Bluelab pH controller connect M

Care and use guide

M Increased flow rate
120 ml / min
4.06 fl.oz

1 Bluelab Connect Stick required to data log (sold separately)

bluelab.com

English

Contents

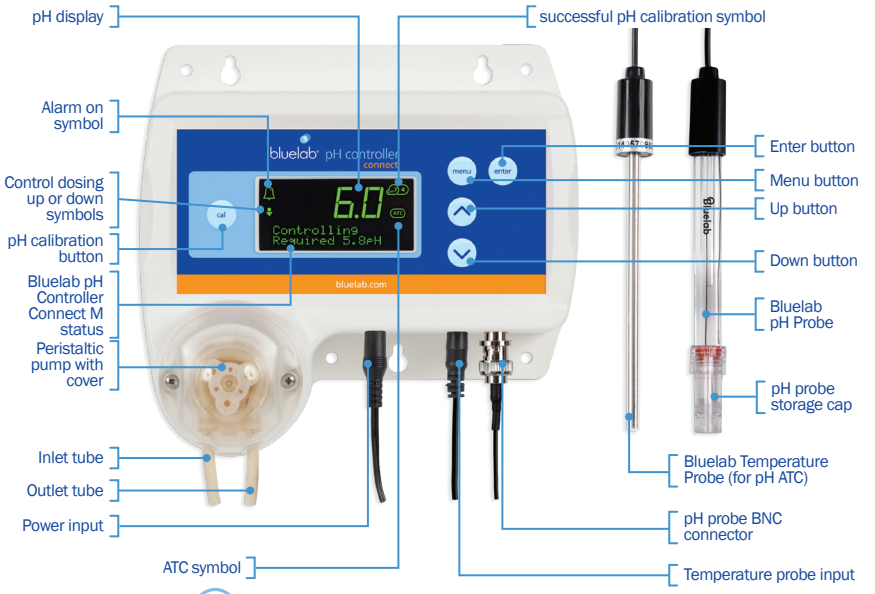
Features

One Bluelab Connect Stick is required, sold separately	Flashing high and low alarm with safety control lockouts
Local and Cloud data logging capability (download Free Bluelab Connect Software)	'Plant-safe' green back lit LCD with adjustable brightness and contrast
Adjustment of control settings from a local PC via connect software	Auto resume dosing on restart after power loss
Option to view data and current status remotely via Google Docs™*	Water resistant, wall mount design
Automated control and monitoring of nutrient reservoir pH	13 foot (4 meter) acid/alkaline resistant tubing supplied
Large, easy to read display	International power supply
Simple push button pH calibration with on screen instructions	Separate Bluelab Temperature Probe (for pH ATC)
Easy to navigate menu to program and adjust settings	Replaceable double junction pH probe
Dosing lockouts to protect from over-dosing	Replaceable peristaltic pump and tubing

What is Plant Safe? Green lights are safe for continued growth during a plant's fruiting stage when hours of darkness are required.

What are Dosing Lockouts for? They are a built-in safety feature that stops pH dosing if an error is detected in the system (see FAQs for more detail).

Bluelab pH Controller Connect M



Keep your pH probe tip wet
at all times to avoid permanent damage

PLEASE FOLLOW THE MANUAL STEP BY STEP BEFORE FIRST USE BEGINS

1.0 What's in the box?

Please verify the box contents from the information below.

1. Bluelab pH Controller Connect M
2. Bluelab pH Probe with storage cap
3. Bluelab Temperature Probe
4. Bluelab pH Probe holder with suction cup
5. 24V DC 0.4Amp power supply
6. Europe plug adaptor
7. UK plug adaptor
8. North American plug adaptor
9. NZ / Australia plug adaptor
10. 13 foot (4 meter) Acid/Alkali resistant dosing tube with connectors
11. 4 x mounting fasteners
12. 18 ml pH 7.0 and pH 4.0 single-use calibration solution sachets
13. Replaceable peristaltic pump and cassette. Available as a pump and cassette assembly or cassette only.

2.0 IMPORTANT - Bluelab pH Probe care

pH probes DO NOT last forever. They age through normal use and will eventually fail. The life time of a pH probe depends on the environment it is used in and the way that it is treated. To receive a long life from your Bluelab pH Probe, please ensure you follow the guide below.

pH probes contain glass and are therefore FRAGILE. With good care, they will give a long service life.

Bluelab pH Probe

DO NOT let the pH probe tip dry.

DO NOT bend the probe; this will break its internal glass tube.

DO NOT knock the probe; this will break its internal glass tube or external glass bulb.

DO NOT plunge a cold pH probe into a hot liquid, or a hot probe into cold liquid. Sudden temperature changes can crack the glass and permanently damage the probe.

DO NOT immerse in oils, proteins or suspended solids that will leave a coating on the glass bulb.

