

VEVOR

Upgrade · The Home Creator Way

Benchtop Meter

MODEL: PH100

MODEL: PH100



This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

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1. Brief Introduction

This meter is a combination of advanced electronics design and sensor technology. Please read this manual carefully to properly use and maintain the product.

Main Features

1. Intelligent functions such as automatic calibration, self-diagnosis, automatic temperature compensation, data logging, max/min reading display, etc.
2. Simple electrode holder for easy operation and workbench space saving.
3. High-quality ATC pH/temp. electrode for precise measurement.

1.1 What's in the Box?

Content	Qty.	
PH700 Benchtop Meter	1	Main unit
201T-F Plastic 3-in-1 pH/Temp. Electrode	1	
pH buffer solutions (4.00/7.00/10.01 pH, 50ml for each)	1 for each	
Power Adapter (GME6E-090050FUR-1)	1	US standard
Power Adapter (GME6A-090050FGR)		EU standard
Electrode Holder	1 set	
User Manual	1	

1.2 Technical Specifications (Instrument Only)

pH	Range	0 to 14.00 pH
	Resolution	0.01/0.1 pH
	Accuracy	± 0.01 pH ± 1 digit
	Temperature Compensation	0 to 100 °C (Auto or Manual)
	Calibration	1 to 3 points automatic
mV	Range	± 1999 mV
	Resolution	1 mV
	Accuracy	$\pm 0.1\%$ F.S. ± 1 digit

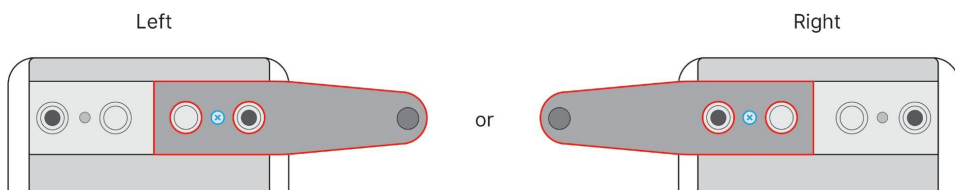
Temp.	Range	0 to 100°C; 32 to 212° F
	Resolution	0.1°C; 0.1/1° F
	Accuracy	±0.5°C±1 digit
Others	Data Storage	50 sets
	Storage Content	Numberings, Measurement, Unit, Temperature, Temperature Compensation Status
	Power	DC9V 0.5A
	IP Rating	IP54 dustproof and spillproof

2. Installation

2.1 Install the electrode holder

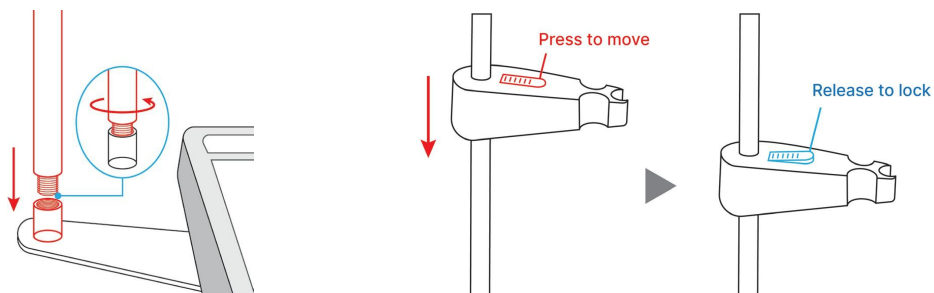
The electrode holder is composed of a metal stand base, a supporting bar, and an electrode clip. First, screw on the metal stand base to the meter on either side (Pic-1). Then install the supporting bar on the metal stand base (Pic-2). Lastly, install the electrode clip on the supporting bar (Pic-3).

Pic-1



Pic-2

Pic-3



2.2 Connect the power adapter

Plug the power adapter tightly into the DC9V socket.

2.3 Connect the pH Electrode

Clip on the pH electrode to the electrode holder. Plug the blue BNC connector into the pH / mV socket, and black RCA connector to the TEMP socket.

2.4 pH Electrode

The meter comes with the 201T-F pH/temp. electrode, which enables automatic temperature compensation. This electrode is designed for accurate pH measurement in general water solutions, whose pH range is 2 to 12 (not too acidic or alkaline), temperature between 10°C and 50°C (50°F to 122°F), and contain a medium level of ion concentration (conductivity range: 100 µS/cm to 10,000 µS/cm or salinity level < 0.5%). For other applications, please refer to Section 10 for ideal pH electrodes to use.

