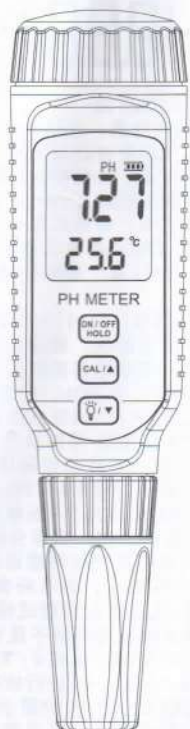


PEN TYPE PH METER INSTRUCTION MANUAL



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INTRODUCTION

This device is an intellectual and precise measuring apparatus. It is designed and made by precise components and sensor. It is sensitive, accurate and stable to work with different temperature. Small in size to carry and storage. It measures and display the PH value and temperature of the tested solvent. PH meter could widely applied in various industrial, e.g. electrical, agricultural, medical, food industrial, etc. It is very important that you read this instruction before using this device to get the correct reading.

1. Explanation of the Appearance

1. Power ON/OFF / and Hold button
2. Calibration / Scroll Up button
3. Back light / Scroll Down button
4. PH Value Reading Area
5. Temperature Reading area
6. PH Probe Electrode



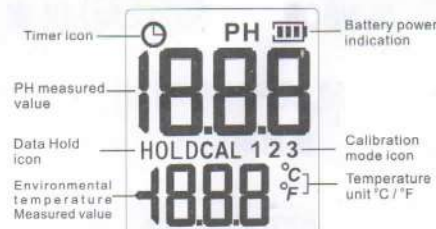
2. Technical parameters

Technical parameters	
PH Measuring Range	0.00~14.00 pH
PH Basic Measuring Accuracy	±0.05pH
Reading Repeatability	±0.03
Resolution	0.01pH
Solvent Temperature Compensation Range	0°C~70°C
Temperature Measuring Accuracy	±1°C
Solvent Temperature Measuring Range	0°C~60°C
Power Supply	1.5V AAA size battery X 2 PCS
LCD Display	Large LCD segment type display
Working temperature range	0°C~50°C
Working humidity range	≤85%RH

3. Each Set contains :

1. PH Meter Main Unit: × 1 piece
2. PH4.00, PH6.86, PH9.18 Calibration Powder × 2 bags each type.
3. Instruction Manual and Warranty Card : 1 set each

4. LCD DISPLAY SCREEN



5. OPERATION

Open the battery door that located at the top of the device, insert 2 pieces of AAA size (1.5V) batteries into the battery compartment with correct polarity. No need to calibrate every time before using the device. Please calibrate if you have replaced with a new PH composite electrode. If measuring interval period is short, each month calibrate once is enough.

This device applies <three points calibration> method for calibration, please follow the below steps:

1. The device and calibration solution must be calibrated at ambient environment temperature 25°C ±2°C. At normal Measuring Mode, press [CAL/▲] key more than 3 seconds, device would be in Calibration Mode. LCD Screen "CAL1" flashing and "4.00" displaying at the screen. Rinse the PH Electrode with distilled water, when the sensor inside the device detected the stable signal from PH4.00 solution, LCD display shows "PAS", it means the device passed PH4.00 calibration. The device will then automatically go to CAL 2 mode, LCD screen "CAL2" flashing and "6.86" digit displaying at the screen.
2. Clean the Sensor electrode quickly, rinse the PH electrode with distilled water, immerse the PH electrode into the PH6.86 buffer solution, when the sensor inside the device detected the stable signal from PH6.86 buffer solution, LCD display shows "PAS", it means the device passed PH6.86 calibration. The device will then automatically go to CAL 3 mode, LCD screen "CAL3" flashing and "9.18" digit displaying at the screen.
3. Clean the sensor electrode quickly, rinse the PH electrode with distilled water, immerse the PH electrode in the PH9.18 buffer solution, when the sensor inside the device detected the stable signal from the PH9.18 buffer solution, LCD display shows "PAS", it means the unit passed PH9.18 calibration. The device will then back to normal Measuring Mode.
4. If the PH value shows at the LCD is not same as the applied PH calibration solution, please adjust the PH value at Calibration Mode by pressing the [CAL/▲] key or [▼/▼] key, to adjust the PH value to be same as the applied calibration solution, then proceed the Calibration Procedure again as mentioned above.
5. During the calibration process, if LCD shows "Err", it means that calibration process failed, calibration solution is not within the calibration range or sensor failed.

