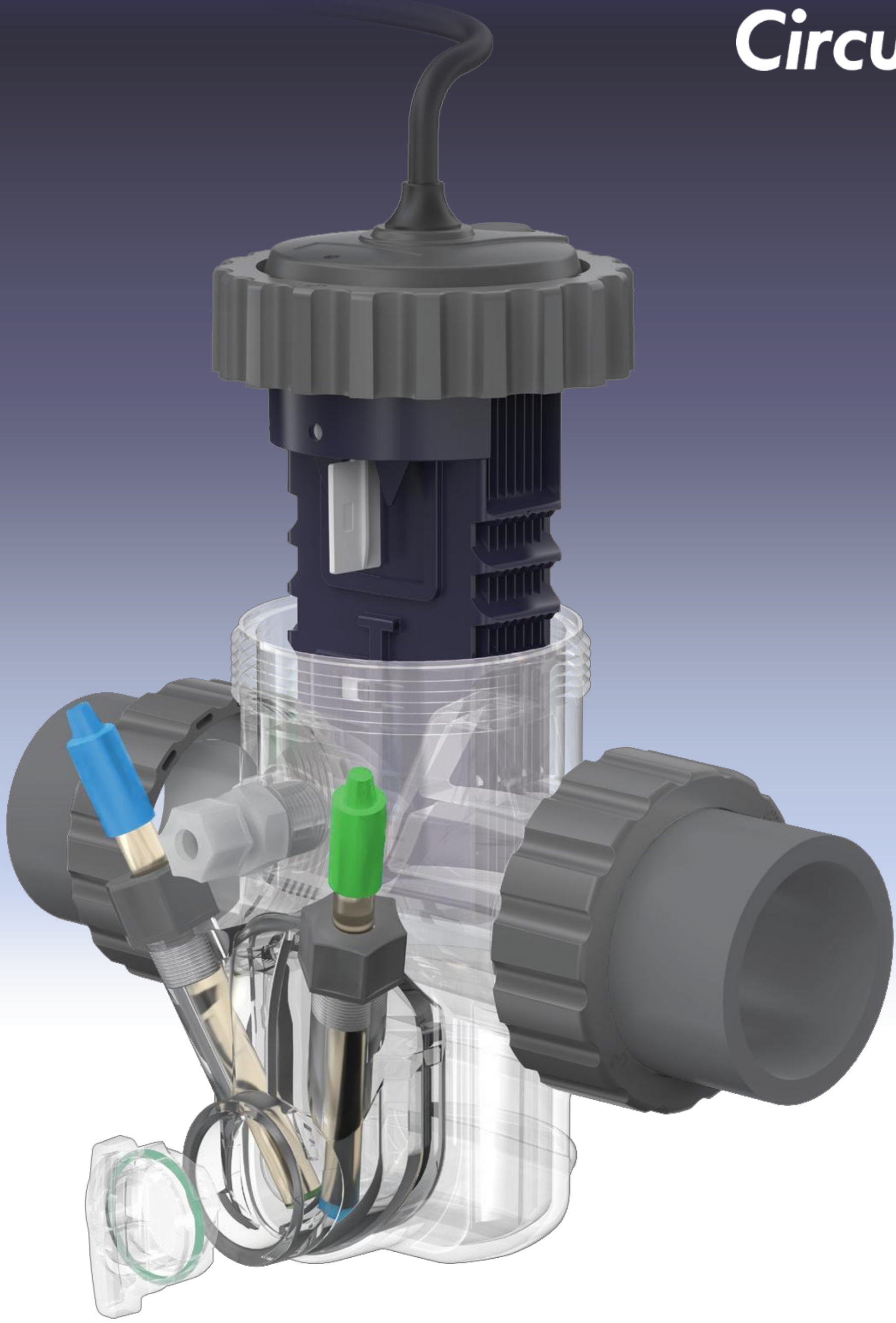
CORE CONTROL™

CircuPool®



Installation and Operation Guide

BALANCE CONTROL Upgrade Kit

Add ORP & pH Sensors For Essential Chemical Control & Monitoring
Expandable Platform Providing Automation of Your Pool's Core Needs

#35905120 | 4300-8A | R202506

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READ AND FOLLOW ALL INSTRUCTIONS

All electrical work must be performed by a licensed electrician and conform to all national, state, and local codes. Improper use or installation can badly harm the unit and its surroundings. When installing and using electrical equipment, basic safety precautions should always be followed, including the following:

- **DANGER!** Disconnect all AC power before installation. Do not operate the unit with the cover open.
- Position the equipment so that disconnecting device is easily accessible.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- **WARNING!** To reduce the risk of injury, do not permit children to use/access this product.
- The Control Module must be mounted **vertically** on a flat surface, and at a minimum horizontal distance of 5 ft (or more, if local codes require so) from the inside walls of the swimming pool.
- **WARNING – risk of electric shock!** Connect only to a grounding type circuit protected by a ground-fault circuit-interrupter (GFCI) outlet. The installer should provide this GFCI requirement. The GFCI should be rated for minimum 6 Amps and tested on a regular basis by pushing the test button. If the GFCI fails to operate correctly, there is ground current flowing indicating the possibility of electric shock: **do not use this unit**. Disconnect unit and have a qualified professional fix the problem before operating again.
- The Input circuit must be connected only after OVERCURRENT DEVICES, such as fuse or circuit breaker to limit the amperage in the input wire to the maximum that is permitted by the National electrical Code.
- The Control Module must be permanently connected, with copper wire, not less than 14 AWG.
- Do not bury the cord. Place the cord to minimize damage by lawn mowers, hedge trimmers & other equipment.
- **WARNING!** To reduce the risk of electric shock, replace a damaged cord immediately.
- **WARNING!** To reduce the risk of electric shock, do not use an extension cord to connect the unit to electric power supply; provide a properly located outlet.
- Wiring of the unit must be performed according to the wiring instructions detailed in this manual.
- Build-up of flammable fumes can result in a hazardous condition if the cell is allowed to operate without water flow.
- Ensure that equipment and materials used in or around the pool and spa are compatible with salt-based sanitation systems. Certain materials may be susceptible to salt and chlorine damage.
- **DANGER!** Working with muriatic acid can be dangerous. **READ THE FOLLOWING BEFORE HANDLING AND WORKING WITH ACID** (known as muriatic acid, hydrochloric acid, “pool acid”). Always wear rubber gloves and eye protection. ALWAYS ADD ACID TO WATER, NEVER WATER TO ACID. Splashing or spilling acid can cause sever personal injury and/or property damage.
- Acid must be stored safely and securely. Access to area with acid storage must be limited.
- Make sure there is proper ventilation for the area around the pool equipment and wherever acid is stored; it must be properly vented to avoid damage from acid vapors.
- Under no circumstances should an enclosed pool equipment room be used to store tools, maintenance equipment, furniture, sports gear or any other apparatus that is not related to the pool, including spare acid containers. The pool equipment room must be aired and vented prior to entering it.
- Acid container must be stored inside a spill containment vessel (a basin to hold acid in case of overflow or tipping of the acid container)
- **SAVE THESE INSTRUCTIONS.**