2.5 Technical Specifications of 201T-F pH Electrode

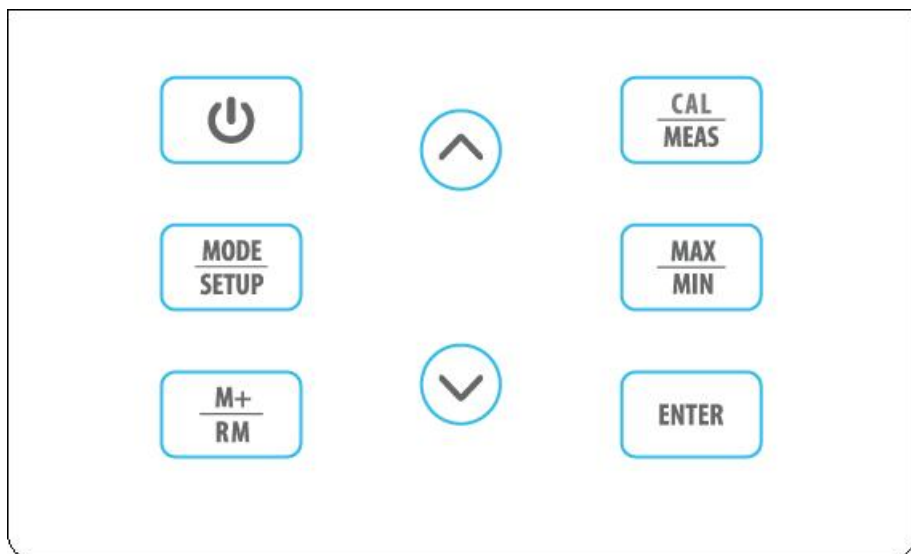
Measurement Range	0 - 13 pH, 0 - 60°C (50 – 140°F)
Membrane Type	U
Junction	Single Ceramic
Reference Electrode	Ag / AgCl
Connector	BNC / RCA
Size	ø12*160 mm
Temperature unit	30K NTC

2.6 Prepare the pH Electrode

2.6.1 Loosen the locking ring of the electrode storage vial by twisting it counterclockwise (Pic-4). Put the electrode storage vial aside. Then pull out the electrode slowly (Pic-5).

- 1) Measurement value
- 2) Calibration icons and numberings
- 3) Measurement unit
- 4) Temperature and reminder icons
- 5) The pH unit displayed during calibration
- 6) The pH value displayed during calibration, numberings for storage and recall, and reminder icons
- 7) Icons for data storage and recall — M+: save measurement data; RM: Recall measurement data
- 8) Self-Diagnosis icons and numberings
- 9) Temperature compensation mode icons — ATC: Auto Temperature Compensation; MTC: Manual Temperature Compensation
- 10) Completed calibration icons
- 11) Stable reading icon
- 12) Icons for maximum and minimum values



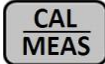

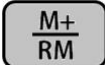



3.2 Keypad



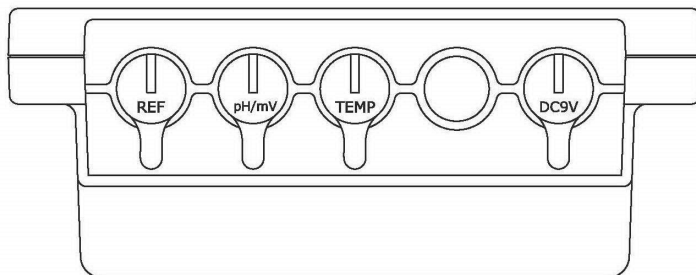
3.2.1 Keypad Operation

Short Press: 0.5 seconds **Long Press:** 2 seconds

3.2.2 For keypad functions, refer to the following table.

Keypad	Operation	Functions
	Short Press	Power on/off
	Short Press	Select measuring mode: pH → mV
	Long Press	Enter parameter setting : P1 → P2 → P4
	Short Press	<ul style="list-style-type: none"> • Enter Calibration mode • Cancel any operation and go back to measurement mode
	Short Press	<ul style="list-style-type: none"> • In calibration mode, press to conduct calibration • In parameter setting, press to confirm selection
	Short Press	Save measurement data
	Long Press	Recall saved measurement data
 	Short Press or Long Press	<ul style="list-style-type: none"> • In manual temperature compensation mode, short press to change temperature, long press to change quickly. • In parameter setting mode, short press to change parameter and settings. • In recall mode, short press to change numberings, long press to change quickly.
	Short Press	Enter Max/Min measurement mode (refer to section 4.6)

3.3 Connection



Symbol	Connector Name	Connector Type
REF	Socket for reference electrode	Φ2 banana type
pH/mV	Socket for pH and ORP electrode	BNC
TEMP	Socket for temperature sensor	RCA
DC9V	DC9V power socket	Φ2.5 direct type


3.4 Stable Reading Display Mode


When the measuring value is stable, 😊 appears on LCD, see Pic-6. Do not record the reading value or make calibration until the 😊 appears and stays.