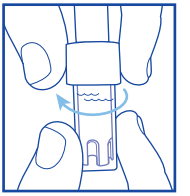
DO NOT 'kink' or bend the lead sharply.

DO NOT attempt to lengthen the lead on the pH probe.

DO NOT wet the BNC connector at the end of the lead.

Always remove pH probe storage cap before use

1. Grip the top of the cap and gently twist the base one rotation clockwise to loosen slightly.
2. Next slowly slide the cap off the pH probe. DO NOT completely remove the base of the cap from the top of the cap.
3. Store the storage cap in a safe place.

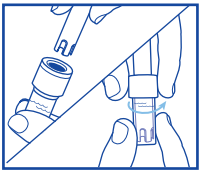


Removing pH probe storage cap

Storing the pH probe

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.



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

If the pH probe has been accidentally allowed to dry out;

The pH probe must be 'hydrated' for 24 hours in KCl storage solution (never use RO, Distilled or De-ionized water). Following this; carry out a calibration to check if the probe has already suffered permanent damage.

English

3.0 Set up the Bluelab Connect Software

1. Note the 4 character KEY CODE on the top of the Bluelab pH Controller Connect M.
2. Follow instructions in the Bluelab Connect Stick 'Getting Started' guide to install the connect stick and connect software. Add the Bluelab pH Controller Connect M to the software.

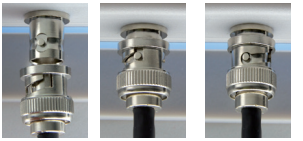
4.0 Installing the Bluelab pH Controller Connect M

1. Select a suitable location that is:
   - Less than 5.65 feet / 2 meters from your reservoir. The probes must be immersed in solution at all times.
   - Less than 4.9 feet / 1.5 meters from an electrical mains outlet.
   - Less than 5.56 feet / 2 meters from pH Up or Down solution. The inlet tube must reach the bottom of the container.
   - At a suitable height to see the display and for easy operation (recommend slightly below eye level when standing).

   NOTE: *Avoid placing the Bluelab pH Controller Connect M where it can be damaged by direct sunlight, water, nutrient salts or pH adjuster.*
2. Fix the fasteners through the desired mounting holes in the top and bottom of the case.

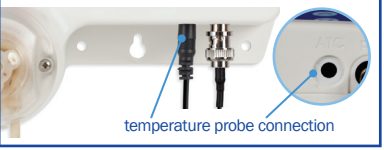
5.0 Connect the Bluelab pH Probe

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



6.0 Connect the Bluelab Temperature Probe

1. Insert the temperature probe connector to the base of the Bluelab pH Controller Connect M where 'ATC' is labelled. Ensure the connector is fully inserted.

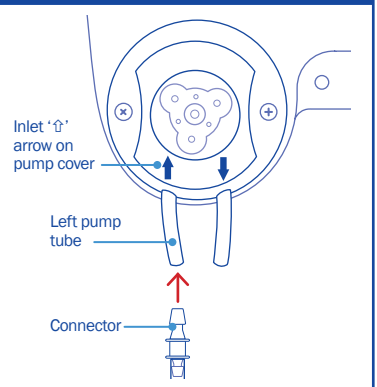


7.0 SAFETY - Handling pH up and down solutions

CAUTION: *Always follow the manufacturer's instructions for use and handling.*

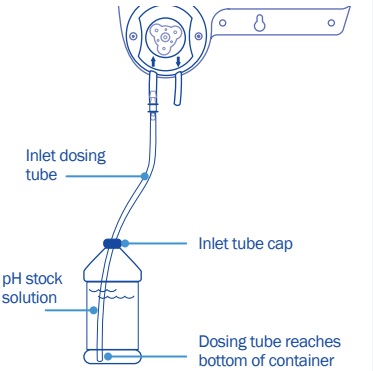
8.0 Set up inlet dosing tube

1. **To straighten tube:**
   Bend tube in the opposite direction and straighten by running through closed fingers.



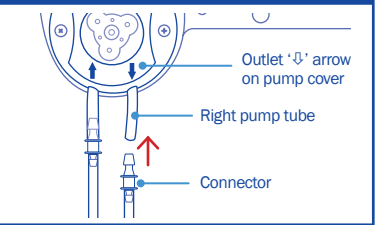
2. Insert one end of the dosing tube with connector into the LEFT peristaltic pump tube. This is the 'inlet dosing tube'.

3. Ensure the inlet dosing tube will reach the bottom of the pH stock solution container. There also needs to be enough tube left for the outlet dosing tube to go into the reservoir/tank. Cut the inlet dosing tube to the desired length. Insert the inlet dosing tube in to the pH stock solution.