READ THE FOLLOWING BEFORE HANDLING AND WORKING WITH ACID

ACID USED FOR SWIMMING POOLS CAN CAUSE SEVERE BURNS TO SKIN, MOUTH, AND EYES. BOTH LIQUID ACID AND ITS VAPORS ARE DANGEROUS; MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION CAN CAUSE SEVERE LUNG DAMAGE

WARNING! Please read and understand the following risks, and take all necessary precautions. USE PROTECTIVE GLOVES, GOGGLES, AND CLOTHING FOR YOUR SECURITY if you may handle acid or manipulate components which have been in contact with acid. Have source of fresh water nearby for flushing/rinsing.

- **INHALATION**
  - Inhalation of vapors can cause coughing, inflammation of the nose, throat, and upper respiratory tract infection, and death. In case of inhalation, move to an area of fresh air immediately.
- **INGESTION**
  - Swallowing can be fatal. Contact local poison control center or physician immediately. Give large amounts of water or milk. Allow person to vomit. If committing occurs, keep head lower than hips to avoid aspiration. If person is unconscious, turn their head to the side. Seek immediate medical attention.
- **SKIN CONTACT**
  - Wash skin with soap and water for at least 20 minutes and remove contaminated clothing and shoes. All contaminated articles should be thoroughly cleaned and rinsed before re-use.
- **EYE CONTACT**
  - Flush eyes immediately with water for at least 20 minutes. Seek immediate medical attention.
- **STORAGE**
  - Store acid and all related containers in a ventilated location protected from excess heat and direct sunlight. Access should be limited to areas where acid is stored. Storage should be secure, minimizing the risk of tampering, accidents, and spills.
- **PERSONAL PROTECTION**
  - **VENTILATION**
    - Acid containers should be stored, opened, and used in a well-ventilated area. Handling acid outside can reduce risk.
  - **EYE PROTECTION**
    - Use splash-resistant safety goggles.
  - **CLOTHING**
    - Wear chemical-resistant clothing when handling or working with acid.
  - **GLOVES**
    - Wear chemical-resistant gloves when handling or working with acid.
  - **DISPOSAL**
    - Muriatic acid is a hazardous substance when spilled or discarded due to its corrosive nature. Safely dispose of empty containers following all manufacturer and local guidelines. Small spills of acid may be neutralized using baking soda; carefully pour the baking soda onto the spilled material until the fizzing stops, then mop or scoop up the residue. Should a spill occur and containment or control is beyond the capabilities at hand, expert assistance should be requested; contact your local fire department or hazardous materials spill team.

- **SAVE THESE INSTRUCTIONS.**

BALANCE CONTROL Owner's Manual

INTRODUCTION

Congratulations on your recent purchase of the BALANCE CONTROL upgrade kit for CircuPool CORE CONTROL system. This sophisticated add-on allows your system to measure and monitor two of the pool's most essential water chemistry levels, ORP and pH. The BALANCE CONTROL upgrade kit allows you to elevate your pool ownership experience & reduce a significant source of pool maintenance hassle & guesswork.

The BALANCE CONTROL upgrade kit includes the main components to add advanced monitoring and control capabilities to your existing system. The ORP (oxidation-reduction potential) Sensor measures how much chlorine generation is needed in order to provide properly sanitized water, and the pH sensor measures how acidic the water is. As these sensors provide real-time data to the CORE CONTROL system, it's able to track this data, send automatic alerts, and take action and provide smart operation. ORP data allows for smart chlorine production, ensuring continuous sanitation at just the right levels. pH data allows you to be alerted when your balance drifts out of range, or with the optional Acid Injection Module (sold separately), the system is able to ensure continuous automated pH balance.

