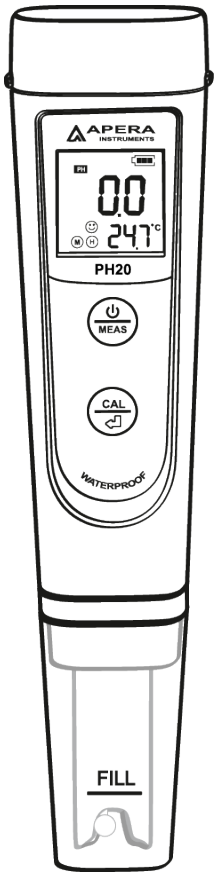
PH20 Value pH Tester

Instruction Manual



RoHS compliant

CE

ISO 9001:2008

IP67 WATERPROOF

APERA INSTRUMENTS, LLC

www.aperainst.com

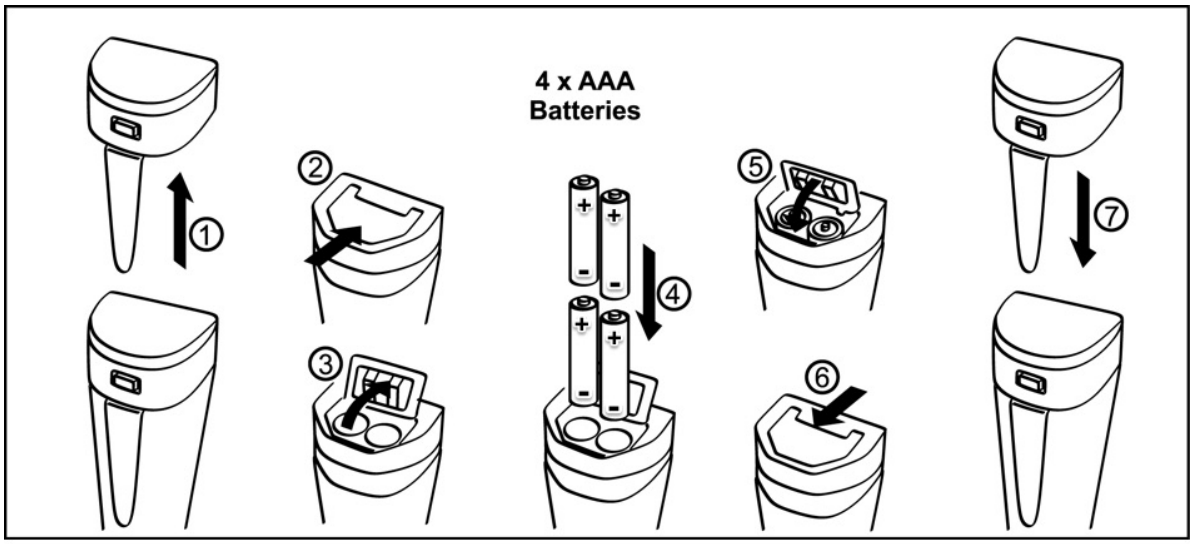
v 3.4

1. Battery Installation

Please install batteries according to the following steps. *Please note the correct direction of battery installation:

The Positive Side ("+") OF EVERY SINGLE Battery MUST FACE UP.

(WRONG INSTALLATION OF BATTERIES WILL CAUSE DAMAGE TO THE TESTER AND POTENTIAL HAZARDS!)



2. Keypad Functions

■ **Short press-------** < 2 seconds

■ **Long press--------** > 2 seconds

MEAS	1. Short press to turn on, long press to turn off; 2: When turned off, long press to enter setup; 3: In mode setting, short press to change parameter;
CAL	1.When turned on, long press to enter calibration mode. 2.In calibration mode, short press to confirm calibration; 3.In mode setting, short press to confirm parameter selection.

