

Digital pH Meter
Instruction Manual
EH-2000

Thank you for purchasing our Digital pH meter. Please read this instruction manual carefully before using to ensure the correct usage of this device. Please keep this instruction manual for future reference.

ATTENTION
Please note that misuse of this device may lead to injury to the user or damage to the device. Please observe all safety precautions and warnings in this instruction manual.

Customer Service
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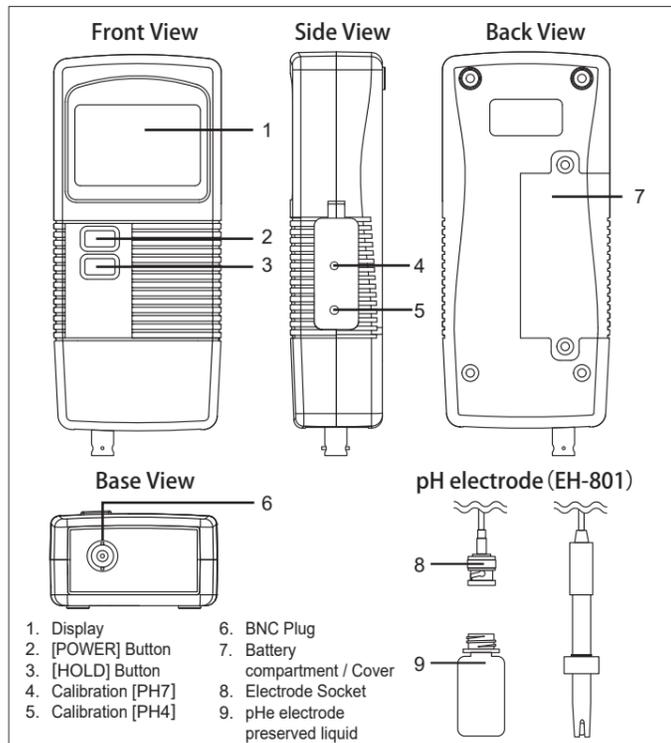
Safety Precautions

For safe usage of this device, please observe all statements regarding precautions and warnings in this instruction manual.

ATTENTION

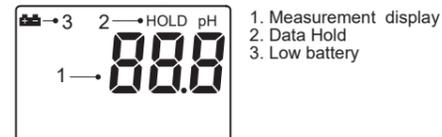
- 1. Operation**
- Do not use this device near machines that emit strong electromagnetic fields or objects that store static electricity.
 - Do not drop or subject this device to strong impact.
 - Do not use or store this device where it will be exposed to water or in places with wet conditions.
 - Do not use or store this device where it can be exposed to direct sunlight, dust, high temperature and high humidity.
 - Make sure to remove the pH electrode when changing the battery.
 - See the battery case markings to ensure that the battery is properly installed.
 - For accurate measurements, do not subject this device in measuring sudden change of temperatures.
 - Remove the battery when the device will not be used for a long period of time.
 - Do not attempt to disassemble or modify this device.
- 2. pH electrode**
- Do not use the pH electrode degraded and damaged.
 - Handle pH electrode with care since the tip of pH electrode is thin film glass.
 - Do not use the pH electrode out of its measuring range. The quality of pH electrode may be degraded by strong alkali and strong acid.
 - Inspect the pH electrode before measuring.
 - Always put the tip of electrode inside the preservation liquid if not in use.
 - Do not drink the preservation liquid.
 - The pH electrode is easy to damage.
 - The life of pH electrode depends on the usage and measuring object.
 - Exchange the pH electrode to new one periodically.
 - The pH electrode is out of our standard warranty.

1. Functions



- 1. Display
- 2. [POWER] Button
- 3. [HOLD] Button
- 4. Calibration [PH7]
- 5. Calibration [PH4]
- 6. BNC Plug
- 7. Battery compartment / Cover
- 8. Electrode Socket
- 9. pHe electrode preserved liquid

2. Measuring Procedure



Make sure the device and pH electrode is calibrated before measuring. (Refer to the section.8 Calibration Procedure.)

- 1) Insert the Battery into the Battery Box. (Refer to the section 6.Battery Replacement).
- 2) Connect the pH electrode to the socket on the device.
- 3) Press the [POWER] Button to switch-on the device.
- 4) Dip the pH electrode into the measured solution. The bubble on the surface of electrode should be removed before measuring.
- 5) When the reading becomes stable, read the displaying value.
- 6) Press the [POWER/ESC] Button to switch-off the device.
- 7) After the measurement, rinse the electrode with distilled water, wipe the water with filter paper and store the electrode in preservation bottle.

3. Functions Operation (Data Hold)

- a. Data Hold
- 1) During the measurement, press the [HOLD] button to hold the last measured value on the display. The display will also show the "HOLD" symbol.
 - 2) Press the [HOLD] button again to exit the Date Hold function.

4. Cleaning

- 1) Wipe off dust and other dirt from the main unit with a dry cloth.
- 2) Make sure to rinse the electrode with distilled water after the measurement.
- 3) Refill preservation bottle with preservation liquid (Model: EH-700, sold separately) If preservation liquid is decreased.

