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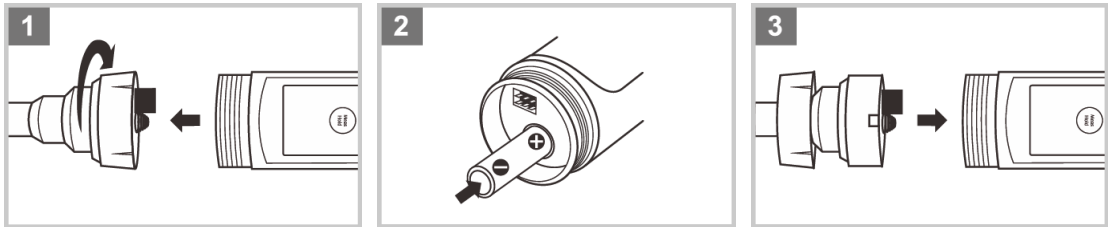
[www.pce-instruments.com/english](http://www.pce-instruments.com/english)  
[www.pce-instruments.com](http://www.pce-instruments.com)

## PCE-PH 28L Pocket pH Meter **Instruction Manual**

Thank you for selecting the PCE-PH 28L pocket pH meter. This manual provides a step-by-step guide to help you operate the meter, please carefully read the following instructions before use.

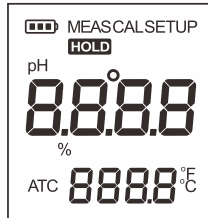
### Installing the Batteries

- Twist the electrode collar counter clockwise, pull the electrode away from the meter.
- Insert two AAA batteries into the battery compartment, note polarity.
- Align the slot on electrode, gently push the electrode into the meter.
- Twist the electrode collar clockwise until it is tight.




### Display

PCE-PH 28L pocket pH meter is equipped with an easy-to-read LCD display that used to show the measured values and mode icons. The following table describes the function of each icon.

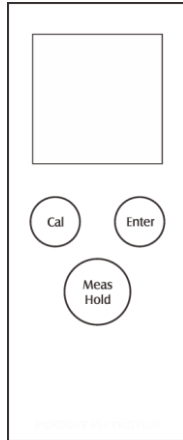


### INDEX:

ICON	DESCRIPTION
MEAS	Indicates the meter is in the measurement mode.
CAL	Indicates the meter is in the calibration mode.
SETUP	Indicates the meter is in the setting mode.
HOLD	Indicates the measuring value has been locked.
ATC	Indicates the temperature compensation is enabled.
	When the battery is depleted, the icon will disappear.

## Keypad

The meter has a succinct membrane keypad, names and symbols describe each function key controls.

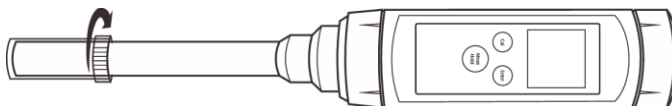


### INDEX:

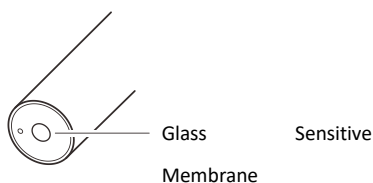
KEY	FUNCTION
MEAS/HOLD	<ul style="list-style-type: none"><li>• Switches the meter ON/OFF.</li><li>• Locks the measured value, press the key again to resume measuring.</li><li>• Exits the calibration or setting and returns to the measurement mode.</li></ul>
CAL	<ul style="list-style-type: none"><li>• Press the key to start the calibration.</li><li>• Press and hold the key to enter the setup menu.</li><li>• In the setting mode, press the key to select the default option.</li></ul>
ENTER	<ul style="list-style-type: none"><li>• Confirms the calibration or selected option.</li></ul>

## Prior to Use

- Remove the electrode protective cap from the meter.



- If the glass sensitive membrane on the electrode dries out, soak the electrode in 3M KCL solution for at least 15 minutes.