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8. MAINTENANCE AND SPECIAL CARE

1. Before using the device, it is highly recommended to calibrate with precise and reliable Buffer Solution, to make sure the PH value reading is very close to the value of the object solution.
 2. After taking off the PH Electrode protection bottle, please don't touch the glass bulb and don't contact with hard object, it is very fragile and thin. Any scratch and crack will cause malfunction of this electrode.
 3. After using the PH electrode, please put it back to the protection bottle. Make sure the protection bottle have enough de-ionized water or rinse solution (tap water) before next usage.
 4. The buffer solution for reference and compare electrode is 3.3mol/L Potassium chloride solution, end user can refill it into the small hole at top of the composite electrode that is sealed with silicone rubber tag.
 5. The contact pin of the electrode must keep dry and clean, to prevent short circuit of the pin, otherwise the electrode will be damage and can't be repaired.
 6. Avoid immersing the PH Composite Electrode into distilled water, protein solution, and Fluorine chemicals acid solution for long period. Avoid contacting with silicone grease.
 7. If the PH Composite Electrode has been used for a long time and the sensitivity become low, please immerse the head of the electrode into a 4%HF solution (Hydrofluoric acid) for 3-5 seconds, then clean it with distilled water, then immerse it into Potassiumchloride solution to recover it.
 8. If the measured solution contains something that makes the glass bulb dirty, or block the surface of the glass bulb, it will affect the sensitivity of the electrode or cause error when measuring. In this case, you should clean the electrode with suitable solvent to make it recovered.
 9. Limited by the thermal conductivity of the glass material, try to avoid using it in the environment with large temperature difference to prevent the probe from cracking. In addition, the probe should be kept moist for a long time to protect its performance.
- Notice: When select the cleaning solution, please pay attention that some solvents which could dissolve the Polycarbonate resin, for example: Carbon tetrachloride, Trichloroethylene, Tetrachlorofuran etc, might stay on the glass bulb and then damage it, and make the electrode malfunction, be careful. Attention: Please unplug the plug of the top side of the electrode to let the air pressure become balance.

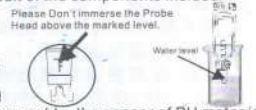
Reminder (figure show)

When the device is in Calibration Mode, please don't immerse the probe head above the marked level, to avoid water goes into the device to cause short circuit of the components inside.

Please check whether the package is complete and the sensor is in good condition when you receive the instrument. As the sensor is greatly influenced by human factors and is consumable, the sensor of PH meter is not within the warranty scope of this product.

Special Announcement

Our company reserved the right to change the design and revise the user manual without prior notice to the end user.



6. In the following circumstances, the device must be re-calibrated again :

1. PH Electrode took out from the Liquid Storage Bottle for long time.
2. The device changed a new PH Electrode.
3. After measuring the High Condensed Acid which PH<2 or Alkali which PH> 12.
4. After measuring the Fluoride and Acidity Solution which PH<7 or Condensed Organic Solution.

7. Device Maintenance

Because PH meter always work at high acid or alkali chemical environment, to keep the good performance of the device, except the product design, maintenance is also very important and essential. It is suggested to keep the device in following ways :

1. The input port (the PH composite electrode) of the device, must be keep in good condition, keep dry and clean. Don't take off the plug from the device except you will not use it in a long period.
2. The head of the PH Composite Electrode is fragile and very thin, please don't touch with hard object to prevent electrode damage by external force.
3. Don't let dirty object contact the head of the Composite Electrode, if it becomes dirty, please clean it by medical soft cotton soft or with 0.1 mol/L dilute hydrochloric acid solution.
4. If the head of PH Composite Electrode cracks or becomes aging (has been used for more than one year), must be replaced with new PH Composite Electrode. Otherwise, it will cause low response, or even cause big measurement error. For new Electrode before use, should be immersed in 3 mol/L Potassium chloride solution for 24Hours.
5. Calibrating the device with Buffer Solution, the accuracy and reliability of the Buffer Solution is very important. If the accuracy of Buffer Solution is low, it will cause measuring error. Buffer solution can be self-made per the below appendix in detail.

Appendix : Preparation of Buffer Solution

1. PH4.00 Buffer Solution : Put the PH4.00 powder into 250mL distilled water. Mix them carefully until the powder fully dissolved in water. Put it aside 30 minutes.
2. PH6.86 Buffer Solution : Put the PH6.86 powder into 250mL distilled water. Mix them carefully until the powder fully dissolved in water. Put it aside 30 minutes.
3. PH9.18 Buffer Solution : Put the PH9.18 powder into 250mL distilled water. Mix them carefully until powder fully dissolved in water. Put it aside 30 minutes.