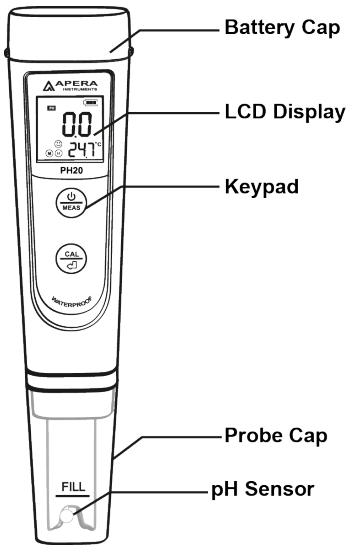


Diagram - 1

3. Complete Kit

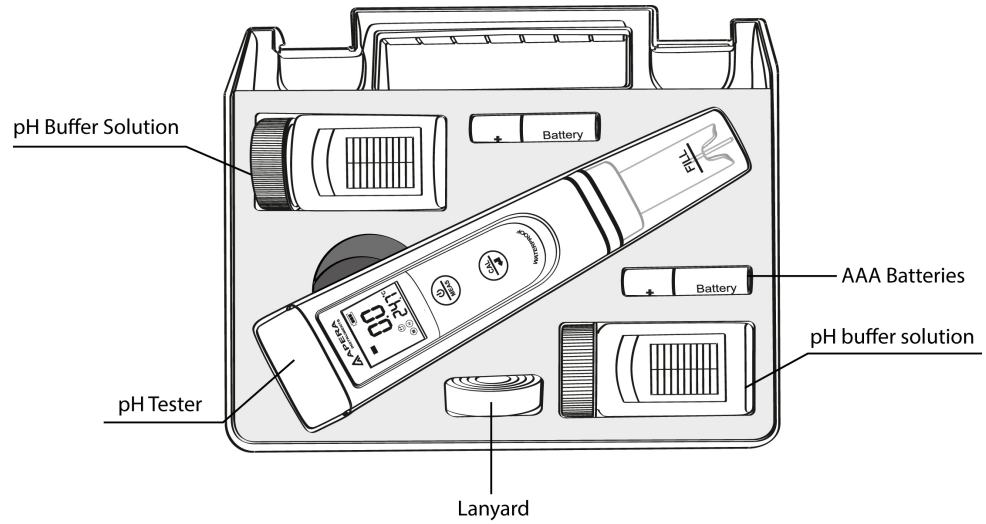


Diagram - 2

<u>Things needed in addition to what's in the box</u>

A clean cup, distilled water (8-16oz), and tissue papers for rinsing and drying the probe.

4. Calibration

4.1 If it's first time use or the tester hasn't been used for a long time, pour some pH 4.00 solution to the Fill line in the probe cap, soak probe for about 15 minutes to hydrate the pH sensor.

4.2 Short press (MEAS) to turn on. Rinse in distilled water; shake the meter in the air and use tissue paper to dap off excess water.

4.3 Long press (CAL) to enter calibration mode; Short press (MEAS) to exit.

4.4 Insert the probe in the 7.00 pH calibration solution; Stir gently; leave it to stand; Wait for the smiley face ☺ to appear and stay on the screen (see Diagram 3); short press (CAL) to complete 1st point calibration, tester returns to measurement mode; calibration icon (M) displays on button left side of the screen.

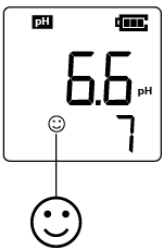


Diagram - 3

4.5 Rinse probe in distilled water. Long press (CAL) to enter calibration mode; insert the probe in the pH 4.00 calibration solution, stir gently; leave it

to stand; wait for the smiley face ☺ to appear and stay on the screen; then short press CAL ⏎ to complete the 2nd point calibration,

tester returns to measuring mode, calibration icons Ⓛ Ⓜ display on bottom left side of LCD.

■ Notes

a) Tester will automatically recognize pH buffer solution, users can choose calibration points: 1 point, 2 points, or 3 points. But **the 1st point calibration must be in calibration solution of 7.00 pH, then followed by 2nd or 3rd point calibration.** For details, please refer to the following table:

	Calibration Solution	Calibration Indication icon	Recommended Accuracy and Range
1-point Calibration	7.00 pH	Ⓜ	Accuracy ≥ 0.1pH
2-point Calibration	7.00 pH and 4.00 pH	Ⓛ Ⓜ	Measuring Range <7.0 pH
	7.00 pH and 10.01 pH	Ⓜ Ⓗ	Measuring Range>7.0 pH
3-point Calibration	7.00 pH, 4.00 pH and 10.01 pH	Ⓛ Ⓜ Ⓗ	Wide measuring range

b) Automatic self-diagnostic information: if measured value is far off to the preset range, LCD will display "**Er1**"; In calibration mode, if the measured value hasn`t been stable, i.e. ☺ has not been staying on LCD, pressing CAL ⏎ will cause LCD to display "**Er2"**.

5. Measurement

5.1 Short press ⏻ MEAS to turn on the tester. Rinse probe in distilled water, shake the meter in the air and dap it with tissue paper to remove excess water.