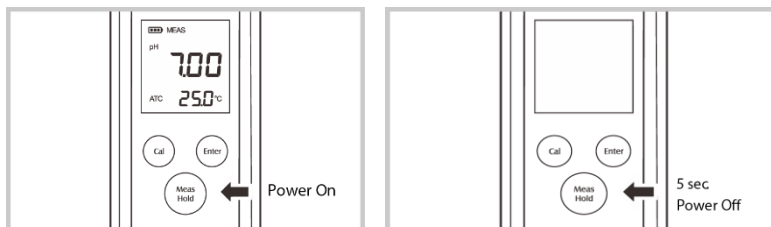
## Preparing the pH Buffer Solutions

- Open the pH7.00 buffer packet, place the reagent into a 250ml volumetric flask. Pour the distilled water 250ml to scale line, mix the solution until the reagent is completely dissolved.
- Preparation of pH4.01 and 10.01 standard buffer solutions are the same as above. Prepared standard buffer solutions should be stored in hermetically sealed glass containers.

pH Buffer 10	pH Buffer 7	pH Buffer Powder
<b>pH10.01</b>	<b>pH7.00</b>	<b>pH4.01@25°C</b>
250ml	250ml	250ml

## Switching the Meter On and Off

- Press the **Meas** key to switch on the meter, the display shows measured value.
- Press and hold the **Meas** key for 5 seconds, the meter will switch off.
- To enable the Auto-Power Off function, please refer to chapter SETUP MENU.



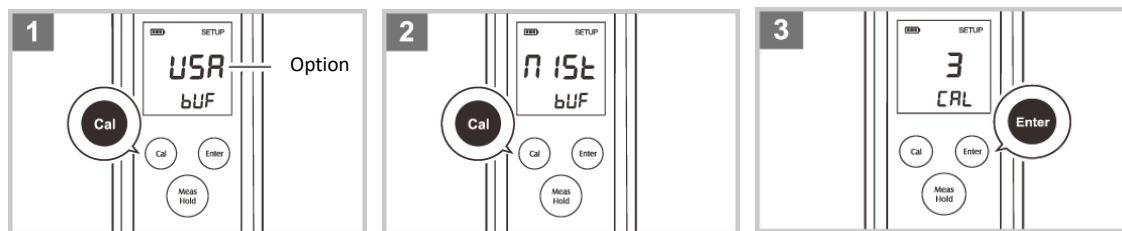
## Setup Menu

PCE-PH 28L pocket pH meter contains an integrated setup menu that is used to customize the displayed option to meet measurement requirements.

MENU	DESCRIPTION	OPTIONS		DEFAULT
bUF	Set the pH buffer group for calibration and auto-recognition.	USA	USA (pH4.01/7.00/10.01)	USA
		n 15t	NIST (pH4.01/6.86/9.18)	
CAL	Set the number of calibration points.	1	1 point	2 points
		2	2 points	
		3	3 points	
UN It	Set the default temperature unit.	°C	Degrees Celsius	°C
		°F	Degrees Fahrenheit	
°C	Calibrate the temperature.	CAL	---	---
HOLD	When the option is enabled, the meter will automatically sense a stable reading and lock the measurements.	YES	Enable	Disable
		NO	Disable	
OFF	When the option is enabled, the meter will automatically switch off if no key is pressed within 8 minutes.	YES	Enable	Disable
		NO	Disable	
rSt	Reset the meter to factory default settings.	YES	Enable	Disable
		NO	Disable	

### Setting the default option

1. Press and hold the **Cal** key for 3 seconds to enter the setup menu, the meter shows a menu item and default option.
2. If necessary, press the **Cal** key again to select the desired option.
3. Press the **Enter** key to confirm, the meter moves to the next menu item.
4. Repeat the steps above until the meter returns to the measurement mode. Setting is completed.



### ⓘ

- During the setting process, press the **Meas** key, the meter will exit the setup menu and return to the measurement mode.
- If you do not want to calibrate the temperature, press the **Enter** key to skip the °C/CAL or °F/CAL option.
- The Reset function will restore the meter back to factory default settings. If enabled, all of the calibration data and selected parameters will be lost or reset, the meter must be recalibrated.

