



# pH Meter

## User Manual

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HT-1202

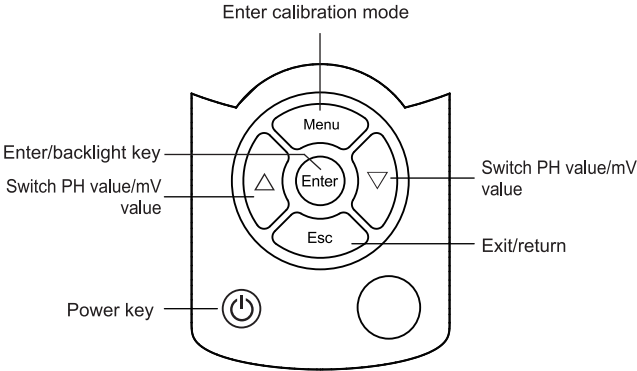
# Introduction

The product is convenient to use and simple to operate with high measurement precision and is suitable for environmental protection, waste water treatment, chemical laboratories, pharmacy, fermentation, chemical engineering, tap water and other fields.

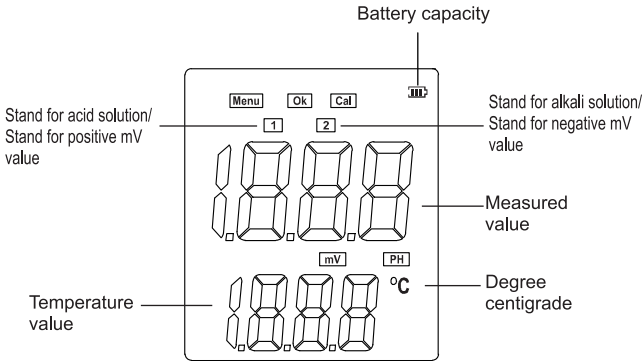
# Product structure description




# Key description



# Display description



## Power on/off

Press  key to power on/off.

## Backlight

The backlight starts automatically after power on. Hold down "Enter" key to turn on/off the backlight.

## Set temperature

Press "Enter" key to make the temperature at the adjustable state (flashing display). Press " $\nabla$ " key to select among the ten's place, unit's place and tenths unit. Press " $\triangle$ " key to circulate and adjust among 0-9. After the setting is completed, press "Enter" key again to exit. Note: The set temperature value returns to the default value 25°C after power on again.

## Calibration of the instrument

Before the instrument is used, two points of PH4.00 and PH9.18 needs to be calibrated with the methods as the follows:

Calibration of PH4.00

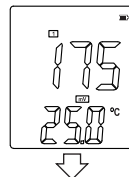
1. Prepare PH4.00 standard buffered solution
2. Measure the temperature value of the solution with a thermometer.
3. Set the temperature value on the instrument as the temperature value of the standard buffer solution.
4. Wash PH electrode. Wash with distilled water first. Then use PH4.00 standard buffer solution to wash.
5. Then put PH electrode into the PH4.00 standard buffer solution. Let it stay after mixing for a little while.
6. Press "Menu" key to enter the calibration mode. Press "Enter" key twice to complete the calibration. Press "ESC" key to exit.

Calibration of PH9.18

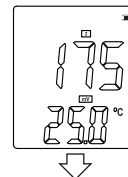
1. Prepare PH9.18 standard buffered solution
2. Measure the temperature value of the solution with a thermometer.
3. Set the temperature value on the instrument as the temperature value of the standard buffer solution.
4. Wash PH electrode. Wash with distilled water first. Then use PH9.18 standard buffer solution to wash.
5. Then put PH electrode into the PH9.18 standard buffer solution. Let it stay after mixing for a little while.
6. Press "Menu" key to enter the calibration mode. Press "Enter" key twice to complete the calibration. Press "ESC" key to exit.

## Ph value/mv value measurement

1. Measure the temperature of the measured solution. Set the temperature value displayed by the instrument as the temperature value of the measured solution.
2. Wash PH electrode. Wash with distilled water first. Then use solution to be measured to wash.
3. Immerse PH electrode into the solution to be measured, shake it several times and let it stay quietly. The instrument displays the measured value. Press " $\triangle$ " key or " $\nabla$ " key to switch the display PH value or mV value.



The measured solution exhibits acidity. The instrument displays " $\square$ ". The corresponding mV value is positive value. The reading in the drawing is 175mV.