Pic-6

3.5 Data Logging




When readings are stable, short press , the meter displays M+ icon and data numberings on LCD, and saves the measurement data. In Pic-7, the meter has saved the first




set of the measurement data. Short press  again to keep logging more data.



Pic-7

3.6 Data Recalling


In measurement mode, long press  to recall the last set of saved data. The meter displays RM icon and data numberings. In Pic-8, the meter is recalling the 28th set of data. Keep pressing  or  to recall the data successively.

Hold  or  to quickly recall the data. Short press  to return to measurement mode.



Pic-8

3.7 Delete Storage




The meter can store 50 sets of data. Once the storage is full, if user press  again, the **FUL** icon will be displayed on LCD (see Pic-9). The storage needs to be deleted in parameter setting P4 to save new data. The numberings in M+ indicates the total number of stored data.



Pic-9

The numberings in **RM** indicates the number of stored data in the current mode (pH/mV). For example, if 20 sets of data is stored in pH mode, and 10 sets in mV mode, then the numberings for M+ will be **M+30** in both pH and mV mode; the numberings for **RM** in pH mode would be **RM20**; in mV mode would be **RM10**.

3.8 Max/Min Mode

Use this function to display the maximum or minimum records out of readings in a period of time. In measurement mode, short press , flashing icons of **MAX/MIN** will show up, indicating the meter has entered the max/min mode. After testing is finished, short press  again, the maximum and minimum values from the past readings since you entered the max/min mode will show up alternately. Short press  to return to the regular measurement mode.

4. pH Calibration

4.1 pH Buffer Solution Series

The meter has 2 series of standard buffer solutions: USA and NIST (see table below). They can be selected in parameter P1 (see Section 6.1).

Calibration Icon		pH Standard Buffer Series	
		USA	NIST
3-Point Calibration	Ⓕ	4.00 pH or 1.68 pH	4.01 pH or 1.68 pH
	Ⓜ	7.00 pH	6.86 pH
	ⓗ	10.01 pH or 12.45 pH	9.18 pH or 12.45 pH

4.2 3-Point Calibration

The meter can adopt 1 to 3 points of calibration. The 1st point must be with 7.00 pH buffer solution (or 6.86 pH in NIST Series). Refer to the following table for details. At the end of 2-point and 3-point calibration, the electrode slope data of acidity range and alkalinity range will be displayed, which indicates the health of your electrode. The closer it is to 100%, the better the condition of the electrode is .

Calibration	USA Series		NIST Series		Icon	When to use
1-point	7.00 pH		6.86 pH		Ⓜ	Error Tolerance > ±0.1 pH
2-point	Option A	1st pt: 7.00 pH 2nd pt: 4.00 pH or 1.68 pH	Option A	1st pt: 6.86 pH 2nd pt: 4.01 pH or 1.68 pH	Ⓕ Ⓜ	Range < 7.00 pH
	Option B	1st pt: 7.00 pH 2nd pt: 10.01 pH or 12.45 pH	Option B	1st pt: 6.86 pH 2nd pt: 9.18 pH or 12.45 pH	Ⓜ ⓗ	Range > 7.00 pH
3-point	1st pt: 7.00 pH 2nd pt: 4.00 or 1.68 pH 3rd pt: 10.01 or 12.45 pH		1st pt: 6.86 pH 2nd pt: 4.01 or 1.68 pH 3rd pt: 9.18 pH or 12.45 pH		Ⓕ Ⓜ ⓗ	Range: 0 to 14.00 pH

4.3 How often to calibrate

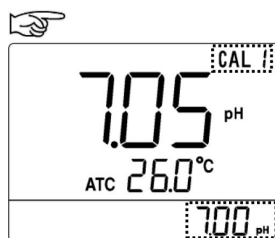
The frequency that you need to calibrate your meter depends on the tested samples, condition of electrodes, and the requirement of the accuracy. For higher accuracy measurement (error tolerance $< \pm 0.03\text{pH}$), the meter is recommended to be calibrated at least once a week; For lower accuracy measurement (error tolerance $> \pm 0.1\text{pH}$), calibration is only necessary once a month. However, in the following cases, the meter must be re-calibrated before measurement:

- The electrode hasn't been used for a long time or when a new electrode is connected.
- After measuring strong acidic ($\text{pH} < 2.00$) or strong alkaline ($\text{pH} > 12.00$) solutions.
- After measuring fluoride-containing solution and strong organic solution.
- There is a significant temperature difference between the test sample and the buffer solutions.