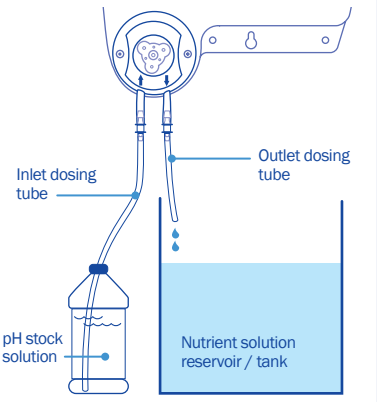
9.0 Set up outlet dosing tube

1. Insert the remaining dosing tube with connector into the RIGHT peristaltic pump tube. This is the 'outlet dosing tube'.



2. Cut the outlet dosing tube so that the tube sits above the maximum solution level of the reservoir/tank. The pH stock solution ***must*** drip into the nutrient reservoir/tank.

   Note: *If the outlet dosing tube is immersed in reservoir/tank solution, it could create a syphon. This would cause the pH stock solution to overflow.*



10.0 Connect the power adaptor

1. Select and connect the appropriate mains plug adaptor for your country to the power supply unit.

2. Connect the power adaptor into the base of the Bluelab pH Controller Connect M where 'PWR' is labelled. Plug the adaptor into mains power supply.

3. Switch on power adaptor at the mains. The Bluelab pH Controller Connect M will complete a display test sequence.

4. The default setting, when the unit is first powered up, is 'monitoring' mode.

Note: *pH calibration must be completed before the first use, see section 14.0.*

11.0 Display menu and buttons

1. One press of the 'menu' button will take you into the menu. To exit the menu, press 'menu' again. Changes will not be saved.

2. The '∧' (up arrow) button allows you to move up the menu items or increase a value shown.

3. The '∨' (down arrow) button allows you to move down the menu items or decrease a value shown.

4. The 'enter' button allows you to select the desired option shown on the display, or save a chosen value.

5. The 'cal' button is used to calibrate your pH probe. A long press enters the calibration sequence.

6. The following symbols, numbers or characters will show on the display to indicate:

7. To use the 'Auto-repeat' feature: Press and hold the '∧' (up arrow) or '∨' (down arrow) button to scroll through options. Release when you see the desired option or value on the screen.

12.0 Factory settings

1. The Bluelab pH Controller Connect M is set to the following values by default:

• Mode	Monitor	• OffTime	10Min
• Set pH	5.8	• Backlight	100% On
• Alarm	On	• Contrast	16
• HighAlarm	6.5	• 2/3pt Cal	2
• LowAlarm	5.6	• EarthLink	Off
• Dose Up/Dn	Down/Acid	• Language	eng
• OnTime	1Sec	• pH Calibration	none

Note: *'Pump runtime' [HH:MM:SS] is the time the pump has dosed for. 'Product runtime' [Hrs] is the duration of time the Bluelab pH Controller Connect M has been in use for. Pump runtime and product runtime are never reset, even after pump replacement.*

2. To restore the Bluelab pH Controller Connect M to the above factory settings at any stage:
   - Disconnect the power
   - Press and hold the 'cal' button then reconnect the power.
   - When 'Restored Factory Defaults' is displayed on the screen, release the 'cal button'.

13.0 Change the display language

1. Press 'menu'. Press '∨' to find language. Press 'enter' to select.

2. Press '∨' or '∧' to find the required language.

3. Press 'enter' to save the language selection. Press 'menu' to exit the menu.

14.0 pH calibration

pH calibration is important before first use. It ensures pH measurements and/or pH stock solution dosing is accurate. *The Bluelab Temperature Probe DOES NOT require calibration.*

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

- It has been 30 days since the last pH calibration, and the successful calibration indicators are not showing.
- The reading is different to what you were expecting.
- The Bluelab pH Controller Connect M is reset to factory default.
- The pH probe is replaced with a new one.

If the pH probe has been in use it must be cleaned before pH calibration. See pH probe cleaning in section 26.0. New pH probes do not need to be cleaned.

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 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 to pH 4.0 and/or pH 10.0.
- Place the temperature probe into the calibration solution with the pH probe during calibration.

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

If you are calibrating to TWO solutions, remember:
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.

You would require calibration in THREE solutions if:

Readings above and below pH 7.0 are expected, use pH 7.0, pH 4.0 then pH 10.0 calibration solutions. You will need to enable 3 point calibration in the settings menu.

Follow the steps on the next page for pH 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.
- DO NOT measure directly into the bottle. Tip a small amount into a clean container and discard after use.
- Never add water to solutions.
- Store in a cool place.

14.0 pH calibration cont.

To calibrate the pH

1 Clean pH & Temperature probe tips.
See section 26.0 (the pH probe does not require cleaning before the first use).


clean the pH probe

press cal button

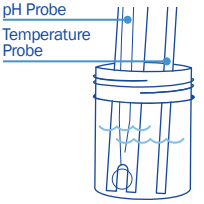
2 The calibration default is set at two point calibration. If a three point calibration is required:

a) Press 'menu'.
b) Press '∨' to find '2/3 point cal'. Press 'enter'.
c) Press '∨' to select '3'. Press 'enter'. When 'saved' is displayed on screen, three point calibration is now available.

