bluelab®
pH meter

Care and use guide

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LIMITED PRODUCT GUARANTEE
5 year
WITH PROOF OF PURCHASE

(6 months for pH probe)

Probe cable lengths:
2 meters / 6.5 feet

CE FC

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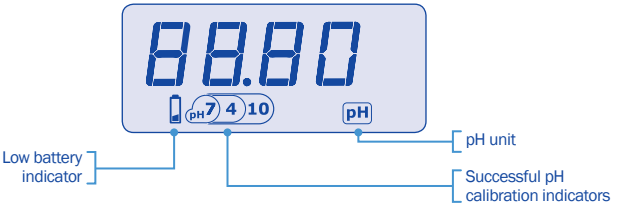
English

Features	
Lightweight and portable	Over range and under range indicators
Large easy to read display	2 x AAA alkaline batteries included
Simple push button pH calibration	Auto off function
Successful pH calibration indicator	Low battery indicator
Replaceable double junction pH probe included	

Bluelab pH Meter

pH probe storage cap

The pH probe tip must not be allowed to dry out. Always place the storage cap back onto the pH probe after each use. Ensure the cap contains enough Bluelab pH Probe KCl Storage Solution to cover the probe tip.



Keep your pH probe tip wet

at all times to avoid permanent damage

1.0 Introduction to the Bluelab pH Meter

The Bluelab pH Meter has two press buttons; 'calibrate' and power. The power button requires a short press; release in about one second. The 'calibrate button requires a long press; hold for at least three seconds and release when the display starts flashing.

Turning the pH meter on and off

1. A short press of the power button will turn the pH meter on. The pH meter automatically turns off after approximately four minutes if no buttons are pressed. If the pH meter turns off before the reading is taken, short press the power button to turn the pH meter on again.

2.0 Preparing for use

The following tasks must be performed before the Bluelab pH Meter is used for the first time.

1. **Insert batteries.**
   See section 5.0.

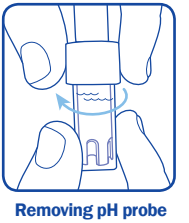
2. **Connect pH probe**
   Connect the pH probe to the pH meter by lining up the lugs of the BNC fittings. Fasten securely by pushing the pH probe connector on and twisting one quarter turn.

Attaching the Bluelab pH Probe to the Meter

3. **Remove the storage cap**
   Remove the pH probe storage cap by gripping the top of the cap and gently twisting the base one rotation clockwise to loosen slightly. Next slowly slide the cap off the pH probe. DO NOT completely remove the base of the cap from the top of the cap.

   CAUTION: When the pH probe is not in use, add enough Bluelab pH Probe KCl Storage Solution to the storage cap so the probe tip is covered. Then replace the cap and store in a secure place.

   DO NOT use RO (Reverse Osmosis), Distilled or De-ionized water. Pure water changes the chemistry in the reference, causing the probe to die.



Removing pH probe storage cap

Ensure probe tip is covered by the KCl storage solution in cap

4. **Calibrate the pH**
   Calibrate the pH meter by following the instructions in section 3.0 of this manual.
   This must be done before the pH Meter is used for the first time.

See section 3.0 for calibration steps

3.0 Calibration

pH calibration is required before first use and then monthly to ensure readings are accurate.

For accurate pH readings the pH probe is cleaned and recalibrated when:

- The reading is different to what you were expecting.
- The batteries have been removed or changed.
- The pH probe is replaced with a new one or is disconnected from the pH Meter.
- The pH calibration indicators have disappeared.

When calibrating the pH after first use the pH probe needs to be cleaned. See pH probe cleaning in section 6.0. The pH probe does not need to be cleaned for initial calibration.

For best pH calibration

pH reading accuracy is dependant on the accuracy and age of the calibration solutions used, and use and cleanliness of the pH probe tip.

- Ensure the pH probe has been cleaned and rinse the pH probe tip with clean water between calibration solutions to reduce contamination of the pH solutions.
- Only fresh uncontaminated solutions should be used.
- Calibrate the pH at the same temperature as the solution to be measured.
- ALWAYS calibrate the pH probe with pH 7.0 then pH 4.0 or pH 10.0.