4.4 How to calibrate (use 3-point calibration 7.00/4.00/10.01 as an example)


4.4.1 Power on the meter. Long press to enter calibration mode.

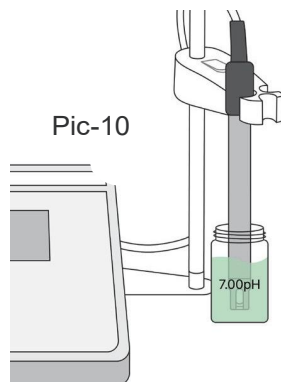
CAL1 icon will flash in the upper right corner. 7.00 pH will flash in the lower right corner, reminding you to use pH 7.00 buffer to perform the 1st point of calibration.





Note:

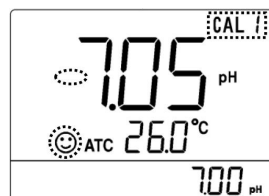
The 1st point calibration must be with 7.00 pH (or 6.86 pH if using NIST series standard buffers).



4.4.2 Screw off the electrode storage vial and use pure water to rinse off electrode; Blot dry the electrode with Kimwipe/filter paper/clean tissue to remove excess water (**NEVER** rub the glass membrane). Then dip electrode into pH 7.00 buffer at least 1 inch deep (see pic-10), stir it for a few seconds and let it stand. Then wait for the reading to stabilize. Pressing  before the reading is stable will generate **Er2** (refer to Section 6.3).



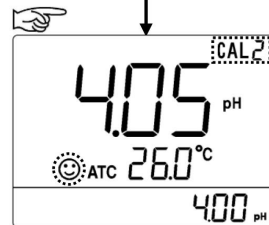
4.4.3 When the reading is stabilized,  appears and stays. Short press 



to calibrate the 1st point. **End** icon appears after calibration is finished. In the meantime, **CAL2** will start flashing, and **4.00 pH & 10.01 pH** will flash alternately, reminding you to perform the 2nd point calibration.

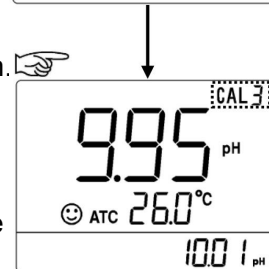



4.4.4 Use 4.00 pH buffer and follow the steps in 4.4.2. When the reading is stabilized,  appears and stays. Short press 

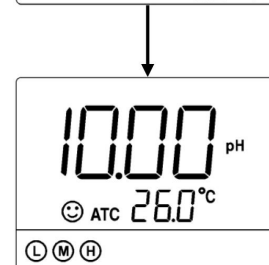
to start calibration. **End** icon and the electrode slope of acidity range will show up after calibration is finished. In the meantime, **CAL3** will start flashing, and **10.01 pH** will flash at the lower right, reminding you to continue to the 3rd point calibration.



4.4.5 Use pH 10.01 buffer and follow the steps in 4.4.2. When the reading is stabilized,  shows up and stays. Short press  to start calibration. **End** icon and the electrode slope of alkalinity range will display after calibration is finished. The meter returns to measurement mode, the calibration icons **L M H** will show up, indicating the low, medium, and high points are all calibrated.



4.4.6 During calibration, short press  to exit calibration and return to measurement mode.






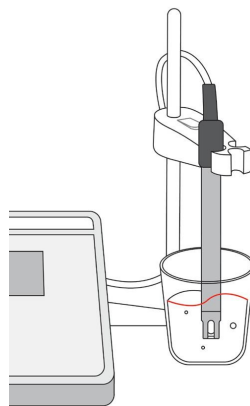
NOTE:

Pure water refers to distilled or deionized water. RO water is the alternative

5. pH Measurement

5.1 How to Take pH Measurement

- 5.1.1** Power on the meter to enter measurement mode.
- 5.1.2** Rinse the electrode with pure water for a few seconds. Blot dry the electrode with Kimwipe / filterpaper / clean tissue.
- 5.1.3** Submerge the electrode into your sample solution at least 1 inch deep (see pic-11). Stir the electrode for a few seconds and let it stand still. Wait for the reading to get fully stabilized (☺ appears and stays) and then record it as the pH measurement.
- 5.1.4** In measurement mode, short press  to save the stabilized reading as the pH measurement. Long press  to recall all the saved data. In data recalling mode, short press  to return to measurement mode. For details of data management, refer to Section 3.5 to 3.7.
- 5.1.5** To use the Max/Min measurement mode, refer to Section 3.8.
- 5.1.6** For mV / ORP measurement, refer to Section 9.
- NOTE:** Pure water refers to distilled or deionized water. RO water is the alternative.



5.2 Find the Right pH Electrode



Consistently taking accurate and precise pH measurement is not an easy job to do. Finding the right pH electrode suitable for your specific application is the key. This meter comes with the 201T-F pH/temp. electrode, which will only provide accurate pH measurement in general water solutions, whose pH range is 2 to 12 (not too acidic nor too alkaline), temperature between 10°C and 50°C (50°F to 122°F), and contain a medium level of ion concentration (conductivity range: 100 $\mu\text{S}/\text{cm}$ to 10,000 $\mu\text{S}/\text{cm}$ or salinity level < 0.5%). Please refer to **Section 10** for ideal pH electrodes to use for various applications.

5.3 Tip to Minimize Measurement Error

According to the pH isothermal measurement principle, the closer the test sample's temperature is to the calibration solution's, the lower the


measurement error. This principle is recommended to follow when conducting tests for the best result. Example: If users were to test samples at 100°F, we recommend warming up the calibration solutions to be close to that temperature before performing calibration in order to minimize the error caused by different temperatures.

5.4 Manual Temperature Compensation

The default pH electrode has a built-in temperature sensor so the temperature compensation will be automatic (**ATC** on screen). When you use a pH electrode without a temperature sensor, you would want to use the manual temperature compensation function to lower the pH measurement error. First, use an external thermometer to get the temperature of your sample; Then power on the meter (**MTC** on screen when there is no temperature sensor connected). In measurement mode, short press  or  to adjust the temperature to the correct value to achieve the manual temperature compensation.

5.5 Self-Diagnosis

In the process of calibration and measurement, the meter has a self-diagnosis function (see the table below). For troubleshooting, refer to Section 11.

Display Icon	Information
<i>Er 1</i>	Failed calibration.
<i>Er 2</i>	pH electrode zero electric potential out of range (<-60mV or >60mV)
<i>Er 3</i>	pH electrode slope is out of range (<85% or >110%)
<i>Er 4</i>	Press  key when reading is not stable during calibration.
<i>Er 5</i>	During calibration, the measuring value is not stable for ≥ 3min.



5.6 Factory Default Settings








The instrument has a function of returning to factory default settings, which can be set up in P5 (refer to section 5.6). This is to restore the meter to theoretical value (zero potential being 0 mV, slope 100%), and set all the parameters to default settings. When the meter's calibration or measurement is performing abnormally, you can try this function, and then perform calibration and measurement again. Please note that this function is irreversible once used.

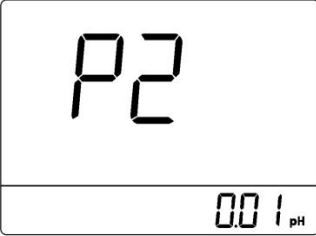





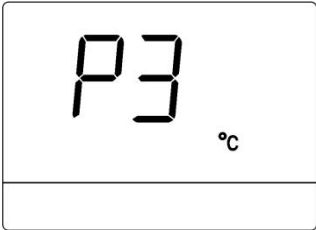





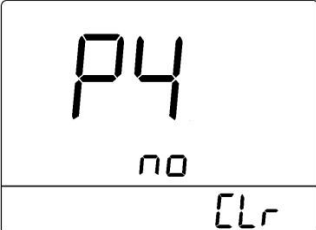





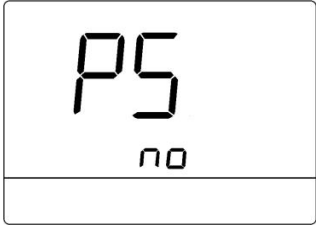




6. Parameter Settings

Symbol	Parameter setting content	Parameter	Factory default setting
P1	Select pH buffer series	USA - NIST	USA
P2	Select resolution	0.1/0.01 pH	0.01 pH
P3	Select temperature unit	°C - °F	°C
P4	Clear stored data	No-Yes	No
P5	Return to factory default	No-Yes	No

6.1 How to do the parameter setting

In measurement mode, long press  to enter parameter setting P1. Then press  to change menu from P1 to P2...P5. For details, please see the following table.