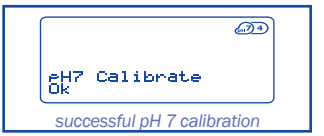
3 In separate plastic containers, prepare a small amount of: fresh tap water, pH 7.0, pH 4.0 and/or pH 10.0 calibration solutions.

4 pH 7.0 calibration

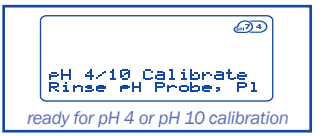
a) Ensure the Bluelab pH Controller Connect M is plugged in.
b) Press and hold 'cal' for three seconds. 'pH 7 Calibrate' will be displayed.
c) Place both clean pH & Temperature probe tips in the pH 7.0 calibration solution. Press 'cal'.
d) Calibration is complete when all the '□'s on the screen become solid. The screen will display 'OK' and the 'pH 7' indicator will appear to indicate successful pH 7.0 calibration.
e) Now you can calibrate to pH 4.0 and/or pH 10.0



pH 7.0 calibration solution



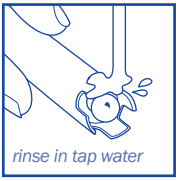
successful pH 7 calibration



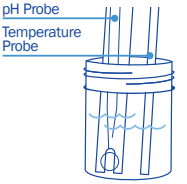
ready for pH 4 or pH 10 calibration

5 pH 4.0 and/or pH 10.0 calibration

a) Rinse both probes tips in fresh tap water, shake off excess water. Place the clean pH probe tip in either pH 4.0 or pH 10.0 calibration solution. Press 'cal'.
b) Calibration is complete when all the '□'s on the screen become solid. The screen will display 'OK' and the 'pH 4' or 'pH 10' indicator will appear to indicate successful pH calibration.
c) If you require three point calibration, repeat '5a' and '5b' using the pH 4.0 or pH 10.0, whichever solution was not used.
d) The Bluelab pH Controller Connect M is now calibrated, and ready for use.

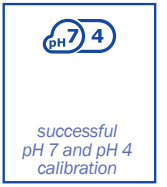

rinse in tap water

press cal button

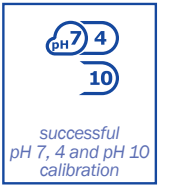


pH 4.0 calibration solution

6 After pH calibration, the Bluelab pH Controller Connect M reverts to 'Monitor' mode.
Change to 'Control' mode if required.



successful pH 7 and pH 4 calibration



successful pH 7, 4 and pH 10 calibration

NOTE: If 'Failed <e>' is displayed on the screen during calibration, see section 27.0 Troubleshooting.

15.0 Placement of the probes

The tip of the Bluelab pH Probe must be submerged in the liquid for a measurement to occur. It is optional to use the Bluelab Temperature Probe, but required for automatic temperature compensation (ATC) to occur, or to enable 'Earthlink'.

- *Do not pour concentrated nutrient solution or pH adjuster directly onto probes when in the reservoir. Strong acids, alkali and nutrients damage the probes, trigger the alarms (if on), cause the pump to accidentally dose or stop dosing, or interfer with the control program.*
- *For accuracy, ensure the probes are in an area where the reservoir/tank solution is well mixed.*
- *pH and temperature probes can be fully submerged in the solution.*

1. Fit the (optional) pH probe holder to the stem of the pH probe using a gentle twisting motion.
2. Place the pH probe into the reservoir/tank and push the suction cup onto the side of the reservoir but far enough down so the pH probe tip is always in the solution. This prevents damage to the probe from any movement in the reservoir/tank.
3. Place the temperature probe alongside the pH probe.

16.0 Set the required pH

1. Press 'menu'.
2. Press '∨' to find 'Set pH'. Press 'enter' to select.
3. Press '∨' or '∧' until the required pH is shown in the main display. Press 'enter' to save the value.
   Note: *If you have already set high and low alarm values, you may see the values change depending on the pH value being set.*

17.0 Set the dosing direction - for pH up or down solution

1. Press 'menu'.
2. Press '∨' to find 'Dose Up/Dn'. Press the enter button to select.
3. Press '∨' or '∧' to select the dosing direction that matches the pH stock solution being used in the system. Press 'enter' to save.
   Note: *Select 'Dn/Acid' for acid (pH down solution). Select 'Up/Alkali' for alkali (pH up solution).*

18.0 Set the dosing OnTime and OffTime

A dosing cycle includes the OnTime and the OffTime that the peristaltic pump doses the system for. The arrow symbol on the display will flash during the dose cycle. Adjustments for OnTime and OffTime will be required so that three dosing cycles only change the pH value by 0.1 pH.