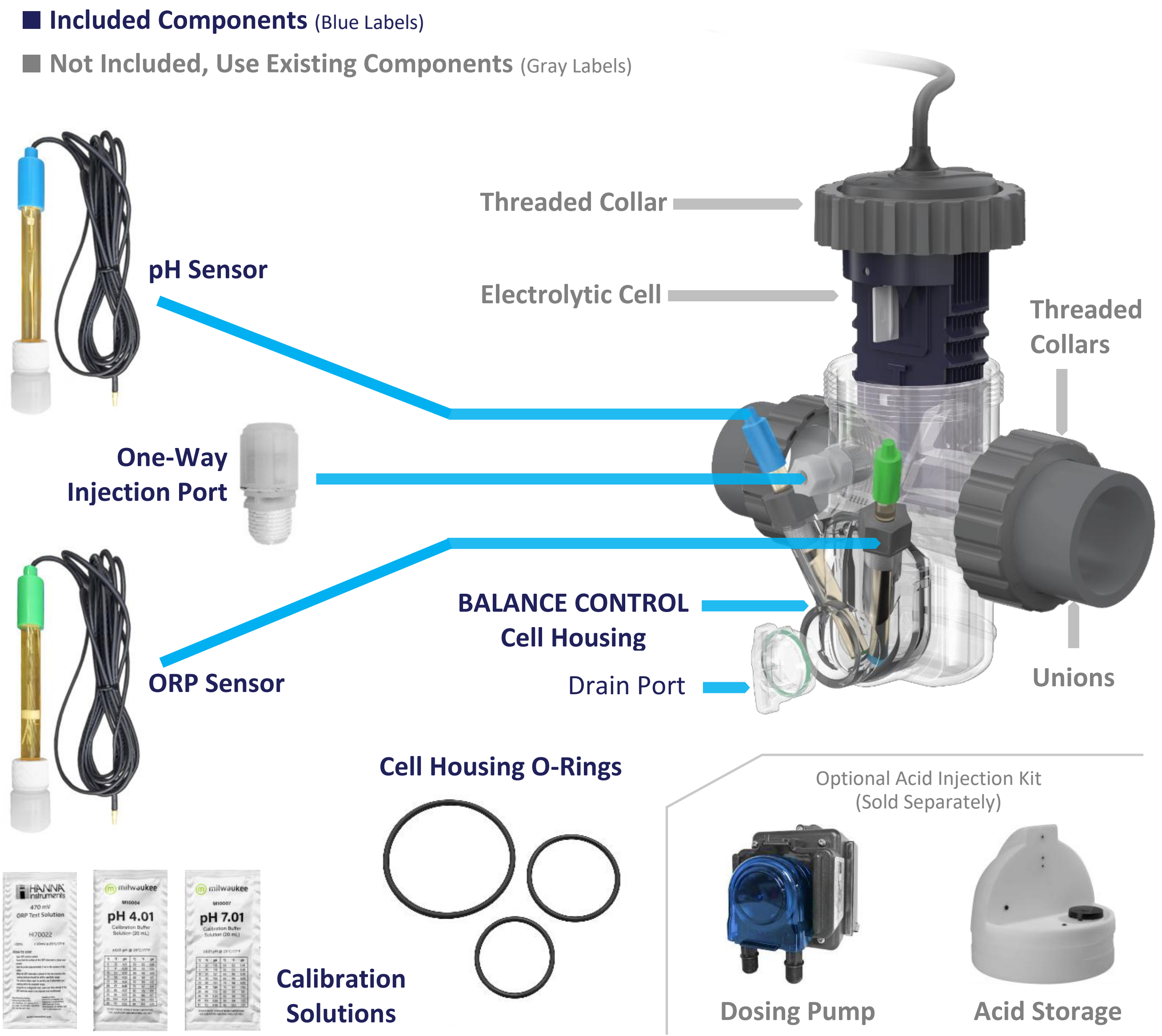
GETTING STARTED

READ ENTIRE MANUAL FIRST - To ensure consistent & reliable operation, the pool and equipment must be used and maintained as specified. Most issues are easily avoidable with correct maintenance.

Before installation or operation, please take the time to read this entire manual, compare package contents with the parts list, and gather tools required. Improper installation may void the warranty and create unnecessary hazards. This manual contains step-by-step instructions to help ensure that your installation meets the recommended standards. Spending the time to understand your system and its functions will ensure successful, trouble-free operation.

As with any electrical device, it is very important that the installation and service of this equipment be performed by a qualified person with the skills and experience required to do it safely and correctly. Improper installation or service can result in severe electrical shock to the installer or user of the equipment or pool. Please choose your installer with great care! Be sure to familiarize yourself with the pool chemistry requirements and maintenance procedures. If you are unsure about any of the information in this manual, please contact your installer / dealer. Please visit www.circupool.com/help for more information, tips, and troubleshooting assistance.

The basic **BALANCE CONTROL** upgrade kit includes the following in its user-friendly, integrated design. Unpack the system carefully, *do not* use a knife or sharp tool to open the box as it may damage the contents.



BALANCE CONTROL Cell Housing: This component easily replaces the existing CORE CONTROL cell housing, and allows simple integration of the system's chemical automation components.

ORP Sensor: This component measures the ORP (oxidation-reduction potential), which indicates how much chlorine generation is needed in order to provide properly sanitized water. ORP data allows for smart chlorine production, ensuring continuous sanitation at just the right level to meet your pool's unique needs.

pH Sensor: This component measures the pH (potential of hydrogen, or acidity balance), which indicates how acidic or alkaline the water is in order to provide proper balance. pH data allows for helpful automatic alerts (and continuous balance to meet your pool's unique needs when using the optional Acid Injection Kit).

One-Way Injection Port: This component allows you to easily connect the optional Acid Injection Kit to your BALANCE CONTROL Cell housing with minimal effort. **NOTE:** Some models may come with a Threaded Sealing Plug in place of the One-Way Injection Port in the Cell Housing. If present, keep in place until Acid Injection Kit is utilized - at which point you can remove Plug and install Injection Port into Cell Housing (ensure generous thread sealant tape between two components).

Cell Housing O-Rings: These components are an extra set of O-rings so that you can ensure that new water-tight seals are in place when you connect the BALANCE CONTROL Cell housing to your existing system.

Calibration Solutions (ORP, 7.0 pH, 4.0 pH): These packets allow for sensor calibration using the My-Pool app. Calibration is required if BALANCE CONTROL Upgrade Kit is purchased separately, see page 17.

Acid Injection Kit: This optional upgrade is sold separately (see dealer for availability). When used, the system is able to ensure continuous automated pH balance. When the pH Sensor data indicates that the measured pH is too high, the Dosing Pump injects small amounts of acid to restore your pool's balance in real-time, in response to your pool's ever-changing conditions. Acid Storage solutions are available for a convenient and secure way to store a high capacity of swimming pool acid, so that refills are infrequently needed.

Existing Components, Retain For Continued Use

> **Electrolytic Cell + Threaded Cell Collar:** The existing CORE CONTROL Electrolytic Cell will continue to be used, and can easily be removed from the existing standard CORE CONTROL Cell Housing and re-attached to the new BALANCE CONTROL Cell Housing using the existing threaded Cell collar.
>
> **Plumbing Unions + Threaded Union Collars:** The existing CORE CONTROL plumbing unions will continue to be used; the existing standard CORE CONTROL Cell Housing can easily be removed by unscrewing the existing threaded union collards, and the new BALANCE CONTROL Cell Housing attached using the existing threaded Union collars.

Additional Items Required (Not Included)

- Electric Drill with bits
- Screwdrivers (Phillips and flathead)
- Pipe wrench
- Safety equipment (gloves, goggles, protective clothing, etc…)
- Pencil for marking