	<p>P1 — Select pH buffer series (USA— NIS)</p> <ol style="list-style-type: none"> 1. Long press  to enter P1. 2. Short press , USA flashes, short press  to select USA or NIS, short press  to confirm; USA— USA Series; NIS— NIST Series 3. Short press  to enter P2 or short press  to return to measurement mode.
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 <p>The LCD display shows 'P2' in large digits. Below it, a horizontal line separates the display from '001 pH'.</p>	<p>P2 — Select resolution (0.01—0.1)</p> <ol style="list-style-type: none"> 1. Short press  , 0.01 flashes, short press  to select 0.01 or 0.1, short press  to confirm; 2. Short press  to enter P3 or short press  to return to measurement mode.
 <p>The LCD display shows 'P3' in large digits. Below it, a horizontal line separates the display from '°C'.</p>	<p>P3 — Select temperature unit (° C—° F)</p> <ol style="list-style-type: none"> 1. Short press  , °C flashes, short press  to select °C or ° F, short press  to confirm; 2. Short press  to enter P4 or Short press  to return to measurement mode.
 <p>The LCD display shows 'P4' in large digits. Below it, 'NO' is displayed. A horizontal line separates the display from 'CLR'.</p>	<p>P4 — Clear stored data (No—Yes)</p> <ol style="list-style-type: none"> 1. Short press  , No flashes, short press  to select No or Yes, short press  to confirm; 2. Short press  to enter P5 or short press  to return to measurement mode.
 <p>The LCD display shows 'P5' in large digits. Below it, 'NO' is displayed.</p>	<p>P5 — Restore to factory default setting (No—Yes)</p> <ol style="list-style-type: none"> 1. Short press  , No flashes, short press  to select No to Yes, short press  to confirm; The meter returns to measurement mode. 2. If not selecting Yes, short press  to return to measurement mode.

7. Electrode Cleaning

The meter is only as accurate as the electrode is clean. Always thoroughly rinse off the electrode before and after each measurement with distilled water or deionized water in a container or with a wash bottle.

To remove excessive water, just shake them off or blot dry with Kimwipe / filter paper/ clean tissue. **Never rub** the glass membrane of the electrode. Otherwise static electricity will be generated and cause measurement error.

For tough contaminants staying on the glass membrane or junction, refer to the table-8 for the proper cleaning procedures for different contaminants:

Table-8

Type of Contamination	Cleaning Agent	Soaking Time
Lipophilic substances, e.g. oil and fat deposits	Dish soap water	5 – 10 min
Proteins	Electrode Cleaning Solution	30 – 60 min
Inorganic coatings such as hydrocarbons	Commercially available glass cleaning solutions	5 – 10 min
Hard, scale-type calcium deposits	Electrode Cleaning Solution	5 – 10 min
Alkaline coatings	Electrode Cleaning Solution	5 – 10 min
Acidic coatings	0.1M NaOH solution	5 – 10 min
Sulfide-containing solutions	Thiourea	30– 60 min, leave until junction discoloration disappears.
Unknown substances	Electrode Cleaning Solution	30 – 60 minutes

NOTES:

Use a soft brush to help thoroughly clean off the contaminants. After the cleaning procedure, the pH electrode should always be soaked in 3M KCl solution for 12-24 hours for re-hydration. A re-calibration is also necessary before a new pH measurement.

8. Electrode Storage


8.1 Add 3M KCL soaking solution to the electrode storage vial and store the electrode in it. Twist on the vial locking ring tightly. If the 3M KCL soaking solution is contaminated, replace it with fresh solution. As a rule of thumb, replace the soaking solution on a monthly basis.

8.2 If you ever find white crystals outside the storage vial, it is perfectly normal. It is the 3M KCL soaking solution or the reference electrolyte that crystallizes over time by its nature. Just rinse them off and add in new soaking solution. This chemical is not poisonous or dangerous, and the electrode's performance will not be affected.

8.3 NEVER store the electrode in pure water like tap, RO, distilled, or deionized water as they could damage the pH electrode. If this happens, immediately soak the pH electrode in 3M KCL soaking solution overnight, then re-calibrate it before use.