- *'OnTime' is the length of time the peristaltic pump will dose for. The 'OnTime' can be set from 1 to 60 seconds.*
- *'OffTime' is the delay time between each dose. This gives the system time to mix the pH stock solution thoroughly, so the Bluelab pH Controller Connect M can measure the changes being made before needing to dose again. The 'OffTime' can be set from 1 to 60 minutes.*
- *Start with a long 'OffTime' and adjust back as you go. The more thorough the mixing in the tank, the shorter the 'OffTime' can be.*

To set the OnTime value:

1. Press 'menu'.
2. Press '∨' to find 'OnTime'. Press 'enter'.
3. Press '∨' or '∧' to select the dosing on time in **seconds**. Press 'enter' to save.

To set the OffTime value:

1. Press '∨' to find 'OffTime'. Press 'enter'.
2. Press '∨' or '∧' to select the dosing off time in **minutes**. Press 'enter' to save.

19.0 Set alarms (optional)

The alarm function alerts you when the solution deviates too far from the desired pH. When an alarm condition is present, the pH value and the alarm symbol will flash on the screen. This is an 'alarm lockout' state. All dosing will stop.

If the measurement changes back to within the limits you have chosen, the flashing will stop and dosing will start.

To set the 'High Alarm' value:

1. Press 'menu'.
2. Press '∨' to select 'Alarm High'. Press 'enter'.
3. Press '∨' or '∧' to select the desired value. Press 'enter' to save.

To set the 'Low Alarm' value:

1. Press '∨' to select 'Alarm Low'. Press 'enter'.
2. Press '∨' or '∧' to select the desired value. Press 'enter' to save.

To turn on the alarm:

1. Press '∨' to find 'Alarm'. Press 'enter'.
2. Press '∨' or '∧' to select 'On'. Press 'enter' to save the value and turn on the alarm. Press 'menu' to exit back to the main display.

20.0 View current settings / status

Use this option to view your programmed settings at any time.

1. Press '∨' or '∧' while in 'monitor' or 'control' mode. The setting for each value is displayed at the bottom of the screen.
2. The display will revert to displaying 'Required pH' if no button is pressed after 1 minute.

21.0 Priming the pump / manual dosing

'Pump Ovrde' allows you to fill the inlet and outlet tubes with dosing solution before first use (removing any air in the tubes), and to manually dose the tank if required. Always ensure the inlet dosing tube reaches to the bottom of the pH stock solution container. Ensure the outlet dosing tube is above the highest water line so that pH stock solution drips into the tank/reservoir.

NOTE: If priming the pump, temporarily move the outlet dosing tube so it runs into the pH stock solution container (if not already fixed in place). This will avoid adding pH stock solution to your tank/reservoir unintentionally.

1. Press 'menu'.
2. Press '∨' to find 'Pump Ovrde'. Press 'enter' to select.
3. Press '∨' to manually operate the pump. Release the button to stop the pump when you see the stock solution begins to drip from the outlet dosing tube into the tank. Press 'menu' to exit.
   If the outlet dosing tube was temporarily moved in step 1, place it back, so pH solution will drip into the tank/reservoir.

CHANGING STOCK SOLUTION: If you are changing from pH Up to pH Down, or vice versa, you MUST flush the dosing tube with water FIRST to avoid a chemical reaction in the tube.

22.0 Set the mode

Use 'mode' to select the Bluelab pH Controller Connect M function. 'Monitor' mode shows the current solution pH reading. It is the factory default setting. 'Control' mode allows the controller to dose pH stock solution to the set values. Dosing will NOT occur when:

- *The Bluelab pH Controller Connect M is in 'monitor' mode*
- *The Bluelab pH Controller Connect M is in an alarm state*
- *If the Bluelab pH Controller Connect M senses dosing is not having an effect on the system (after 15 dose cycles)*
- *The solution temperature is above 50 °C / 122 °F, or below 0 °C / 32 °F*

To set 'monitor' mode:

1. Press 'menu'.
2. Press '∨' to select 'Mode'. Press 'enter'.
3. Press '∨' or '∧' to select 'monitor', then press 'enter' to save the mode. Press 'menu' to exit.

To set 'control' mode:

1. Press 'menu'.
2. Press '∨' to select 'Mode'. Press 'enter'.
3. Press '∨' or '∧' to select 'control', then press 'enter' to save the mode. Press 'menu' to exit.
   The display will show a countdown before the pump can start. This is the 'Pump start delay', which is set to these times: 15Sec when exiting the menu with control mode enabled; 60Sec if power off/on occurs.

