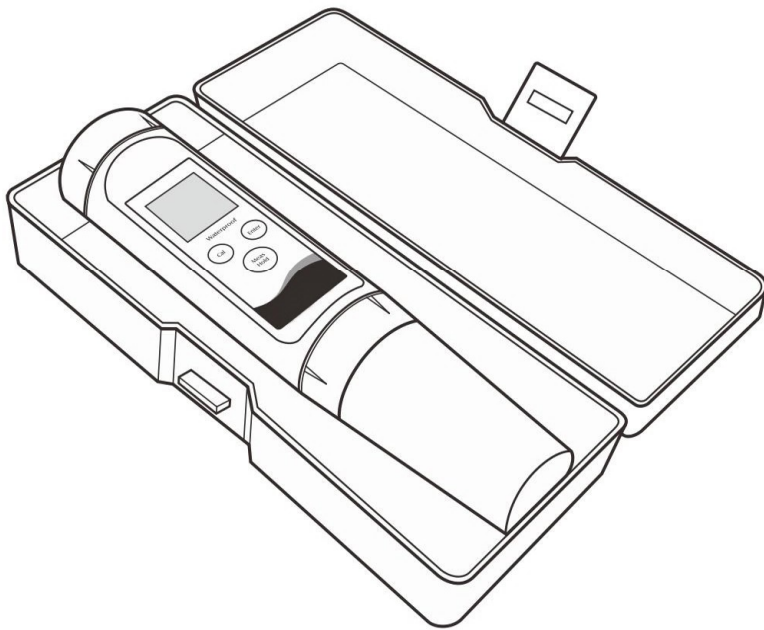


PHscan30S/F Pocket pH Tester

# Instruction Manual



## Overview

Thank you for selecting the PHscan series pocket pH tester. This manual provides a step-by-step guide to help you operate the instrument, please carefully read the following instructions before use.

### Installing the Batteries

1. Twist the electrode collar counter clockwise, pull the electrode away from the tester.
2. Insert the two AAA batteries into the battery compartment, note polarity.
3. Push the electrode into the tester and twist the electrode collar clockwise until tight.



### Keypad

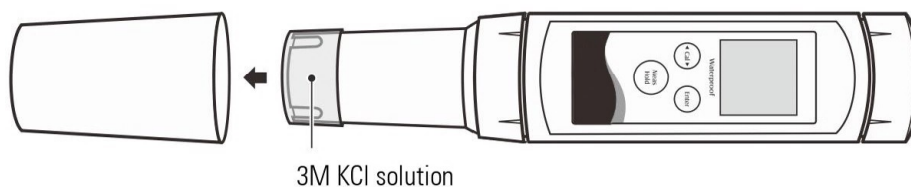
Key	Function
Meas Hold	<ul style="list-style-type: none"> <li>• Switch the tester on or off</li> <li>• Lock the reading, press the key again to resume measurement</li> <li>• Exit the calibration, setting and return to the pH measurement mode</li> </ul>
Cal	<ul style="list-style-type: none"> <li>• Start calibration</li> <li>• Press and hold the key to enter the setup menu</li> <li>• Select an option</li> </ul>
Enter	<ul style="list-style-type: none"> <li>• Confirm the calibration, setting or displayed option</li> </ul>

### Display

Icon	Description
	When the battery voltage falls below the minimum power requirements, the icon automatically disappears
MEAS	Indicates that the tester is in the measurement mode
CAL	Indicates that the tester is in the calibration mode
SETUP	Indicates that the tester is in the setup mode
ATC	Indicates that the automatic temperature compensation is enabled

## Prior to Use

Remove the protective cap from the bottom of the tester. If some salt crystals deposited on the translucent cover, rinse with tap water to clean these deposits. Remove the translucent cover. If tiny air bubbles are present inside the pH-sensitive glass membrane, gently shake the tester downward to remove air bubbles. If the glass membrane has dried out, soak the electrode in 3M KCl or pH 4.01 buffer solution for 30 minutes.



## Switching the Tester On and Off

- Press and hold the **Meas** key for about 5 seconds to switch on the tester.
- Press and hold the **Meas** key to switch off the tester.
- To disable the auto-power off function, refer to the *Setup Menu* section.