EQUIPMENT INSTALLATION

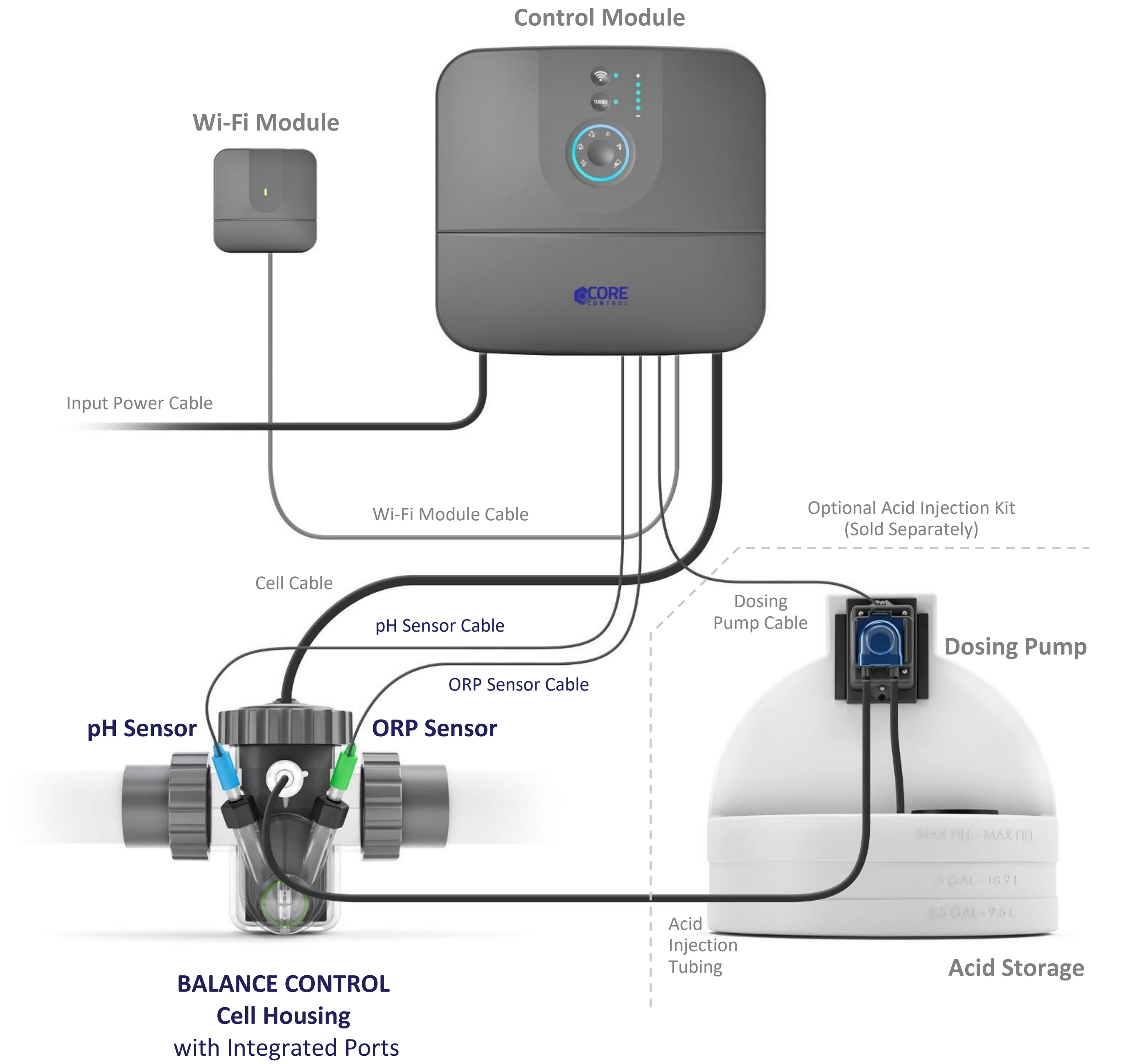
SAFETY MEASURES: See important safety instructions on page 3. Installation should only be performed by a qualified individual who also has working knowledge of basic pool service operations.

WARNING! Make sure all equipment is disconnected from power and depressurized. Verify that no power is present before opening the control panel or making any wiring connections. Improper handling may result in **electric shock, serious injury, or equipment damage**.

Installation Overview

BALANCE CONTROL Upgrade Kit items are labelled in blue, shown in relation to the rest of the complete CORE CONTROL system. Instructions on the following pages will outline how to connect the BALANCE CONTROL components (Cell Housing, pH Sensor, and ORP sensor) to the system, calibrate sensors (if Upgrade Kit purchased separately and not packaged with CORE CONTROL), and program chemical automation set points in the My-Pool app.

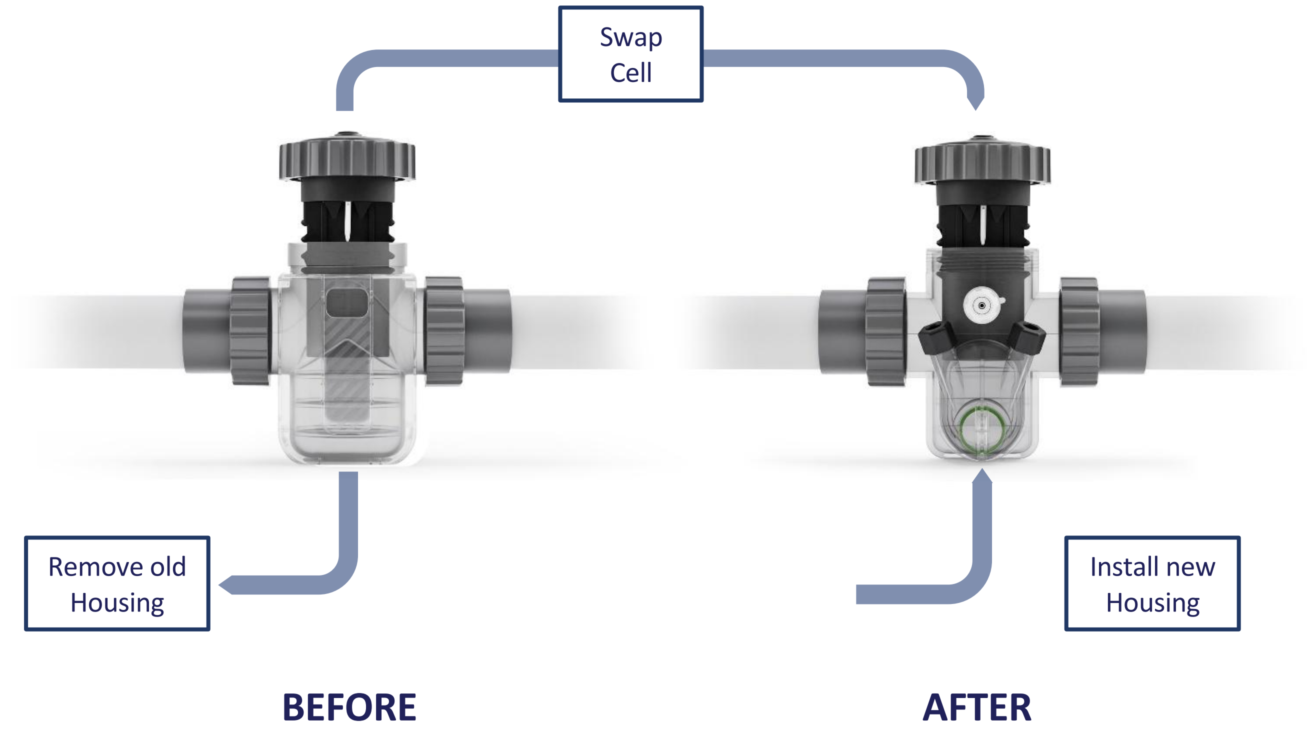
IMPORTANT: Before beginning installation, it is ideally recommended that your pool chemistry be balanced and stable, especially Free Chlorine and pH. This will ensure a fast start-up process and minimal ongoing effort.