23.0 Change the screen backlight and/or contrast

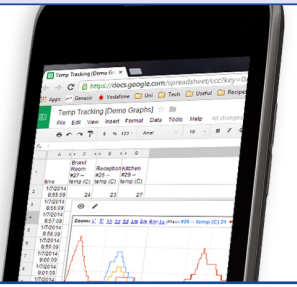
These can be adjusted to best suit the light levels of the environment the Bluelab pH Controller Connect M is being used in.
Backlight can be set at 0%, 25%, 50%, 75% or 100%.
Contrast can be set between 0 and 30.

To change the screen backlight:

1. Press ‘menu’.
2. Press ‘∨’ to find ‘Backlight’. Press ‘enter’.
3. Press ‘∨’ or ‘∧’ to select the desired value. Press ‘enter’ to save, then ‘menu’ to exit back to the main display.

To change the screen contrast:

1. Press ‘menu’.
2. Press ‘∨’ to find ‘Contrast’. Press ‘enter’.
3. Press ‘∨’ or ‘∧’ to select the desired value. Press ‘enter’ to save. Press ‘menu’ to exit.



24.0 Using the Bluelab Connect Software

Once the Bluelab pH Controller Connect M is set up and added to the connect software you can now data log and adjust your settings from your PC.
For the latest features and help, refer to the Bluelab Connect Software page online at www.bluelab.com

1. Data log to a local PC.
2. Adjust control settings from a local PC.
3. Option to view data and status from a remote device via the cloud with Google Docs™. Internet connection required for data logging to the cloud.

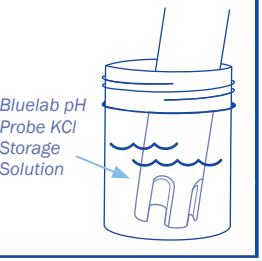
25.0 Hydrating the pH probe

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 store the pH probe in RO (Reverse Osmosis), De-ionized or Distilled water. Pure water changes the chemistry in the reference, causing the probe to die.

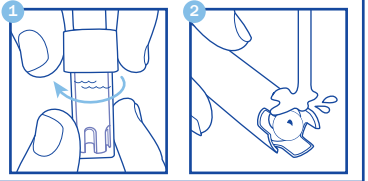
1. **Clean the pH probe tip.** Ensure the probe tip is cleaned before hydrating. See section 26.0 for instructions.
2. **Add enough Bluelab pH Probe KCl Storage Solution to a plastic container to submerge the pH probe tip.**
3. **Loosen, then remove the storage cap (if required).** Place the pH probe upright in a the KCl solution.
4. **Leave to soak for up to 24 hours.** After hydration, always calibrate the pH probe to ensure accuracy, see section 14.0.



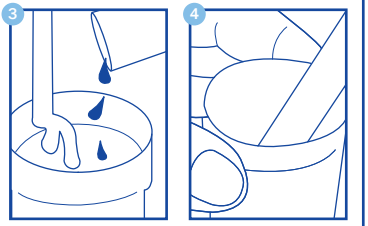
26.0 Cleaning the Bluelab pH Probe

To ensure accurate readings the pH probe tip needs to be rinsed in water and cleaned prior to calibration using the following instructions. After cleaning, use the probe straight away, or place the storage cap on the probe tip. Always ensure the cap contains enough Bluelab pH Probe KCl Storage Solution to cover the probe tip.

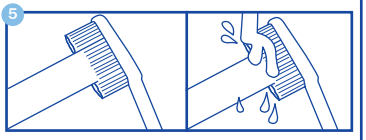
1. **Remove storage cap from pH probe.** Hold the top of the storage cap, twist the cap to loosen then remove.
2. **Rinse pH probe tip under fresh tap water.**



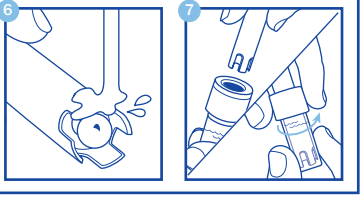
3. **Fill a small plastic container with clean tap water.** Add a small amount of Bluelab pH Probe Cleaner or mild detergent (dishwashing liquid).
4. **Gently stir the probe tip in the mixture.** Ensure that you do not 'knock' the pH probe on the side of the container as this may cause damage to the 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 14.0.** After calibration use straight away or store pH probe in the storage cap, ensuring KCl Storage Solution covers the probe tip.