The pH calibration involves cleaning the pH probe tip and then calibrating in TWO SOLUTIONS.

If a reading below pH 7.0 is expected, use pH 7.0 and pH 4.0 calibration solutions.
If a reading above pH 7.0 is expected, use pH 7.0 and pH 10.0 calibration solutions.
Follow the steps below for pH meter calibration.

Storage and use of calibration solutions

- Always place the lid back onto the bottle after use or evaporation will occur rendering the solution useless.
- Store in a cool place.
- DO NOT measure directly into the bottle. Tip a small amount into a clean container and discard after use.
- Never add water to solutions.

pH reading accuracy is dependant on the accuracy and age of the calibration solutions used, and use and cleanliness of the pH probe tip.

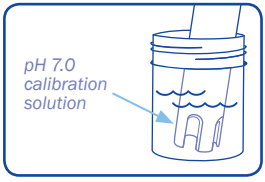
3.0 Calibration cont.

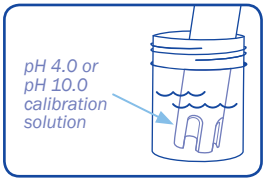
To calibrate the pH

1 Clean pH probe tip.
See section 6.0 (the pH probe does not require cleaning before the first use).

2 pH 7.0 calibration

a) Press any button to turn the pH meter ON.
b) Loosen and remove cap from probe.
c) Rinse pH probe tip in fresh water.
d) Press the CAL button until CAL appears on the screen and release.
e) A series of flashing '▯'s will appear. Once calibration is complete, PH7 will be displayed.
f) If Err appears during the calibration process see Section 11.0.
g) The pH meter must be calibrated to two points. If after an hour the meter has not been calibrated with a second calibration point the calibration indicators disappear and the pH meter reverts to an uncalibrated state. Calibration is required.



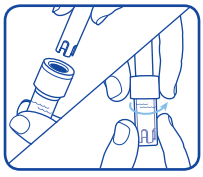


3 pH 4.0 / 10.0 calibration

a) Rinse pH probe tip in fresh water.
d) Press the CAL button until CAL appears on the screen and release.
e) A series of flashing '▯'s will appear. Once calibration is complete, PH4 or PH10 will be displayed.
f) Rinse pH probe tip in fresh water.
c) The pH meter is now calibrated and ready for use.
d) The successful calibration indicator '(pH 7) 4' or '(pH 7) 10' will appear on screen.
d) Probes require monthly cleaning and calibration.

Successful pH 7 and pH 4 calibration

4 Store the pH probe
Add enough Bluelab pH Probe KCl Storage Solution into the probe storage cap to fully submerge the pH probe tip. Place storage cap on probe.



Ensure probe tip is covered by the KCl storage solution in cap

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4.0 Measuring the pH value

Taking a pH reading

1. Press the power button to turn the pH meter on.
2. Remove the storage cap from the pH probe and place the pH probe into the solution.
3. Wait 1-2 minutes or longer for reading to stabilize to a constant value. The pH reading is displayed.
4. If the solution you are measuring is outside the measurement range of the pH meter, a 'Ur' (under range) or 'Or' (over range) will be displayed.
5. Store pH probe between measurements. See section 8.0.

NOTE: If taking readings of more than one solution, rinse the pH probe tip thoroughly in fresh water between solutions to avoid cross contamination.

5.0 Battery replacement

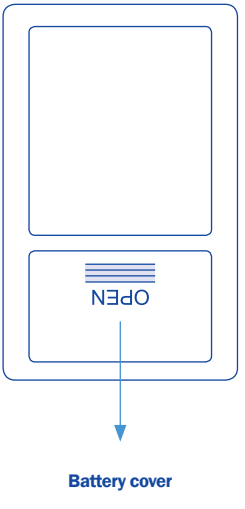
Batteries are replaced in the Bluelab pH Meter when the low battery indicator appears on screen.

The low battery indicator remains on and the Bluelab pH Meter continues to operate until the batteries die or are replaced.

1. Open battery compartment by sliding the back cover down and insert 2 x AAA batteries as shown on the battery holder. Slide cover back on.

   NOTE: Alkaline batteries are recommended.