Installing BALANCE CONTROL Cell Housing

Locate the existing standard CORE CONTROL Cell Housing in your pool system's plumbing. Verify that your circulation system has been depressurized, then follow these steps to install the new BALANCE CONTROL Cell Housing:

1) Remove the existing Electrolytic Cell by unscrewing the large Threaded Cell Collar on top. Retain the Cell for continued use.
   - Inspect the large O-Ring around the top of the Cell, replace with new O-Ring if necessary.
2) Remove the existing CORE CONTROL Cell Housing by unscrewing the two Threaded Union Collars on the left and right side.
3) Ensure the two new small O-Rings (included) are installed and properly seated in the grooves of the new BALANCE CONTROL Cell Housing. Place the BALANCE CONTROL Cell Housing between the existing plumbing unions, and then hand-tighten the two Threaded Union Collars to secure it in place.
4) Re-install the existing Electrolytic Cell by screwing its large Threaded Collar to the top of the BALANCE CONTROL Cell Housing hand-tight.



Installing pH Sensor

Continued from page 8, see important Equipment Installation safety information and **WARNINGS!** Locate the blue pH Sensor and follow these steps to install it in the BALANCE CONTROL Cell Housing:

1) Locate the black nut from the left port of the BALANCE CONTROL Cell Housing. Remove the black nut.
2) Put the black nut over the pH Sensor, paying attention to its orientation: the threaded side of the nut should face the tip of the sensor (down when installed).
3) Insert the silver ring over the bottom of the pH Sensor, paying attention to its orientation: the toothed side of the ring should face the tip of the sensor (down when installed).
4) Insert the black disc over the pH Sensor, paying attention to its orientation: the flat side of the disc should face the tip of the sensor (down when installed), beveled side should face silver ring.
5) Check that the orientation of all components is correct, this is necessary to ensure a secure seal.
6) Before placing the pH Sensor into the left port of the BALANCE CONTROL Cell Housing, make sure the black seal remains in place in the port.
7) Push the pH Sensor into the left port. Sensor should be pushed all the way, and then pulled slightly back.
8) Tighten the black nut by hand to secure the pH Sensor in the port.

Remove black nut from left port

Put nut over Sensor, threads towards tip

Put ring over Sensor, teeth towards tip

Put disc over Sensor, flat side towards tip

Check orientation of all components

Ensure seal present in Housing's port

Push Sensor in all the way, then back slightly

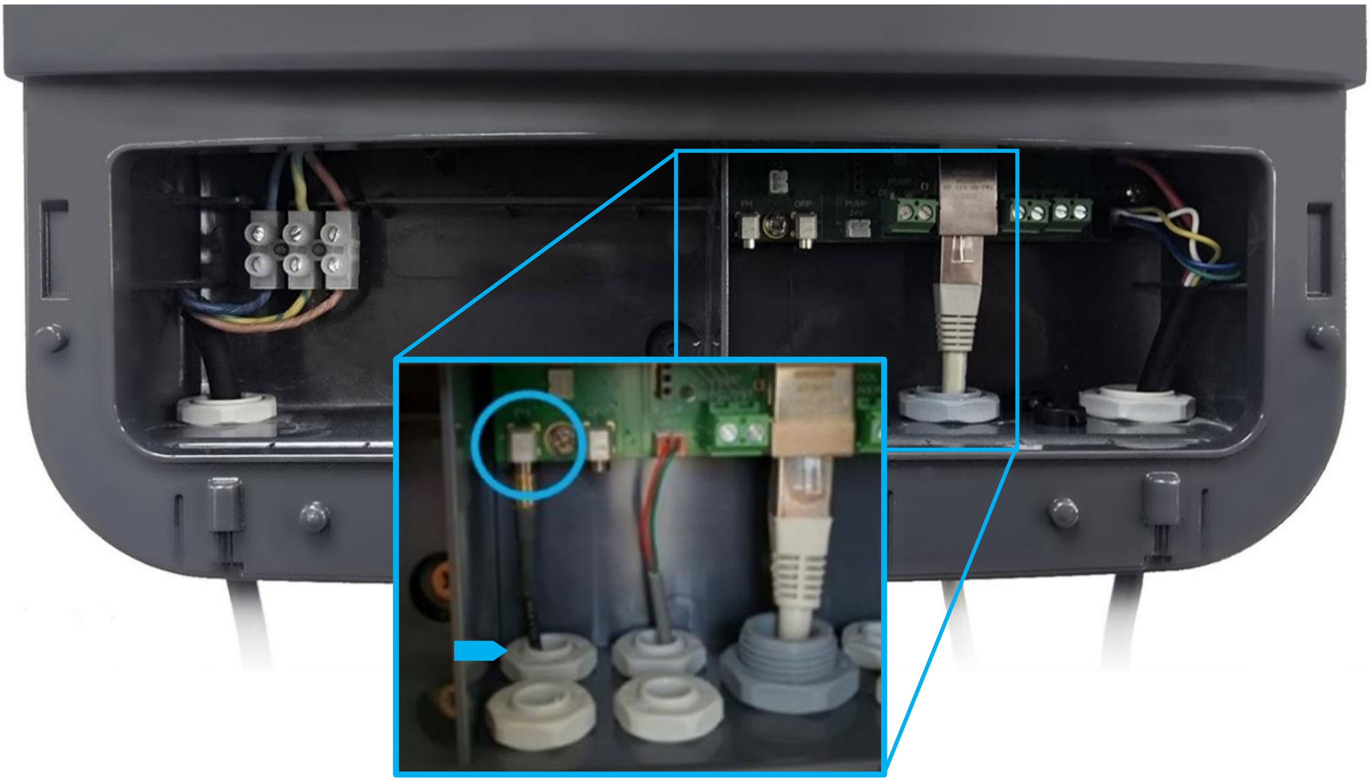
Hand-tighten black nut on pH Sensor

Wiring pH Sensor

WARNING! Make sure the system is disconnected from power before opening the Control Module or making any wiring connections. Improper handling may result in **electric shock, serious injury, or equipment damage**. Continued from page 8, see important Equipment Installation safety information.

IMPORTANT: Take care to route sensor cable away from AC power lines, variable-frequency drives, motors, or any other noisy electrical signal lines. Do not run signal lines in the same conduit as AC power lines.

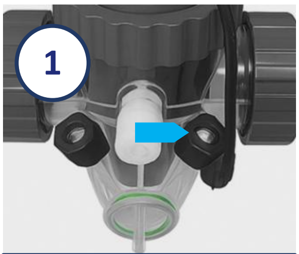
1) Verify that no power is present, open the wiring panel on the front of the Control Module.
2) On the wiring attached to the pH Sensor, locate the connector end.
3) Inside the Control Module, identify the back left PG connector on the bottom of the Control Module (marked with arrow below). Loosen PG connector to allow wiring to pass through.
4) Pass connector end of pH Sensor through PG connector, and insert connector end of pH Sensor into the circuit board connection marked with “PH” on left (circled below).
5) Tighten PG connector again.