27.0 Troubleshooting guide

Trouble	Reason	Correction
Device doesn't add to connect software	Device authentication code incorrect.	Enter correct 4 charactor key code on top of product into software.
	Weak signal and/or device is outside connect stick range.	Move device closer to stick.
Device doesn't reconnect when I move it to its location	Device outside connect stick range.	Move device closer to stick.
Device loses connection when it's signal strength is good	Device may be connected through another device, if the closest device drops out all connected devices also drop out.	Increase the signal strength of the device connected to the stick.
pH reading inaccurate	pH probe not plugged in.	Connect pH probe. Check pH probe connection.
	Using factory default calibration.	Calibrate pH probe.
	Contaminated pH probe / glassware not clean.	Clean pH probe, then calibrate.
	Calibration old.	Calibrate pH probe.
	Broken glass bulb, tube or connector.	Replace pH probe.
	pH probe damaged or old.	Replace pH probe.
	Bad grounding (noisy/jumpy pH readings).	Earthlink required. Attach temperature probe. Go to Menu, turn Earthlink on.
Display shows 'Failed <e>' during calibration	Old or contaminated solutions used for calibration.	Use fresh calibration solutions.
	Dirty or contaminated pH probe.	Clean pH probe.
	pH probe tip been allowed to dry.	Hydrate pH probe.
	pH probe damaged or old.	Replace pH probe.
No display	Mains not switched on.	Switch mains power on.
	Power adaptor not plugged in.	Plug power adaptor into the socket marked 'PWR'.
	Mains on, power adaptor plugged in.	Replace power adaptor.
No display after initial LCD test, when plugged in	Backlight set to minimum.	Increase Backlight setting in MENU, or hold <cal> button down while applying power, to restore Factory Defaults.
pH displays 'or', 'ur', '-.-'	**'or'** Over range pH. **'ur'** Under range pH.	Check pH probe connection. pH probe could be faulty. Clean pH probe, then calibrate.
	'-.-' Temperature over/under range.	Solution <0 °C / 32 °F or >51 °C / 122 °F. Check solution temperature. Ensure temperature probe plug is fully inserted.
Temperature displays 'or', 'ur', '- -'	**'or'** Over range temperature. **'ur'** Under range temperature. **'- -'** Temperature probe not connected.	Solution >51 °C / 122 °F. Solution <0 °C / 32 °F. Ensure temperature probe plug is fully inserted. Temperature probe is faulty, replace.
pH symbols flashing	It has been more than a month since last pH calibration.	Clean pH probe, then calibrate.
'HELP' flashing [Ineffective control detected]	Dosing solution container empty.	Refill dosing solution container.
	Dose direction setting incorrect for your system.	Ensure setting reflects dosing solution in use. i.e. For Acid select Down.
	Dose on/off times incorrect.	See section 18.0 for setting Dose On/Off times correctly.
	Output from tube not dripping into solution.	Ensure tube output drips into tank.
	Solution is not mixing.	Ensure pH correction solution is being mixed in tank.
	pH probe not seeing pH changes, after dosing	Ensure pH probe is in tank/reservoir solution with adequate mixing.

28.0 Frequently asked questions

Question	Answer
Why is the '⇧' or '⇩' flashing but the pump is not turning?	The '⇧' or '⇩' will flash when ever the Bluelab pH Controller Connect M is in a dose cycle. This includes the 'OnTime' and 'OffTime'. The pump does not turn during the 'OffTime'.
What are dosing lockouts?	A feature that stops the Bluelab pH Controller Connect M from dosing if: • The temperature probe measures a solution temperature of less than 0 °C / 32 °F or more than 50 °C / 122 °F. • The pH reading does not change after 15 dose cycles.
Do I need to use the temperature probe with ATC for pH?	You can omit use of the ATC probe if:- 1) You do not use EarthLink On setting to stabilise the pH value 2) Your solution temperature is stable and you calibrate the pH probe in calibration solutions at the same temperature as the reservoir / tank solution. 3) Your pH is close to 7.0 pH
Why should I use earthlink?	To remove/reduce any "mains earthloop" issues affecting the pH value's stability.
How do I use Earthlink?	Ensure the ATC probe is installed and in the same solution as the pH probe. Press '√' to view status of pH mV value behaviour. Change the Earthlink setting in MENU and watch the pH mV value again. Select the Earthlink option that gives the least pH mV noise/variation. If neither option improves pH stability: 1) Calibrate pH probe, see section 14.0. 2) Suspect Mains electrical problems. Obtain Electrician assistance.
How do I determine the best Dose OnTime/ OffTime values?	Adjust OnTime such that 3 to 5 doses shifts the pH by only 0.1pH. If <= 2 doses moves pH more than 0.1pH, you risk overdosing. (pH changes past Required Value). If it takes >=5 doses you will have a slow response to any changes. You may also get "HELP" displayed if pH hasn't moved enough if 15 dose cycles. If < 3 doses at 1 sec OnTime shifts the pH more than 0.1pH, you will need to dilute the dosing solution to a lower concentration.
	Adjust OffTime such that the last dose is fully mixed before the next dose cycle starts. If OffTime is too short, you risk overdosing (pH changes past Required Value). If OffTime is too long, correction to pH changes will take longer than necessary.
How do I reset the Bluelab pH Controller Connect M to "as Shipped Defaults"?	Hold <cal> button down and apply power. Release button when "Restored Factory Defaults" appears on screen.
How do I reset pH calibration to "Defaults"?	You shouldn't need to. The pH probe can be calibrated anytime to the Bluelab pH Controller Connect M. Follow the calibration steps in section 14.0.