2. **IMPORTANT: Check the batteries at least once every six months for signs of deterioration, rusting or swelling.**
   If signs of deterioration are found, clean battery holder contacts and replace batteries.

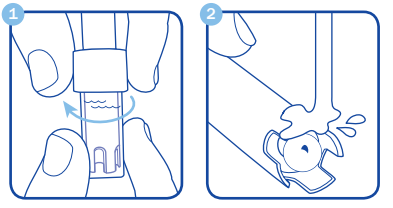


6.0 Cleaning the Bluelab pH Probe

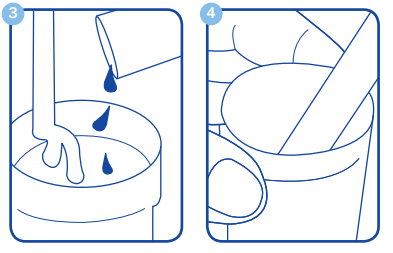
To ensure accurate readings the pH probe tip needs to be rinsed in water after each use and cleaned prior to calibration using the following instructions.

The storage cap must always be put back on after cleaning. Always ensure it contains enough Bluelab pH Probe KCl Storage Solution to cover the probe tip.

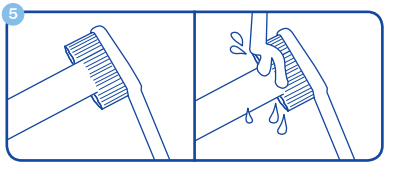
1. **Remove storage cap from pH probe.**
   Hold the top of the storage cap, twist the cap to loosen then remove.
2. **Rinse pH probe tip under fresh tap water.**
   Never use RO (Reverse Osmosis), Distilled or De-ionized water.



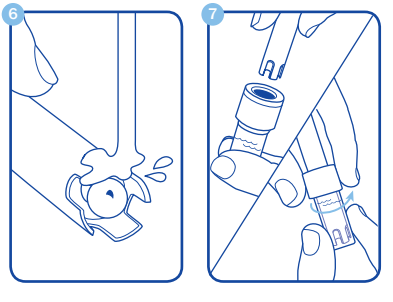
3. **Fill a small plastic container with clean tap water.**
   Add a small amount of Bluelab pH Probe Cleaner or mild detergent (dishwashing liquid).
4. **Gently stir the probe tip in the mixture.**
   Ensure that you do not 'knock' the soil pH probe on the side of the container as this may cause damage to the probe.
   Rinse well under fresh running water to remove all traces of the detergent mixture.



5. **If the probe tip requires removal of heavy contamination:**
   Gently brush around the glassware with a few drops of Bluelab pH Probe Cleaner or mild detergent (dishwashing liquid) and a soft toothbrush.



6. **Rinse well under fresh running tap water to remove all traces of the detergent mixture.**
7. **Calibrate pH probe after cleaning, see section 3.0**
   After calibration, store pH probe in the storage cap, ensuring there is enough KCl Storage Solution to cover the probe tip.



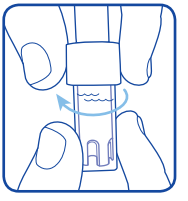
7.0 Hydrating the pH probe

Hydrate the pH probe in Bluelab pH Probe KCl Storage Solution when:

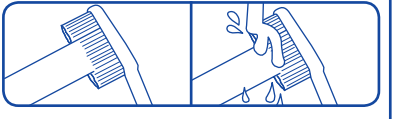
- *the probe tip has not always been stored in KCl storage solution, to improve the reading response speed.*
- *the probe tip has been accidentally allowed to dry out*

Never use RO (Reverse Osmosis), De-ionized or Distilled water.
Pure water changes the chemistry in the reference, causing the probe to die.

1. **Loosen, then remove the storage cap.**
   Place the pH probe upright in a plastic container.



2. **Clean the pH probe tip.**
   Ensure the probe tip is cleaned before hydrating. See section 6.0 for instructions.



3. **Add enough Bluelab pH Probe KCl Storage Solution to a plastic container to submerge the pH probe tip.**

4. **Leave to soak for at least 24 hours.**
   After hydration, always calibrate the pH probe to ensure accuracy, see section 3.0.