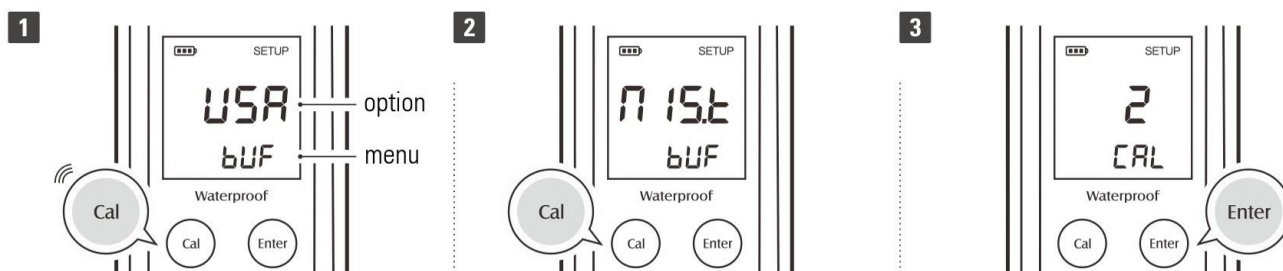
## Setup Menu

The PHscan30 tester contains 7 menu items in the setup menu, the following table describes the functions of each option.

Menu	Description	Options	Description	Default
bUF	Set the pH buffer group for calibration and auto-recognition	USA	USA (pH 4.01, 7.00, 10.01)	USA
		n 15t	NIST (pH 4.01, 6.86, 9.18)	
CAL	Set the number of calibration points	1	1, 2 or 3 points	2 points
		2		
		3		
UN It	Set the temperature unit	°C	Degrees Celsius	°C
		°F	Degrees Fahrenheit	
CAL	Calibrate the temperature	°C	Reading ±10°C/°F	---
		°F		
HOLD	When the option is enabled, the tester will automatically sense a stable reading and lock the measurement	YES	Enable	Disable
		NO	Disable	
OFF	When the option is enabled, the tester will automatically switch off if no key is pressed within 8 minutes	YES	Enable	Enable
		NO	Disable	
r 5t	Reset the tester to factory default settings	YES	Enable	Disable
		NO	Disable	

## Setting the Default Option

1. In the measurement mode, press and hold the **Cal** key for 5 seconds to enter the setup menu.
2. If necessary, press the **Cal** key again to select an option.
3. Press the **Enter** key, the tester saves the current option and moves to the next menu item.
4. Repeat the steps above until the tester returns to the measurement mode.



- During the setting process, press the **Meas** key, the tester will exit the setup menu and return to the measurement mode.
- If you do not need to calibrate the temperature, press the **Enter** key to skip the °C/CAL or °F/CAL option.
- The r 5t option is used to restore the tester back to the factory default settings. If enabled, all of the calibration data and user-specific settings will be deleted or reset, the tester must be recalibrated.

## pH Calibration

The PHscan30 tester allows 1 to 3 points calibration, we recommend that you perform at least 2 points calibration for accurate measurement, the tester will automatically recognize and calibrate to following standard buffer values.

USA standard buffers	pH 4.01, 7.00, 10.01
NIST standard buffers	pH 4.01, 6.86, 9.18

Single point calibration should only be carried out with pH 7.00 or 6.86, otherwise calibration will not be accepted.

For better accuracy, we recommend calibrating the tester regularly. DO NOT reuse the buffer solutions after calibration, contaminants in solution will affect the calibration and eventually the accuracy of the measurement.

### Single Point Calibration

Make sure that you have selected 1 point calibration in the setup menu.