Installing ORP Sensor

Continued from page 8, see important Equipment Installation safety information and **WARNINGS!** Locate the green ORP Sensor and follow these steps to install it in the BALANCE CONTROL Cell Housing:

1) Locate the black nut from the right port of the BALANCE CONTROL Cell Housing. Remove the black nut.
2) Put the black nut over the ORP Sensor, paying attention to its orientation: the threaded side of the nut should face the tip of the sensor (down when installed).
3) Insert the silver ring over the bottom of the ORP Sensor, paying attention to its orientation: the toothed side of the ring should face the tip of the sensor (down when installed).
4) Insert the black disc over the ORP Sensor, paying attention to its orientation: the flat side of the disc should face the tip of the sensor (down when installed), beveled side should face silver ring.
5) Check that the orientation of all components is correct, this is necessary to ensure a secure seal.
6) Before placing the ORP Sensor into the right port of the BALANCE CONTROL Cell Housing, make sure the black seal remains in place in the port.
7) Push the ORP Sensor into the left port. Sensor should be pushed all the way, and then pulled slightly back.
8) Tighten the black nut by hand to secure the ORP Sensor in the port.



Remove black nut from right port

Put nut over Sensor, threads towards tip

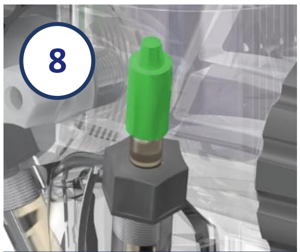
Put ring over Sensor, teeth towards tip

Put disc over Sensor, flat side towards tip

Check orientation of all components

Ensure seal present in Housing's port

Push Sensor in all the way, then back slightly



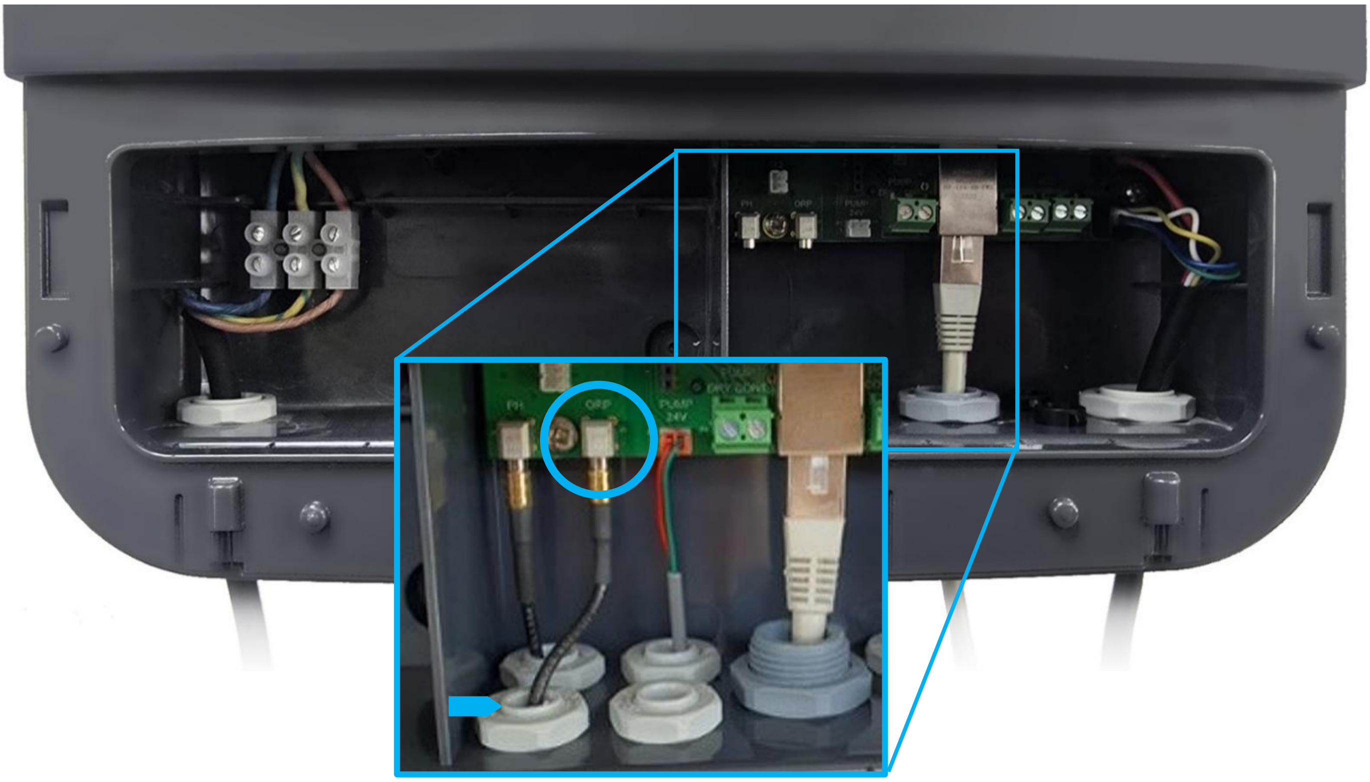
Hand-tighten black nut on pH Sensor

Wiring ORP Sensor

WARNING! Make sure the system is disconnected from power before opening the Control Module or making any wiring connections. Improper handling may result in **electric shock, serious injury, or equipment damage**. Continued from page 8, see important Equipment Installation safety information.

IMPORTANT: Take care to route sensor cable away from AC power lines, variable-frequency drives, motors, or any other noisy electrical signal lines. Do not run signal lines in the same conduit as AC power lines.

1) Verify that no power is present, open the wiring panel on the front of the Control Module.
2) On the wiring attached to the ORP Sensor, locate the connector end.
3) Inside the Control Module, identify the front left PG connector on the bottom of the Control Module (marked with arrow below). Loosen PG connector to allow wiring to pass through.
4) Pass connector end of ORP Sensor through PG connector, and insert connector end of ORP Sensor into the circuit board connection marked with "ORP" second from left (circled below).
5) Tighten PG connector again.