8.0 Storing the Bluelab pH Meter

1. **Store the pH Meter in a cool, dry and clean place when not in use.**

2. **Keep out of direct sunlight.**
   Keep pH Meter out of direct sunlight to prevent irreparable damage to the LCD reading display.

3. **The pH Meter is not waterproof but will withstand occasional water splashes.**
   If the pH Meter is splashed, wipe dry as soon as possible.

4. **Remove batteries if the pH Meter is to be stored for a prolonged period.**

5. **Remove pH probe if storing the pH Meter without use for longer than two to three weeks and check regularly that the pH probe tip has not dried out.**

   When storing the pH probe, the pH probe tip must be kept moist.

   To prepare the pH probe for storage, add enough Bluelab pH Probe KCl Storage Solution to the storage cap so the probe tip is covered. Then replace the cap and store in a secure place. DO NOT use RO (Reverse Osmosis), Distilled or De-ionized water. Pure water changes the chemistry in the reference, causing the probe to die.

9.0 Error messages

An error message will only appear following pH calibration failure.

'Err' will be displayed for a few seconds then the display will show the previous reading. Successful pH calibration indicators will disappear. The Bluelab pH Meter is in an uncalibrated state, therefore recalibration is required. See causes of Error messages below.

Possible causes for an 'Err' message:

- Calibration solutions contaminated
- Wrong solutions used
- pH probe contaminated
- pH probe not properly attached
- pH probe worn out or damaged
- Calibrate to pH 7.0 FIRST then to pH 4.0/10.0

10.0 Technical specifications

	pH
Measurement range	0.0 - 14.0 pH
Resolution	0.1 pH
Accuracy at 25 °C/77 °F	±0.1 pH
Calibration	Two point pH 7.0 and pH 4.0 or pH 10.0
Temperature compensation	Not applicable
Operating environment	0 - 50 °C 32 - 122 °F
Power source	2 x AAA alkaline batteries

11.0 Troubleshooting guide

Trouble	Reason	Correction
pH reading inaccurate	Contaminated pH probe / glassware not clean.	Clean pH probe (see section 6.0); then calibrate.
	Wick contaminated, blocked or dry.	Hydrate probe in KCl storage solution for 24 hours, see section 7.0. Do not measure proteins or oils with this unit. Replace unit.
	Incorrect pH calibration.	Ensure calibration solutions are accurate. Replace if in doubt. Wait longer for readings to stabilize before calibrating to a constant value.
	pH calibration unreliable.	Calibrate pH probe (see section 3.0).
	pH probe damaged or old.	Replace pH probe.
pH reading does not change from solution to solution	Broken glass bulb, tube or connector.	Check pH probe for damage. Replace probe.
Displays low battery indicator	Insufficient power to take a reliable reading.	Replace the batteries. DO NOT use rechargeable batteries.
No display	Batteries dead or inserted incorrectly.	Check batteries are inserted correctly. Replace if necessary.
Display shows 'Err'	Problem with pH calibration.	See error message descriptions in section 9.0 of this document.
Or **Ur** **While in pH mode**	Over range pH. Under range pH.	Solution > 14.0 pH. Solution < 0.0 pH. Check pH probe connection. pH probe could be faulty. pH meter could be wet inside.

Bluelab pH Probe replacement

The Bluelab pH Probe is the only part of the Bluelab pH Meter that requires replacing.

pH probes do not last forever. They age through normal use and will eventually fail.

To ensure you receive a long life from your pH probe, please read the instructions provided with it.

When the time comes to replace your Bluelab pH Probe all you have to do is order a replacement from your supplier!

Bluelab Probe Care - pH

The instrument is only as accurate as the probe is clean!

Probe cleaning is one of the most important parts of owning and operating any Bluelab meter, monitor or controller.

If the probe is contaminated (dirty) it affects the accuracy of the reading displayed.

Bluelab Probe Care Kit - pH contains:

- Probe care instructions
- 3 x plastic cups
- 20ml single-use Bluelab Solution Sachets, 2 each of: pH 7.0 & pH 4.0, KCl
- Bluelab pH Probe Cleaner
- Toothbrush (pH probe cleaning instrument)

Bluelab pH Probe KCl Storage Solution

The perfect solution to store and hydrate your Bluelab pH products.