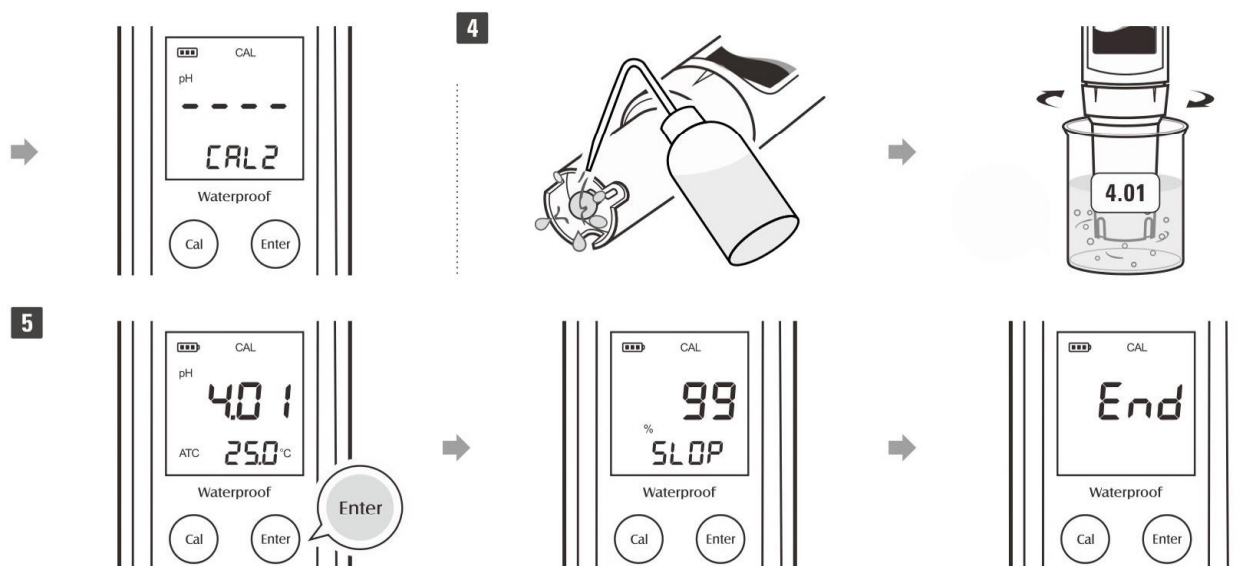
- 1.1 Press the **Cal** key, the tester shows "pH 7.00/CAL 1".
- 1.2 Rinse the electrode with deionized water and place into the pH 7.00 buffer solution. Stir the tester gently to create a homogeneous solution.
- 1.3 Press the **Enter** key to begin the calibration. When the reading has stabilized, the display will show "End". Calibration is completed.



### 2 Points Calibration

Make sure that you have selected 2 points calibration in the setup menu.

- 2.1 Repeat steps 1.1 through 1.3 above. When the first calibration point is completed, the display will show "----/CAL 2", the tester prompts you to continue with second point calibration.
- 2.2 Rinse the electrode with deionized water and place into the pH 4.01 or 10.01 buffer solution. Stir the tester gently.
- 2.3 Press the **Enter** key, the tester automatically recognizes the buffer solution and begins calibration. When the reading has stabilized, the display automatically shows the pH slope (e.g., 99%) and "End". Second point calibration is completed.



### 3 Points Calibration

Make sure that you have selected 3 points calibration in the setup menu.

- 3.1 Repeat steps 1.1 through 1.3 above. When the first calibration point is completed, the display will show "pH 4.01/CAL 2", the tester prompts you to continue with second point calibration.
- 3.2 Rinse the electrode with deionized water and place into the pH 4.01 buffer solution. Stir the tester gently.
- 3.3 Press the **Enter** key to begin the calibration. When the reading has stabilized, the display will show the pH slope and "pH 10.01/CAL 3".
- 3.4 Rinse the electrode with deionized water and place into the pH 10.01 buffer solution. Stir the tester gently. When the reading has stabilized, the display automatically shows the pH slope and "End". Calibration is completed.