9. mV Measurement

9.1 mV and ORP measurement

In measurement mode, short press  to switch between pH and mV measurement mode. If a pH electrode is connected, the mV value stands for the original millivolt value of pH measurement.

If ORP measurement is needed, users need to connect an ORP electrode (e.g. 301Pt-C combination ORP electrode) and perform the test. ORP is short for Oxidation Reduction Potential, a measure of the cleanliness of the water and its ability to break down contaminants. The unit of ORP value is mV.

9.2 Notes on ORP measurement

ORP measurement does not require calibration. When you are not sure about ORP electrode's condition, test an ORP standard solution to see whether the ORP electrode works properly. When the measurement error is $\leq \pm 15$ mV to the standard value at certain temperature, the ORP electrode is in good condition. The table below is the data of standard ORP solution for 222 mV and 650 mV at different temperatures.

°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C
222 mV	242 mV	235 mV	227 mV	222 mV	215 mV	209 mV	200 mV	192 mV	185 mV
650 mV	672 mV	665 mV	657 mV	650 mV	642 mV	635 mV	627 mV	620 mV	612 mV

10. Ideal pH Electrodes for Various Applications



Applications	Ideal pH Electrodes to Use
General water solutions	201T-F, LabSen 211/213
Dirty liquids such as wastewater , emulsions , suspensions , slurries, etc.	LabSen 331/333, LabSen 231
Biotechnology and pharmaceuticals	LabSen 821/823, LabSen 241-3SP
High-Temperature solutions	LabSen 861/863
Low-temperature liquid	LabSen 881
High salinity/ Strong alkaline solutions	LabSen 841/843
Complex and caustic solutions (e.g. electroplating solutions)	LabSen 861/863
Pure Water (distilled / deionized / RO / drinking / well / storm / boiler water)	LabSen 801/803
Liquid food and beverage (milk, yogurt, sauce, jam, etc.)	LabSen 821/823

Micro-volume liquid samples	LabSen 241-3S, LabSen 241-3SP
Semi-micro volume liquid samples	LabSen 243-6, LabSen 241-6
Frozen/raw meats	LabSen 761/763
Soil direct test	LabSen 551/553
Solid or semi-solid samples (cheese ,dough , fruits,sushirice, meat products, etc.)	LabSen 751/753
Strong acid solutions, HF containing solutions (HF concentration<2000 ppm)	LabSen 831/833
Surface test (skin, paper, culture medium)	LabSen 371/373
TRIS buffer solutions	LabSen 213/211/221/821/823
Viscous liquid e.g. skincare products, coatings, syrups, sugarcanejuice, etc.	LabSen 851-S / 853-S / 851-H / 853-H
Organic solvents, non-aqueous solutions	LabSen 871/873

Note:

Every pH electrode gradually ages and will eventually fail. A typical service life of a pH electrode is 1-2 years depending on many factors such as frequency of use, nature of test samples, how well it is maintained , etc. We recommend replacing your pH electrode at least every 1 to 2 years to guarantee the optimal performance.

11. Troubleshooting Guide

Trouble	Potential Causes	How to Fix
Calibration Error	Incorrect calibration order (Er1)	Always calibrate pH 7 first, then pH 4 or pH 10. Refer to Section 4.4.
	Calibration solutions are in poor condition (Er1)	Make sure your calibration standard solutions are fresh and clean, and made by a legitimate manufacturer.
	Contaminated electrode (Er1)	Thoroughly clean off the electrode. Refer to Section 7.
	Aged electrode (Er3)	Replace the electrode.
	Dried-out electrode (Er1)	Soak in the soaking solution overnight to restore.
	Electrode is not in full contact with solutions (Er1)	Make sure the storage vial is taken off and the electrode is fully immersed in the solution (above the junction).
	Air bubbles around the sensor (Er1)	Make a quick stir in the solution to remove air bubbles.
	Pressing  too fast (Er4)	Wait for the reading to be fully stabilized before pressing  to finish the calibration
Reading is always slowly changing, won't stabilize. (Er5)	Contaminated electrode	Thoroughly clean off the electrode. Refer to Section 7.
	Clogged junction	Refer to Section 7 to thoroughly clean off the junction.
	Aged electrode	Replace the electrode.
	Testing low ionic strength solutions e.g. distilled water and deionized water	Use LabSen 801 or LabSen 803 pure water pH electrode.