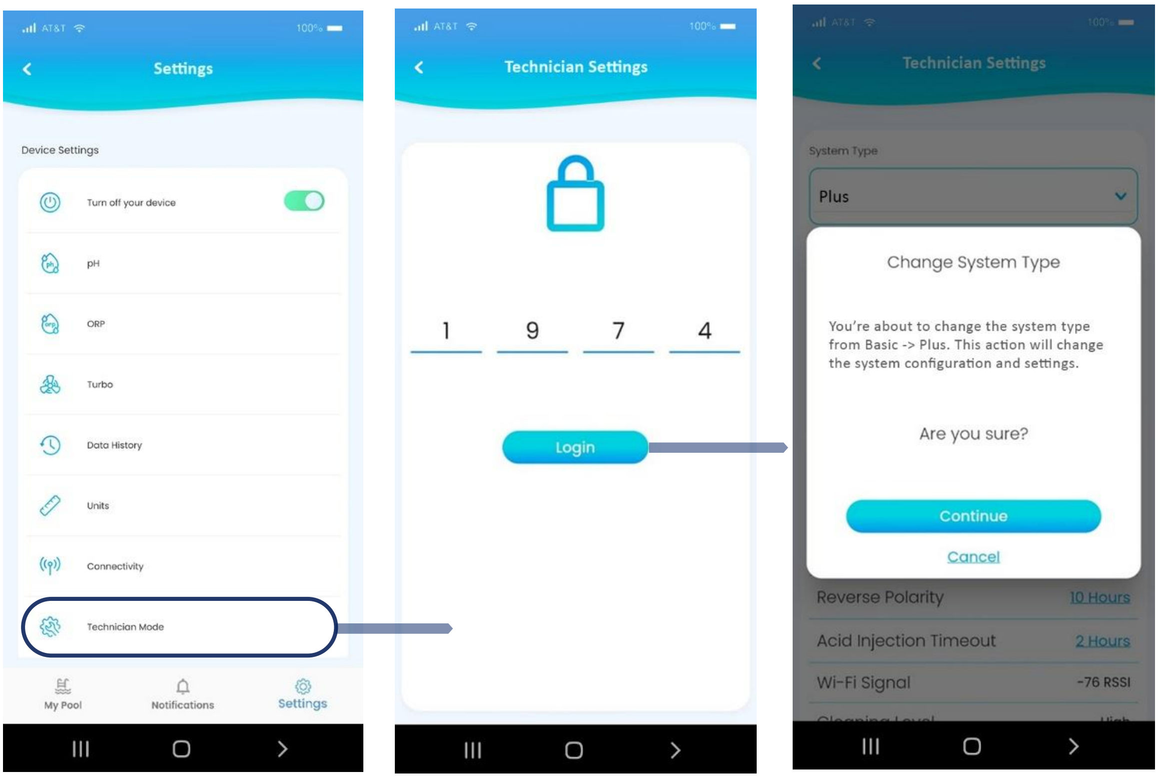
CHANGES IN MY-POOL APP

Updating App Configuration from “Basic” to “Plus”

In your My-Pool app, settings need to be updated in order to enable new chemical automation functionality. Before following these instructions, your My-Pool app must already be set up and paired to your CORE CONTROL, and the BALANCE CONTROL upgrade kit must be installed.

1) Open your My-Pool app, navigate to the Settings screen using the link in the navigation at the bottom of the screen.
2) Navigate down the lower portion of the Settings screen and press “Technician Mode”
3) Enter code “1974” and press Login to access the Technician Settings screen.
4) At the top of the Technician Settings, select the drop-down menu for “System Type”
5) Change the system from “Basic” to “Plus”
6) Press “Continue” on the confirmation window that pops up.
7) Press the back arrow to exit the Technician Settings screen.

WARNING! Do not modify any other fields in the Technician Settings menu. Any modifications on this screen may impair proper system operation or cause premature component failure which is excluded from Warranty coverage. All changes to Technician Settings must be done under explicit guidance from written instructions, Customer Support, or a trained technician.



Main Screen – Status Screen (Updated)

Note: data sync occurs quickly between the unit and the app but is not immediate. Please allow time for this to occur.

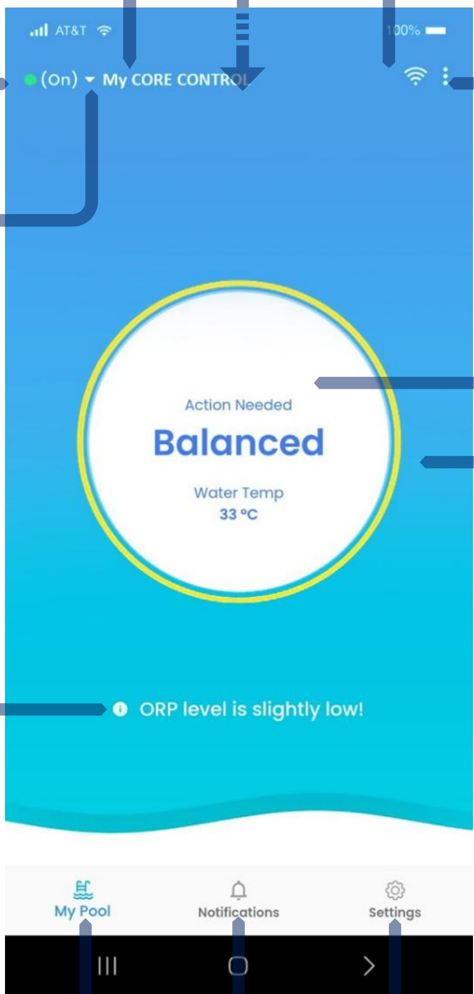
Swipe DOWN from TOP to "refresh" (forces a data to sync)

Device name

Connectivity icon – WiFi or Bluetooth. Press icon to switch between the two

Status of device ON/OFF

From the drop-down list, choose another device associated with the app



Additional options:

Share controller – share device with a different user

Add controller – pair another device to the app

Contact Us – contact customer support

Real time status summary

Green circle – pool is balanced. Real time values are within or above range

Orange circle – pool is balanced but may require intervention. Real time values are close to bottom range.

Red circle or error message – pool is not balanced. Real time values are below range

Inside circle displayed:

Last sample time, alerts, device status, water temp and more.

If Control Module is ON

Any specific alerts will display here, otherwise blank

If Control Module is OFF

Displays Power (On) button

Main screen

Alerts list

Settings

Note: Real-time pool data is only monitored when the equipment is turned on. Do not be alarmed that sensors are shown as N/A.

Monitoring Screen (New)

Note: data sync occurs quickly between the unit and the app but is not immediate. Please allow time for this to occur.

Swipe DOWN from TOP to "refresh" (forces a data to sync)