Bluelab pH Probe KCl Storage Solution is designed to increase response time and maximize the life of Bluelab pH pens and pH probes.

For best results, use the KCl solution to store the pH pen/ probe after use and hydrate monthly.

Instructions are on the label of the bottle.

Use Bluelab pH Probe KCl Storage Solution with:

- Bluelab pH Pen
- Bluelab Soil pH Pen
- Bluelab pH Probes
- Bluelab Soil pH Probes

Bluelab® limited warranty

Bluelab® Corporation Limited (Bluelab) provides a warranty on its products (Bluelab® pH Meter) under the following terms and conditions:

How Long Does Coverage Last?

Bluelab® warrants the Bluelab® pH Meter (Product) for a period of 60-months from date of purchase by original purchaser or consumer. Proof of purchase, to Bluelab's sole satisfaction, is required for the warranty to be effective (store sales receipt for Product showing model number, payment and date of purchase). This warranty is non-transferable and terminates if the original purchaser/consumer sells or transfers the Product a third party.

What is Covered?

Bluelab® warrants the Product against defects in material and workmanship when used in a normal manner, in accordance with Bluelab® instruction manuals. If Bluelab® is provided with valid proof of purchase (as defined above) and determines the Product is defective, Bluelab® may, in its sole discretion either (a) repair the Product with new or refurbished parts, or (b) replace the Product with a new or refurbished Product.

Any part or Product that is replaced by Bluelab® shall become its property. Further, if a replacement part or Product is no longer available or is no longer being manufactured, Bluelab® may at its sole discretion replace it with a functionally-equivalent replacement part or product, as an accommodation in full satisfaction of the warranty.

What is NOT covered?

This warranty does not apply to equipment, component or part that was not manufactured or sold by Bluelab®, and shall be void if any such item is installed on a Product. Further, this warranty does not apply to replacement of items subject to normal use, wear and tear and expressly excludes:

- Cosmetic damage such as stains, scratches and dents
- Damage due to accident, improper use, negligence, neglect and careless operation or handling of Product not in accordance with Bluelab® instruction manuals, or failure to maintain or care for Product as recommended by Bluelab®
- Damage caused by use of parts not assembled/installed as per Bluelab® instructions
- Damage caused by use of parts or accessories not produced or recommended by Bluelab®
- Damage due to transportation or shipment of Product
- Product repaired or altered by parties other than Bluelab® or its authorised agents
- Product with defaced, missing or illegible serial numbers
- Products not purchased from Bluelab® or a Bluelab®-authorised distributor or reseller.

How Do You Get Service?

To begin a warranty claim you must return the Product to the point of purchase with valid proof of purchase (as defined above). In California, you can also return the Product to any Bluelab-authorised distributor or reseller, with valid proof of purchase.

Limitation of Liability & Acknowledgments

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS WARRANTY AND THE REMEDIES SET OUT ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES AND REMEDIES (ORAL OR WRITTEN, EXPRESS OR IMPLIED).

EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, BLUELAB IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTIAL OR CONSEQUENTIAL LOSS OR DAMAGES, OR ANY OTHER LOSS OR DAMAGES RESULTING FROM SALE OR USE OF THE PRODUCT, OR BREACH OF WARRANTY, HOWEVER CAUSED, INCLUDING DAMAGES FOR LOST PROFITS, PERSONAL INJURY OR PROPERTY DAMAGE.

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SOME JURISDICTIONS (STATES OR COUNTRIES) DO NOT ALLOW EXCLUSION OR LIMITATION FOR INCIDENTIAL OR CONSEQUENTIAL DAMAGES, OR LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT BE APPLICABLE.

IF ANY PROVISION OF THIS WARRANTY IS JUDGED TO BE ILLEGAL, INVALID OR UNENFORCEABLE, THE REMAINING PROVISIONS OF THE WARRANTY SHALL REMAIN IN FULL FORCE AND EFFECT.

Governing Law; Authority

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bluelab®

success by simplicity

guarantee.

The Bluelab® pH Meter™ comes with a 5 year limited written guarantee. Proof of purchase required.

lets talk.

If you need assistance or advice - we're here to help you.

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Fax: **+64 7 578 0847** Email: **support@bluelab.com**

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Tauranga 3110, New Zealand

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