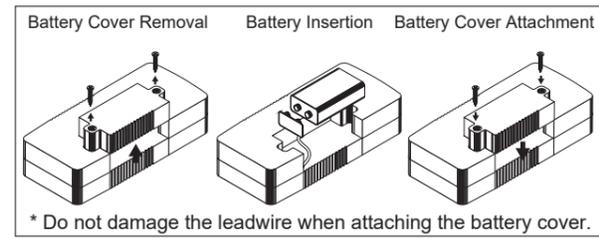
Caution
Please do not wipe with benzene or thinner. It may cause cracks or discoloration to the surface of the main unit.

5. Storage

- 1) For proper storage, avoid places where the device can be exposed to direct sunlight, high humidity, high temperature, vibration and shock, dust, rust, corrosion, etc. Remove batteries and electrode if the device will not be used for a long period of time.
- 2) Always put the tip of electrode inside the preservation liquid to avoid drying it.

6. Battery Replacement

- 1) When the Low Battery indicator appears on the display, it is necessary to replace the battery to maintain accurate readings.
 - 2) Remove the battery cover as shown below.
 - 3) Replace the battery with a new one and position the new battery correctly inside the device's battery compartment.
 - 4) Attach the battery cover.
- * The unit cannot measure accurately after low battery indicator is displayed. Please replace the battery immediately.



7. General Specifications

Main Unit	
Model	EH-2000
Measuring Method	glass electrode method *1 (Combination Electrode) *2
Sampling Time	Approx. 0.4 second.
Functions	Data Hold
Display	LCD:44mm x 28mm Digit Size:15mm
Power Supply	006P (DC9V) battery x 1 pc.
Battery Life	Approx. 240Hours.
Current Consumption	Approx. 2.0mA
Operating Temp.	0 - 50°C
Operating humidity	80%RH max
Dimensions	Main Unit:135(H)x60(W)x33(D)mm pHe electrode:φ9.5mmx120mm Cable Length:Approx. 2m
weight	WEIGHT:Approx. 196g (including batteries)
Content	Instruction Manual, 006P battery x 1pc.
Compliance	CE, RoHS

*1 Glass Electrode
The measured pH of a solution is determined by the amount of voltage (electric potential) produced across two electrodes. These electrodes are the glass electrode and the reference electrode.
*2 Combination Electrode
The combination electrode is a glass electrode and a reference electrode combined together to form a single electrode. The combination electrode is more convenient to handle in processes such as calibration, testing and washing.

Accuracy	
Measuring Range	Main unit : pH 0.00 to pH 14.00 pH Electrode (EH-801) : pH 1.00 to pH 13.00
Resolution	pH 0.01
Accuracy	pH ±0.07 (pH5.00 - 9.00) pH ±0.1 (pH4.00 - 4.99, pH9.01 - 10.00) pH ±0.2 (pH0.00 - 3.99, pH10.01 - 14.00)

* Temperature Conditions : 23±5°C environment testing.

8. Calibrating Procedure

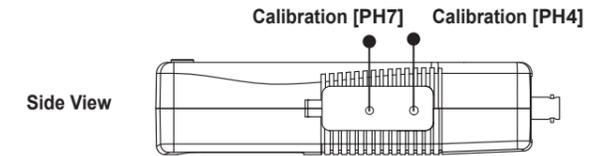
a. Calibrating Consideration

This pH meter is already calibrated from the mV output of an ideal electrode (at 25°C environment). However, (a) Knowing that ideal electrode produces zero volt at pH7.00, most electrodes will be slightly off. (b) though the conditions of the environment may be at 25°C during calibration, measuring between 15 - 35°C may still be possible to do. If the user wants to keep the electrode performing at high accuracy, it is necessary to always follow the calibration procedures.

b. Equipment for Calibration

- Main unit (EH-2000) and pH electrode (EH-801)
- Two buffer solutions (sold separately) / pH7.00 (EH-807) & pH4.00 (EH-804)
- Distilled water (Marketed product)
- Slotted precision screwdriver

Pour the buffer solutions into different containers by the amount necessary for calibration. Do not return the buffer solutions which have used for calibration into the bottle.



c. Two Points Calibration

- 1) Connect the pH electrode to the socket on the device.
- 2) Dip the pH electrode into the pH7.00 buffer solution.
- 3) Press the [POWER] Button to switch-on the device.
- 4) Adjust Calibration knob [PH7] with a precision screwdriver until the display accurately shows the value of 7.00.
- 5) Rinse the pH electrode with distilled water.
- 6) Dip the pH electrode into the buffer pH4.00 solution.
- 7) Adjust Calibration knob [PH4] with a precision screwdriver until the display accurately shows the value of 4.00.
- 8) Repeat above 1) to 7) procedures twice at least.
- 9) After the calibration, rinse the electrode with distilled water and wipe the water with filter paper.

d. Single Points Calibration

- 1) Connect the pH electrode to the socket on the device.
- 2) Dip the pH electrode into the pH7.00 buffer solution.
- 3) Press the [POWER] Button to switch-on the device.
- 4) Adjust Calibration knob [PH7] with a precision screwdriver until the display accurately shows the value of 7.00.
- 5) Rinse the pH electrode with distilled water and wipe the water with filter paper.

e. Troubles during calibration

- The pH electrode might have damaged in the following cases. It should be exchanged to new one.
- The value on the display does not become stable after more than 15 minutes
 - The value on the display does not change when turning the calibration knob.

9. Accessories (Sold Separately)

- buffer PH 4.00 solution (40cc) : EH-804
- buffer PH 7.00 solution (40cc) : EH-807
- Replacement pH Electrode : EH-801
- pH electrode preserved liquid (30cc) : EH-700