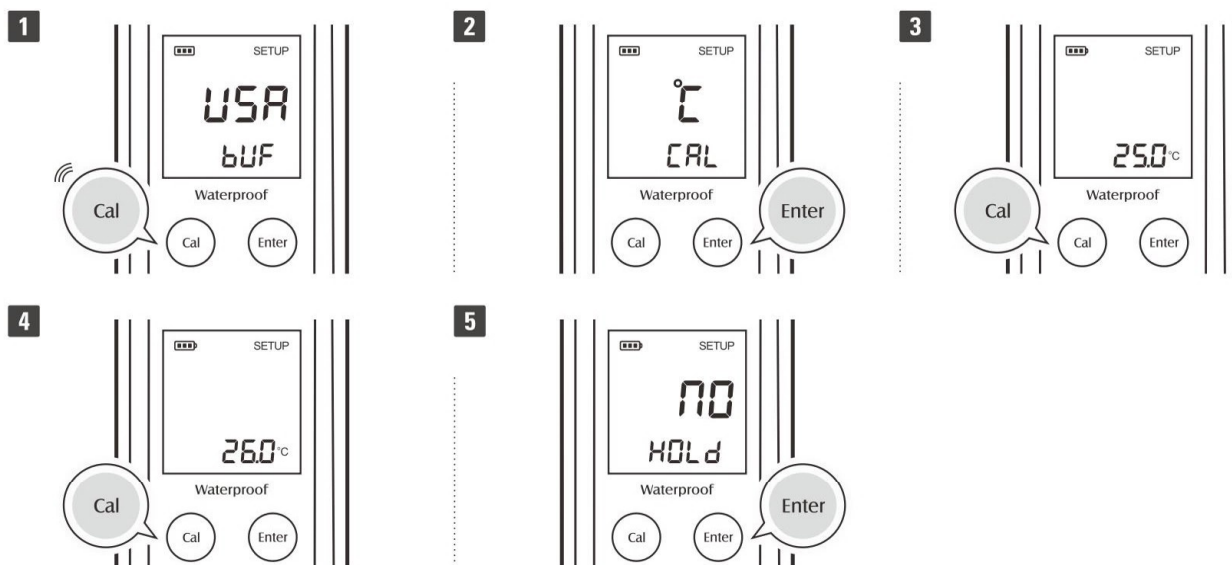


- During the calibration, if the display shows **ERR** indicating that the measured mV value for the current calibration point deviates by more than 60 mV (approximately  $\pm 1$  pH) from the theoretical value of the pH buffer. The calibration will not be accepted. Please check the electrode and ensure the buffer solutions are fresh and uncontaminated.
- To exit the calibration without saving calibrated values, press the **Meas** key.

### Temperature Calibration

The PHscan30 tester has a built-in temperature sensor that used for automatic temperature compensation (ATC). During the measurement, if the measured temperature reading differs from that of an accurate thermometer, the tester needs to be calibrated.

1. Press and hold the **Cal** key to enter the setup menu.
2. Press the **Enter** key until the display shows  $^{\circ}\text{C}/\text{CAL}$  or  $^{\circ}\text{F}/\text{CAL}$ .
3. Press the **Cal** key, the tester enters the temperature calibration mode.
4. Place the electrode into a solution with a known accurate temperature and wait for measurement is stable. Press the **Cal** key to modify the temperature value.
5. Press the **Enter** key to save and press the **Meas** key to return to the pH measurement mode.



### Measurement

Rinse the electrode with deionized water. Place the electrode into the sample solution and stir gently. Note that the end of the electrode must be completely immersed into the solution. Wait for the measurement to stabilize and record the reading.



- During the measurement, never wipe the pH-sensitive glass membrane as this will cause static interference, blot dry with a lint-free tissue to remove waterdrops on electrode.
- If the display shows "----" indicating the measurement exceeds the range, remove the tester from the sample immediately.
- If the **HOLD** option is enabled in the setup menu, the tester will automatically lock a measurement endpoint and show **HOLD** icon. Press the **Meas** key to resume measuring.

## Electrode Maintenance

- Since pH electrode is susceptible to contamination, thoroughly clean with deionized water as necessary after each use.
- If your samples contain the oil or grease, soak the electrode in mild detergent or electrode cleaning solution for at least 15 minutes.
- If you do not use the tester for long periods, store the electrode in 3M KCl solution or electrode storage solution.