## pH Calibration

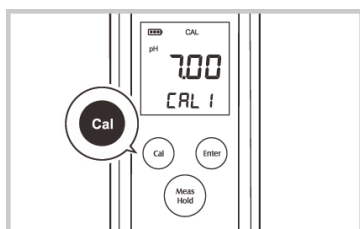
PCE-PH 28L pocket pH meter allows up to 3 points calibration. We recommend that you perform at least 2 points calibration for high accuracy measurement. The meter will automatically recognize and calibrate to following standard buffer values.

USA Standard Buffers	pH4.01, 7.00, 10.01
NIST Standard Buffers	pH4.01, 6.86, 9.18

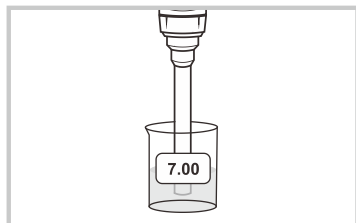
Single point calibration should only be carried out with pH7.00 or pH6.86, otherwise calibration will not be accepted.

The meter must be calibrated prior to first use or new electrode replaced. To ensure accuracy, regular calibration is recommended. **DO NOT** reuse the pH buffer solution after calibration, contaminants in solution will affect the calibration and eventually the accuracy of the measurement.

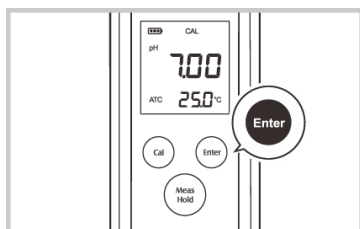
### Single point calibration



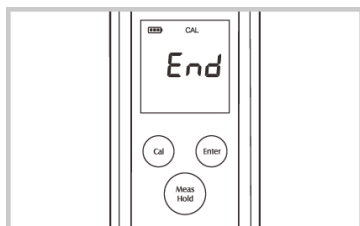
- 1.1 Make sure that you have selected 1 point calibration in the setup menu.
- 1.2 Rinse the electrode with distilled water. Press the **Cal** key, the meter shows pH7.00/CAL1 (or pH6.86/CAL1).



- 1.3 Place the electrode into the pH7.00 (or pH6.86) buffer solution, the end of the electrode must be completely immersed into the calibration solution. Stir the electrode gently to create a homogeneous solution.

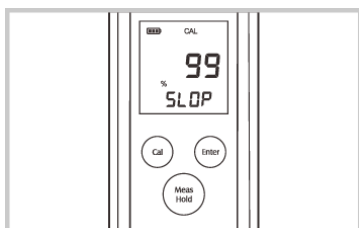
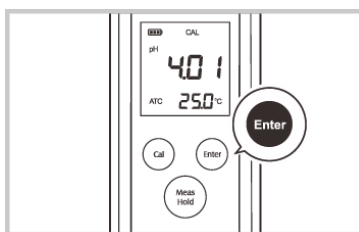
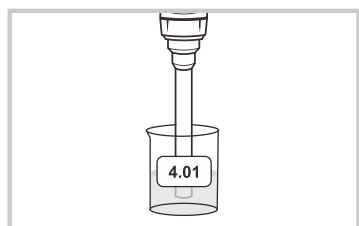
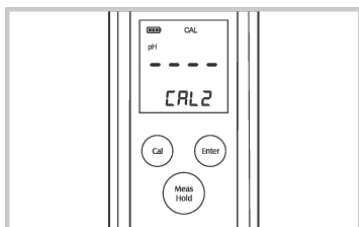


- 1.4 Press the **Enter** key, the meter begins the calibration.



- 1.5 Wait for the reading to stabilize, the display automatically shows END. Single point calibration is completed.

## 2 points calibration



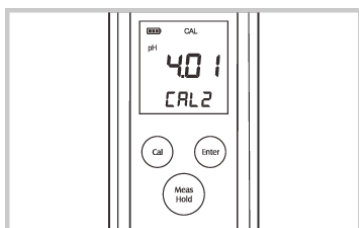
- 2.1 Make sure that you have selected 2 points calibration in the setup menu.
- 2.2 Repeat the steps 1.2 to 1.4 above. When the first calibration point is completed, the display will show CAL2. The meter prompts you to continue with second point calibration.

