer solutions into three of their respective small containers and label them. The buffer solution should be immersed in the glass electrode. The used buffer solution should not be reused. Store the rest of the buffer solutions in a cool, dry place at 20-25 °C.

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### Care and Maintenance

Optimum performance of the instrument is contingent upon its condition and good maintenance. The pH meter makes contact with chemical substances often, therefore frequent maintenance is necessary.

- Keep the input port of the instrument (the compound electrode port) very clean, and do not remove it too frequently to keep dust and humidity to a minimum.
- The head of the compound electrode is very thin, so keep it away from hard objects to avoid damage.
- Keep the head of the compound electrode away from dirt. If there is dirt on it, wipe it with cotton or wash it with 0.1 mol/L of diluted hydrochloric acid.
- If the head of the compound electrode is cracked or aged for more than one year, then replace it to avoid slow reactions and large measurement errors. The new electrode will need to be soaked in 3mol/L of potassium chloride solution for 24h.
- After finishing the measurement, cover the electrode protection sleeve when not in use and fill the electrode protection sleeve with a small amount of replenishing liquid to keep the electrode moist.

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- After the electrode has been used for a long time, if the gradient is slightly reduced, immerse the lower end of the electrode in 4% HF (hydrofluoric acid) for 3-5 seconds, wash it with distilled water, and then soak it in potassium fluoride solution to renew it.
- If there are substances that easily pollute the sensitive bulb or block liquid-junction potential, the sensitive gradient is lowered, or the measurement is inaccurate when the electrode is passivated. In this case, clean it with a suitable solution according to the nature of the pollutants to renew it.
 

Note: Cleaning agents which can dissolve the polycarbonate resin, such as carbon tetrachloride, trichloroethylene, tetrahydrofuran and more, may stick onto the sensitive glass bulb after it dissolves the polycarbonate resin, making the electrode invalid, so please use with caution!
- Because low-accuracy buffer solutions will lead to measurement errors, ensure the reliability of the buffer solution when calibrating the instrument. You can prepare buffer solution by yourself by using the solution preparation method mentioned above.

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