5.2 Stir probe in sample solution gently, leave it to stand. Get readings after ☺ comes up and stays.

■ Notes

- *If you see some white crystalline solid leaked out of the pH probe, that's the reference solution (3M KCL) inside the probe. It is **NOT** a sign of any defective issue. It is a **normal** phenomenon when the probe is stored dry for a period of time. It proves that the junction of the probe is working well. Users can simply rinse the probe in distilled water to remove the solids and use the tester as usual.*
- *After each test, users should rinse the pH probe thoroughly with distilled water or purified water.*
- *For the premixed pH calibration buffer solutions, we recommend replacing them after 10 to 15 times of use to keep its accuracy.*
- *This meter will **NOT** give accurate or stable pH readings when **testing distilled or deionized water**. This is because distilled or deionized water do not have enough ions present for the electrode to function properly. To measure distilled or deionized water's pH, users need to use a specialized instrument. Contact us at info@aperainst.com for more details. When testing purified water like spring water or drinking water, it will take longer for the readings to get stabilized (typically 3-5 minutes) because there is very few ions left to be detected by the sensor in those purified water.*
- *Do **NOT store probe in purified water** because that will cause permanent damage to the pH probe. Purified water is only recommended for rinsing the probe. The probe should be stored in 3M KCL pH electrode storage solution (SKU AI1120) for best accuracy or stored in the pH 4.00 calibration solution as an alternative if storage solution is not handy.*
- *Do **NOT** use any other brand's storage solutions because different chemicals may be used and potential permanent damage could be caused to the meter.*
- *Storing the probe dry will **NOT** cause permanent damage to it. It will only temporarily cause the probe to lose its sensitivity, which can always be restored by soaking in the storage solution or pH4.00 calibration solution.*

6. Parameter Setting

6.1 Setting Schedule

Prompt Mark	Parameter Setting Items	Code	Factory Default
P1	Select pH buffer	USA – NIST	USA
P2	Select Temperature Unit	˚F – ˚C	˚F
P3	Back to Factory Default	No – Yes	No

6.2 Parameter Setting

When turned off, long press MEAS to enter setup → short press MEAS to switch P1-P2-P3→ Short press CAL, parameter flashing→short press MEAS to choose, short press CAL to confirm parameter selection→Long press MEAS to go back to measurement mode.

6.3 Parameter Setting Instruction

Select standard pH buffer solution (P1): There are two options of standard buffer solutions: USA series and NIST series as the following chart:

Icons		pH standard buffer solution series	
		USA series	NIST series
Three-Point calibration	L	1.68 pH and 4.00 pH	1.68 pH and 4.01 pH
	M	7.00 pH	6.86 pH
	H	10.01 pH and 12.45 pH	9.18 pH and 12.45 pH

6.4 For the self-diagnosis information, please refer to the table below:

Symbol	Self-Diagnosis information	How to fix
Er 1	Wrong pH calibration solution, which exceeds the recognizable range of the meter.	1. Check if calibration solution is correct 2. Check if probe is damaged. 3. Check if there is any air bubble in the glass bulb sensor
Er2	CAL Is pressed before measurement is stable (☺ appears and stays)	Wait for the smile icon to appear and stay, then press CAL

*** If you find any air bubble in the glass bulb of the pH sensor, simply shake the probe for a few times to remove it. The existence of an air bubble in the glass bulb will significantly decrease the accuracy of measurement.**

*** The 1st point calibration must be 7.00 pH. Perform the 2nd point calibration (4.00 pH) immediately after the 1st point. Do NOT turn off the meter before you conduct 2nd point calibration. If the meter is turned off after 1st point calibration, users will need to restart the calibration process with the 7.00 pH and the 4.00 pH following after. Calibrating directly in pH 4.00 after turning meter off and back on will cause Er1.**

7. Technical Specifications

pH	Range	0 - 14.0 pH
	Resolution	0.1 pH
	Accuracy	±0.1 pH
	Calibration Points	1 - 3 points
	Automatic Temperature Compensation	0 – 50˚C (0 – 122˚F)
Temp.	Range	0 – 50˚C (0 – 122˚F)
	Resolution	0.1 ˚C
	Accuracy	±0.5˚C

8. Tester Functions

8.1 Calibration points indication: Ⓛ Ⓜ Ⓗ

8.2 Stable Measurement: ☺ appears and stays on the screen

8.3 Self-Diagnostic information: **Er1, Er2**

8.4 Low-Voltage warning: ▭ flashes, reminder of battery replacement

8.5 Auto Power-Off in 8 minutes if no operation.

Go to **support.aperainst.com** to find tutorial videos and FAQ articles, or submit a ticket if you have any questions regarding the using meter.

9. 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 APERA INSTRUMENTS, LLC, any malfunctioned or damaged product attributable to responsibility of APERA INSTRUMENTS, LLC for a period of TWO YEARS (SIX MONTHS for the probe) from the delivery.

This limited warranty does not cover any damages due to:

Transportation, storage, improper use, failure to follow the product instructions or to perform any preventive maintenance, modifications, combination or use with any products, materials, processes, systems or other matter not provided or authorized in writing by us, unauthorized repair, normal wear and tear, or external causes such as accidents, abuse, or other actions or events beyond our reasonable control.

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