- 2.3 Rinse the electrode with distilled water. Place the electrode into the pH4.01 or 10.01 (pH4.01 or 9.18) buffer solution. Stir the electrode gently.

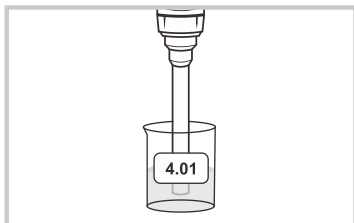
- 2.4 Press the **Enter** key, the meter automatically recognizes the current calibration solution and begins the calibration.

- 2.5 Wait for the reading to stabilize, the display automatically shows the electrode slope (e.g. 99%) and END. Second point calibration is completed.

## 3 points calibration



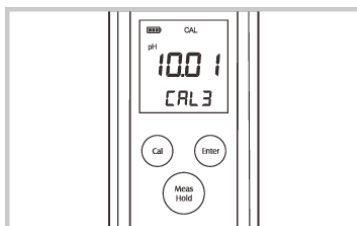
- 3.1 Make sure that you have selected 3 points calibration in the setup menu.
- 3.2 Repeat the steps 1.2 to 1.4 above. When the first calibration point is completed, the display will show pH4.01/CAL2. The meter prompts you to continue with second point calibration.



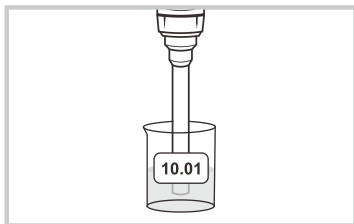
- 3.3 Rinse the electrode with distilled water. Place the electrode into the pH4.01 buffer solution. Stir the electrode gently.



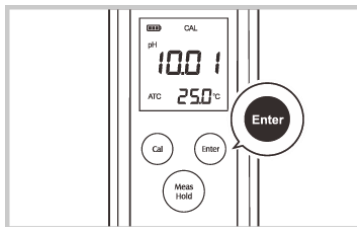
- 3.4 Press the **Enter** key, the meter begins the calibration.



- 3.5 Wait for the reading to stabilize, the display automatically shows the electrode slope and pH10.01/CAL3 (or pH9.18/CAL3).



- 3.6 Rinse the electrode with distilled water. Place the electrode into the pH10.01 (or pH9.18) buffer solution. Stir the electrode gently.



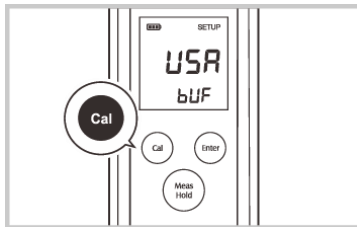
- 3.7 Press the **Enter** key, the meter begins the calibration.  
3.8 Wait for the reading to stabilize, the display automatically shows the electrode slope and END. Calibration is completed.

- ⓘ If you want to exit the calibration, press the **Meas** key, the meter will immediately return to the measurement mode.

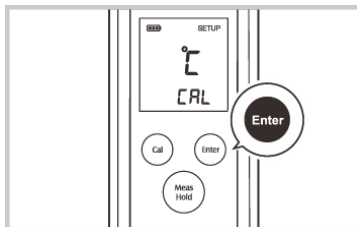


## Temperature Calibration

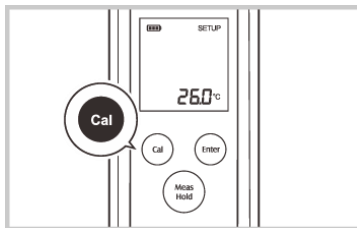
During the measurement process, if the temperature reading displayed differs from that of an accurate thermometer, the meter needs to be calibrated.



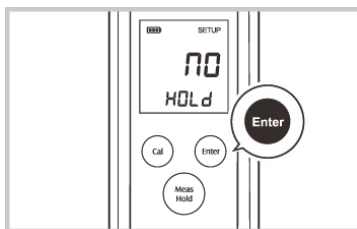
1. Press and hold the **Cal** key for 3 seconds to enter the setup menu.



2. Press the **Enter** key until the meter shows °C/CAL or °F/CAL.



3. Press the **Cal** key to enter the temperature calibration mode.
4. Press the **Cal** key again to modify the temperature value.