The measured solution exhibits alkalinity. The instrument displays " $\square$ ". The corresponding mV value is negative value. The reading in the drawing is -175mV

## Maintenance of pH electrode

1. After taking away the electrode protection bottle, avoid the glass bulb of the electrode touching hard objects. Any damage or scratching will make the electrode failed.
2. After the measurement ends, sheathe the electrode protective bottle at once. Place a small amount of electrode protection solution in the protective bottle to keep moisture of the electrode bulb.
3. The casing materials of plastic case pH combination electrode adopt polycarbonate plastics. Therefore, it should not contact carbon tetrachloride, trichloro ethylene, tetrahydrofuran and other solution that can dissolve plastic casing pH combination electrode.
4. Avoid dipping the electrode into distilled water, protein solution and solution of acid fluoride for a long time.
5. The electrode should not contact with silicone oil.
6. The quality warranty period of the electrode is the storage period and is one year. When the electrode expires, it should be replaced with new electrode.

Preparation of electrode protection solution: dissolve 2.53g GR potassium acid phthalate and 56g potassium chloride in 250ml high-purity deionized water. Stir or shake it to make the reagent dissolved evenly.

## Electrode pollutants and cleaning agents

Pollutants	Cleaning agent
Pigment substance	Thin bleaching liquid, hydrogen peroxide
Inorganic metallic oxide	Lower than 1mol/L diluted acid
Organic oil substances	Diluted detergent ( Weak Basicity)
Resin high molecular substances	Dilute alcohol, acetone and diethyl ether
Protein blood cell sediment	Acidity enzyme solution (such as sacccharated yeast tablets)

## The relation contrast table between buffer solution PH value and temperature

PH4: 0.05mol/kg potassium acid phthalate solution

PH7: 0.025mol/kg mixed phosphate solution

PH9: 0.01mol/kg sodium tetraborate solution

Temperature (°C)	PH4	PH7	PH9
5	4.00	6.95	9.39
10	4.00	6.92	9.33
15	4.00	6.90	9.28
20	4.00	6.88	9.23
25	4.00	6.86	9.18
30	4.01	6.85	9.14
35	4.02	6.84	9.11
40	4.03	6.84	9.07
45	4.04	6.83	9.04
50	4.06	6.83	9.02
55	4.07	6.83	8.99
60	4.09	6.84	8.97

## Preparation of standard buffered solution

### Method I :

One packet of PH4.00, PH6.86 and PH9.18 standard buffer reagent is attached respectively at the time of delivery. Users may prepare the corresponding standard buffer solution according to the description method.

## Method II :

PH4.00 solution: Dissolve 10.12g GR potassium acid phthalate in 1000ml high-purity deionized water.

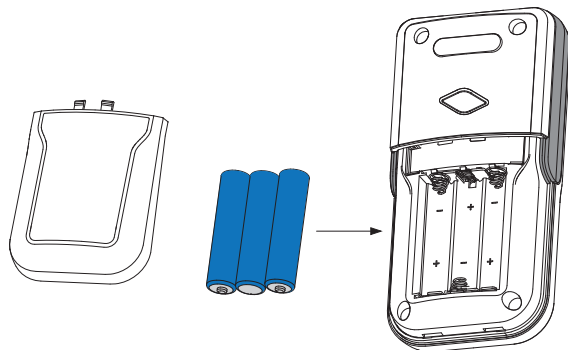
PH6.86 solution: Dissolve 3.387g GR monopotassium phosphate and 3.533g GR disodium hydrogen phosphate in 1000ml high-purity deionized water.

PH9.18 solution: Dissolve 3.80g GR sodium tetraborate in 1000mL high-purity deionized water.

Supplementary description: The water for preparation of PH6.86 and PH9.18 solution should be boiled for 15-30 minutes in advance to remove the dissolved carbon dioxide. It avoids contacting with air during the cooling process to prevent pollution caused by carbon dioxide.

## Install the battery

Please install the new battery attached at the time of delivery before the instrument is used for the first time. Install 3 AA batteries correctly according to polarity indication in the battery box. Then replace the battery cover. Note: When the screen shows low battery level during the use process, please replace with new battery.



## Product specification

LCD display: three and a half digit display

Measurement range

PH: 0PH~14PH

mV: -415mV~415mV

Resolution ratio: 0.01PH, 1mV

PH measurement error:  $\pm 0.05$ PH

mV value measurement error:  $\pm 0.1\%$ FS

The temperature of the measured solution: 5~60℃

Temperature compensation scope: 0~60℃

Automatic power-off time: 4 minutes

Weight of the host: 145g

Dimension of the host: 165mm×75mm×32mm

Accessory: Standard buffer reagent (one packet of PH4.00, PH6.86 and PH9.18 respectively)/user manual/ potassium chloride powder packet/PH non-chargeable combination electrode/3 AA batteries

Normal use condition of the instrument

1. Environment temperature: 5~40℃
2. Relative humidity:  $\leq 85\%$ RH(No condensation)
3. Power supply: 3 AA batteries
4. No vibration affecting performance in surrounding area.
5. No corrosive gas in the surrounding air
6. No other magnetic field interference except earth magnetic field