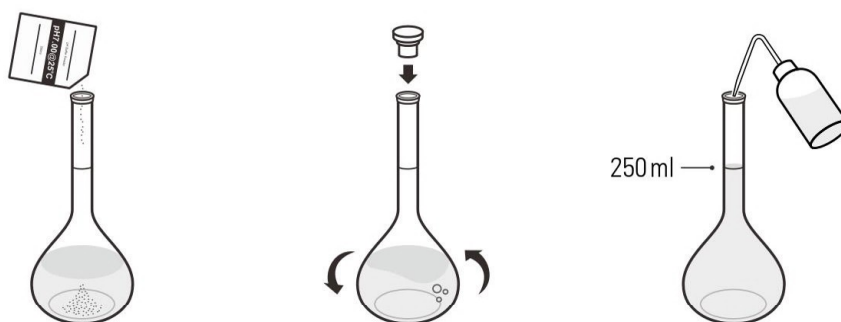
**!** DO NOT store the electrode in distilled or deionized water, which will deplete the hydration layer of the pH-sensitive glass membrane and render the electrode useless.

## Appendix

### Preparation of pH Buffer Solutions

The PHscan30 tester is packaged with pH 4.01/7.00/10.01 buffer sachets required for calibration.

- Open the pH 7.00 buffer sachet, pour the reagent into a 250 ml volumetric flask. Fill the deionized water to the mark and mix the solution until the reagent is completely dissolved.
- Preparation of pH 4.01 and 10.01 buffer solutions are the same as above.
- Prepared standard buffer solutions should be stored in hermetically sealed glass containers and avoid direct sunlight.






### Preparation of Electrode Storage Solution

Dissolve 24.6 grams of analytical grade KCl reagent in 100 ml deionized water. Add pH 4.01 standard buffer and adjust solution to pH 4.

### Optional Accessories

Electrodes

	Order Code	Description
	E-PHscan-ST-10K	<ul style="list-style-type: none"> <li>• Circular pH-sensitive membrane</li> <li>• For measuring the general water samples (non-viscous, non-corrosive liquids)</li> </ul>
	E-PHscan-FT-10K	<ul style="list-style-type: none"> <li>• Flat surface pH-sensitive membrane</li> <li>• For measuring the semisolids, e.g., creams, meats, paper, etc.</li> </ul>
	E-PHscan-LT-10K	<ul style="list-style-type: none"> <li>• Flat surface pH-sensitive membrane</li> <li>• Electrode length: 75 mm (2.95"), diameter: 13.5 mm (0.53")</li> <li>• For measuring the small volume samples, e.g., sample in the test tube</li> </ul>

## Solutions

Order Code	Description
PHCS-USA	pH 4.01/7.00/10.01 buffer solutions, 480 ml
PHCS-OG	Electrode cleaning solution, removes oil and grease contaminants, 480 ml
PHCS-PR	Electrode cleaning solution, removes protein contamination, 480 ml
PHCS-ES	pH electrode storage solution, 480 ml

## Specifications

pH	Model	PHscan30S/F
	Range	-1.00 to 15.00 pH
	Resolution	0.01 pH
	Accuracy	±0.01 pH
	Calibration Point	1 to 3 points
	pH Buffer Option	USA or NIST
	Automatic Buffer Recognition	pH 4.01, 7.00, 10.01 or 4.01, 6.86, 9.18
Temperature	Temperature Compensation	0 to 60°C (32 to 140°F), automatic
	Range	0 to 60°C (32 to 140°F)
	Resolution	0.1°C (0.1°F)
	Accuracy	±1°C (±1.8°F)
Other Specifications	Calibration Point	1 point, reading ±10°C
	Operating Temperature	0 to 50°C (32 to 122°F)
	Storage Temperature	-5 to 60°C (23 to 140°F)
	Relative Humidity	< 80% (non-condensing)
	IP Rating	IP54
	Display	Dual-line LCD, 21 × 21 mm (0.82 × 0.82")
	Power Requirements	2 × 1.5V AAA alkaline batteries
	Auto-Off	8 minutes after last key pressed
Dimensions	185(L) × 40 (Dia.) mm (7.28 × 1.57")	
Weight	100 g (3.5 oz.)	

## Disposal

This tester is required to comply with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC and may not be disposed of in domestic waste. Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.



## Warranty

The warranty period for tester is one year from the date of shipment. Above warranty does not cover the electrode and pH buffer solutions. Out of warranty products will be repaired on a charged basis. The warranty on your tester shall not apply to defects resulting from:

- Improper or inadequate maintenance by customer.
- Unauthorized modification or misuse.
- Operation outside of the environment specifications of the products.

For more information, please contact the supplier.