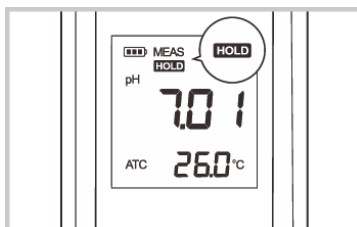
5. Press the **Enter** key to confirm, the meter shows the next menu item.
6. Press the **Meas** key to return to the measurement mode. Calibration is completed.

## pH Measurement

- Rinse the electrode thoroughly with distilled water.
- Place the electrode into the sample solution, stir the electrode gently.
- Record the measured value when the reading is stable.

## Auto-Hold

PCE-PH 28L pocket pH meter contains an Auto-Hold function. If enabled, the meter will automatically sense a stable reading and lock the measurements. The **HOLD** icon appears on the display. If disabled, press the **Hold** key, the meter will immediately lock the displayed value. Press the **Meas** key to resume measuring.



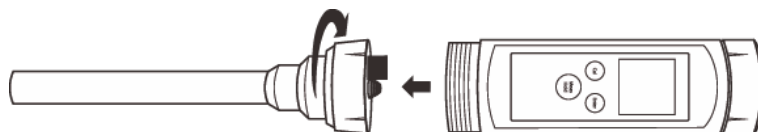
## Electrode Care and Maintenance

- For best results, please always keep the glass sensitive membrane wet.
- Ensure that the electrode is thoroughly washed with distilled or deionized water after use.
- If you do not use the meter for long periods, store the electrode into the 3M KCL solution.

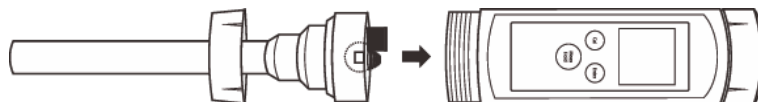
## Electrode Replacement

When the meter fails to calibrate or gives fluctuating readings for calibration standards, you need to replace the electrode.

1. Twist the electrode collar counter clockwise, pull the old electrode away from the meter.



2. Align the slot on the new electrode, gently push the electrode into the meter.





3. Twist the electrode collar clockwise until it is tight. Installation is completed.

## Troubleshooting

LCD DISPLAY	CAUSE	CORRECTIVE ACTION
---	Electrode dried out	Soak the electrode in 3M KCL solution at least 20 minutes.
	Measured value is out of range	Check the electrode whether clogged, dirty or broken.
Err	Incorrect pH buffer solutions	Using the fresh pH buffer solutions for calibration.
	Electrode is broken	Replace the electrode.

## pH Electrode Selection Guide

PCE-PH 28L pocket pH meter installed with a long-reach pH electrode that is used to measure the pH of the small volume samples. If this electrode can not meet your measurement requirements, please refer to the table below to select an applicable sensor.

ELECTRODE	ORDER CODE	DESCRIPTION
		General purpose pH electrode, suitable for measuring the non-viscous, non-corrosive liquids.
		Flat surface pH electrode, suitable for measuring the semisolid substances, e.g., cheese, meats, paper, etc.

## Specifications

pH	Model	PHscan30L
	Range	-1.00~15.00pH
	Accuracy	±0.01pH
	Resolution	0.01pH
	Calibration Points	1 to 3 points
	pH Buffer Options	USA (pH4.01/7.00/10.01) or NIST (pH4.01/6.86/9.18)
	Automatic Buffer Recognition	Yes
Temperature	Range	0~60°C, 32~140°F
	Accuracy	±1°C
	Resolution	0.1°C
	Calibration Points	1 point
General	Temperature Compensation	0~60°C, 32~140°F, Automatic
	Sensor Type	E-PHSCAN-LT-10K
	Operating Temperature	0~60°C, 32~140°F
	Relative Humidity	< 80%
	Power Requirements	2 × 1.5V "AAA" batteries
	Dimensions	240 (L) × 40 (Dia.) mm
	Weight	100g

### Warranty

You can read our warranty terms in our General Business Terms which you can find here:

<https://www.pce-instruments.com/english/terms>.

### Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.



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