29.0 Technical specifications

	pH
Control parameter	pH - user selectable single direction (up or down)
Control range	0.1 – 13.9 pH
Dose rate	120 ml per minute
Resolution	0.1 pH
Accuracy at 25°C/77°F	±0.1 pH
Calibration	Two or three point (pH 7.0 and pH 4.0, and/or pH 10.0)
Temperature compensation	Yes (if temperature probe is in the same solution as pH probe)
Operating environment	0 - 50°C / 32 - 122°F
Signal range	**Indoor / Urban:** Up to 66 feet / 20 meters **Outdoor / RF line-of-sight:** Up to164 feet / 50 meters
Frequency band	2.4 GHz ISM
System Requirements	Microsoft Windows XP or greater for Bluelab Connect Software. *Internet connection required for data logging to the cloud
Certifications	CE, FCC, IC. Contains Model XBEE2 Radio, IC: 4214A-XBEE2, FCC ID: OUR-XBEE2
Power source	**Input:** 100-240 Vac, 50-60 Hz, 5 VA, 4 interchangeable plug types (USA, Euro, UK, NZ/AUS) **Output:** 24VDC 0.4Amp
Screen display languages	English, Deutsch, Español, Français, Nederlands

Bluelab pH Probe replacement

SKU: PROBPH

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 bluelab.com

Bluelab Probe Care Kits

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 range is available for:

- pH probe care SKU: CAREKITPH
- pH & conductivity probe care SKU: CAREKITPHCON
- Conductivity probe care SKU: CAREKITCON

All the tools you need are included in each kit.

To re-stock your solutions, choose from the Bluelab Solutions range.

Bluelab Probe Care Kit - pH contains:

- Bluelab pH Probe Cleaner
- Single-use Bluelab Solution Sachets, 2 each of: pH 7.0 & pH 4.0, KCl Storage Solution, 18 ml / 0.6 fl.oz
- Probe care instructions
- 3 x plastic cups
- Toothbrush (pH probe cleaning instrument)

Bluelab pH Probe KCl Storage Solution

SKU: STSOL120/STSOL250

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 Bluelab KCL pH Probe Storage 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 Leap pH Probes

Bluelab Connect Stick 2
SKU: CONSTICK2

The Bluelab Connect Stick 2 receives wireless data from one or more Bluelab connect devices.

Your data can then be logged to your local computer and/or to the cloud.

You can add other Bluelab Connect devices to your Connect Software at the click of a button.

Connect Stick 2

3 metre / 9.8 foot USB-C standard cable

Bluelab Connect Range Extender 2
SKU: CONEXTEND2

Bluelab Connect Range Extender 2 receives boosts the data signal strength.

Extend the wireless range by positioning a range extender between your Bluelab Connect devices and your connect stick.

Using the Bluelab Connect Range Extender 2 requires you to already have a connect stick and one or more Bluelab Connect enabled devices.

Connect Range Extender 2

3 metre / 9.8 foot USB-C standard cable

Bluelab Peristaltic Pump & Cassette
SKU: PUMPCONT-M

Replacement pump motor, cover and tubing for Bluelab pH Controller Connect M & Peripod M

Quick and simple to replace when required.

Bluelab Acid/Alkali Resistant Dosing Tube with Connectors
SKU: TUBEACID-SM

Replacement inlet/outlet tube - 13 foot / 4 meters.

For use with Bluelab pH Controller Connect M & Peripod M

Bluelab Temperature Probe replacement
SKU: PROBTEMP

Use the Bluelab Temperature Probe in the same solution as the Bluelab pH Probe. The probe provides a temperature reading and automatic temperature compensation (ATC) for pH measurements.

Bluelab

2-YEAR LIMITED WRITTEN WARRANTY

Comes with a 2-year limited written warranty,
2-year warranty for pump
2-year warranty on Bluelab Temperature Probe
1-year warranty for pump cassette
6-month warranty for Bluelab pH Probe
6-month warranty on tubing
Proof of purchase required. For full terms and conditions visit bluelab.com/product-warranty.

let's talk.

If you need assistance or advice - we're here to help you.
North America: **1-855-525-8352** Europe: **+ 31 (0) 85 05 16 848**
Rest of the world: **+64 7 578 0849** Email: **support@bluelab.com**

get online.

Looking for specifications or technical advice?
Visit us online at **bluelab.com** or **facebook.com/bluelabofficial**

To watch instruction videos, visit our online video library:
youtube.com/BluelabOfficial

post.

Bluelab Corporation Limited
8 Whiore Avenue, Tauriko,Tauranga 3110,
New Zealand

Instruction Manual English CONTPHCONM_V1_020222

bluelab.com