Display similar readings in any solutions or stuck at 7.00 pH	Broken electrode	If you don't see any physical damage of the electrode and it's within the 6-month electrode warranty, contact us for warranty fulfillment; If there is visible damage, replace the electrode.
	Instrument defect	Contact us for warranty fulfillment

Trouble	Potential Causes	How to Fix
Jumping Readings (generating random numbers)	Electrode is not in full contact with solutions	Make sure the storage vial is taken off and the electrode is fully immersed in the solution (above the junction).
	Air bubbles around the sensor	Make a quick stir in the solution to remove air bubbles.
	Electrode is not properly connected or the connector is broken.	1. Check the electrode's connector, make sure it's not broken and is correctly connected. 2. Screw on the connector cap to protect the connector when no electrode is connected.
Calibration is successful, but I think measurement is not accurate	Aged electrode	Replace the electrode.
	Air bubbles around the sensor	Make a quick stir in the solution to remove air bubbles.
	Wrong buffer standard is selected	Match the buffer standard with the calibration buffers you use by changing the settings in P1.
	Clogged junction	Refer to Section 7 to thoroughly clean off the junction.

	Comparison with other meters, test strips, or drop tests	<p>1.To compare with other meters, make sure to perform a 2-point calibration for all meters in the same standards, then measure a 3rd standard solution. Whichever gives more accurate reading in the 3rd standard solution is the more accurate meter.</p> <p>2.Test strips or drop tests' accuracy is not comparable to pH meters'.</p>
	Calibration solutions are in poor condition	Make sure your calibration standard solutions are fresh and clean, and made by a legitimate manufacturer.
	The electrode is not suitable for your test sample or testing environment	Contact us to find the most appropriate electrode for your specific application.

12. Limited Warranty

We warrant this instrument to be free from defects in material and workmanship and agree to repair or replace free of charge, at option of **VEVOR**, any malfunctioned or damaged product attributable to responsibility of **VEVOR** for a period of ONE YEARS (SIX MONTHS for the electrode) from the delivery.

This limited warranty does NOT cover any damages due to:

1. Accidental damage
2. Transportation
3. Storage
4. Improper use
5. Failure to follow the user manual or to perform any preventive maintenance
6. Unauthorized repair or modifications
7. Normal wear and tear
8. Other external causes or actions beyond our reasonable control

CORRECT DISPOSAL

This product is subject to the provision of European Directive 2012/19/EU. The symbol showing a wheellie bin crossed through indicates that the product requires separate refuse collection in the European Union. This applies to the product and all accessories marked with this symbol. Products marked as such may not be discarded with normal domestic waste, but must be taken to a collection point for recycling electrical and electronic devices.

Warning-To reduce the risk of injury, user must read instructions manual carefully.

Must be used with a grounded outlet. Do not use extension cords. Please properly keep product. Check whether the product is abnormal before use. If it is abnormal, please stop using it

Product Application

This instrument, which uses a pH indicator electrode to measure the pH of solutions, food, soil, etc. via potentiometry, has its pH measurement accuracy as a key indicator for evaluating its performance.

Product Usage Environments and Target Users

Laboratory Use

1. pH Pen

Application Scenarios: Professional water quality testing, hydroponics, swimming pools, etc.

Features: Special-purpose replaceable electrode; three-point calibration; accuracy: 0.1 pH.

2. Food pH Pen

Application Scenarios: Professional food testing.

Features: Special-purpose replaceable electrode; three-point calibration; accuracy: 0.1 pH.

3. pH Tester

Application Scenarios: Laboratory research.

Features: Highest-grade electrode requirement; replaceable electrode; three-point calibration; accuracy: 0.1 pH; data storage function; multi-electrode port compatibility.

Soil Testing

Soil pH Meter

Application Scenarios: Farms, manors, planting, etc. (for measuring soil

pH value) .

Features: Special-purpose electrode for soil testing; no calibration required; low accuracy requirement.

Household Use

pH Pen

Application Scenarios: Household water testing.

Features: Low-grade non-replaceable electrode; no calibration function; low measurement accuracy.

FCC Information:

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment!

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This product may cause harmful interference.
- 2) This product must accept any interference received, including interference that may cause undesired operation.

WARNING: Changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

Note: This product has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules, These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This product generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the distance between the product and receiver.

- Connect the product to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

Power Supply Adapter Information

1. The power supply voltage of the adapter allows fluctuations of up to $\pm 10\%$.
2. Operating temperature and humidity: general operating ambient temperature 5-35°C, humidity $\leq 85\%RH$.
3. Indoor use
4. POLLUTION DEGREE: 2
5. Altitude: up to 2000m