Device name

Connectivity icon – WiFi or Bluetooth. Press icon to switch between the two

Status of device ON/OFF

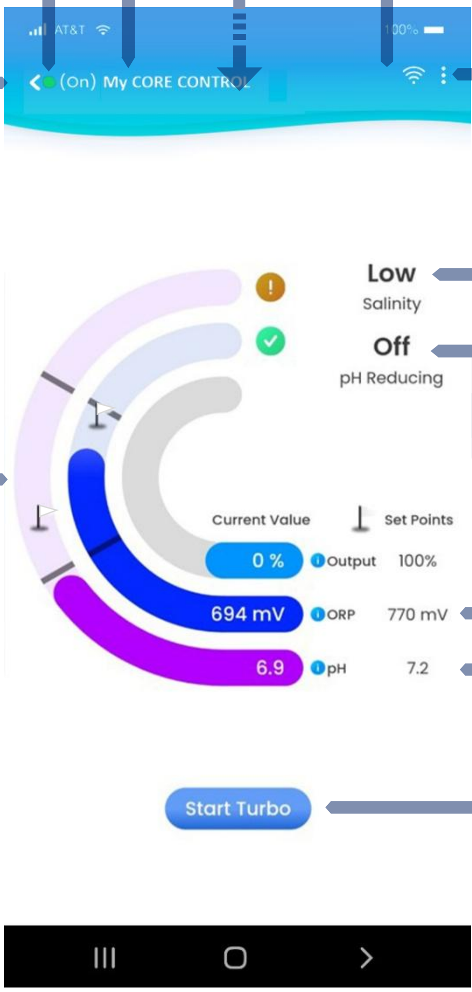
Back to Status screen

<u>Additional options:</u>

Share controller – share device with a different user

Add controller – pair another device to the app

Contact Us – contact customer support



<u>Status Graph</u>

The round colored bars display real-time values of pH, ORP, & chlorine output

The black lines mark the proper range for pH, ORP. If the colored bar is within range, an **Acceptable** icon is displayed at top. If not, an **Alert** icon is displayed at top

The flag icon marks the target set-point you've defined for that level.

Salinity level status

Acid injection status

Press on the text to open set-point value screen

Activates Turbo mode (100% chlorine output for 12-72 hours)

Note: Real-time pool data is only monitored when the equipment is turned on. Do not be alarmed that sensors are shown as N/A.

pH AND ORP SENSOR CALIBRATION

The calibration of both the pH and the ORP sensor is performed using the My-Pool app and corresponding calibration solutions. It is recommended that calibration be done at the start of each swim season, or after major water balance events (pool water replacement, algae bloom recovery, etc). **If BALANCE CONTROL upgrade kit is purchased separately, <u>initial calibration should be performed for both sensors</u>.**

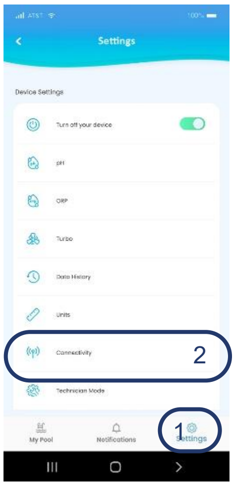
IMPORTANT: Always keep pH and ORP sensors submerged in liquid, drying will cause damage. Make sure sensors are not exposed to direct sunlight. Damage to the sensors will void the warranty.

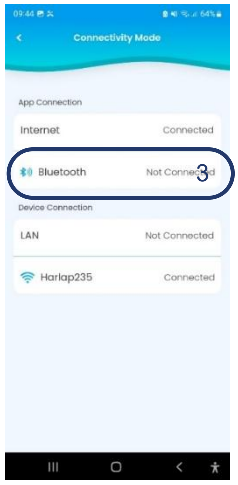
Setting Bluetooth Connectivity

Calibration must be performed on site and requires that you use a Bluetooth connection to the Control Module. Follow these instructions to set your connectivity before beginning any calibration process.

1) Press “Settings” from the right side of the navigation menu at the bottom of the screen.
2) Choose the “Connectivity” menu
3) Then under the App Connection section, choose “Bluetooth”

Note: App connection can be reset to Wi-Fi as desired after calibration is completed

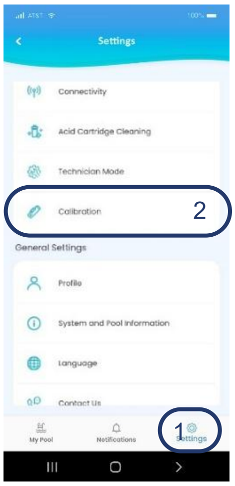


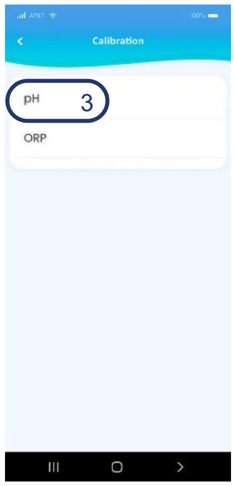


pH Calibration Procedure

Before performing calibration, please ensure the following. App should be connected to Control Module via Bluetooth (see above), Control Module should be set to Off mode (press center of LED Ring so that color shown is red) and pool pump should be off, and you should have the necessary buffer solution on hand. Follow these instructions to complete the calibration process. Remain close to the device throughout process.

1) Press “Settings” from the right side of the navigation menu at the bottom of the screen.
2) Navigate down, and choose the “Calibration” menu
3) Press “pH”

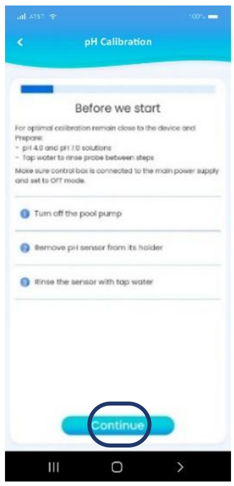




Before continuing with pH Calibration

Have the 4.0 pH and 7.0 pH solutions ready, as well as tap water to rinse the pH sensor between steps. Verify that the Control Module is in Off mode and LED Ring light is red. Remove the pH sensor from its holder and rinse with tap water. The process will begin with the 7.0 pH solution; have this standing by.

4) Press “Continue” when ready



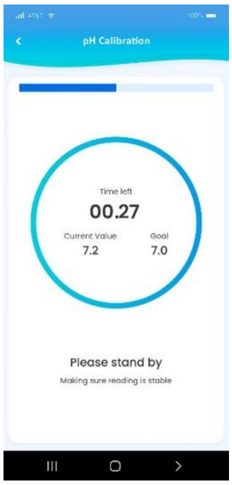
(pH Calibration Procedure continued)

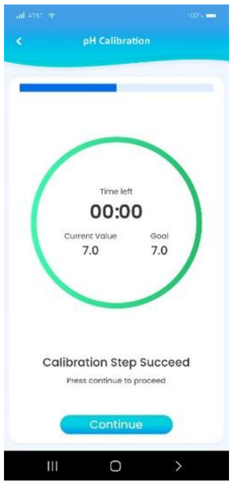
5) Place the pH sensor inside the 7.0 pH solution.
6) Stir the sensor several times while it is immersed in the solution.
7) Press “Continue” when ready to begin calibration.

The real-time values of the pH sensor are visible on screen - the goal and current values. When the calibration process is completed*, the circle color turns green, and “Calibration Step Succeeded” will display.

8) Press “Continue” when ready

*If calibration fails, the circle color will turn red. Press “Recalibrate” to begin the process once more. If the process fails again, the sensor may be faulty and require replacement.





9) Remove the pH sensor from the 7.0 pH solution
10) Rinse the sensor in tap water, shake to remove excess water (important)

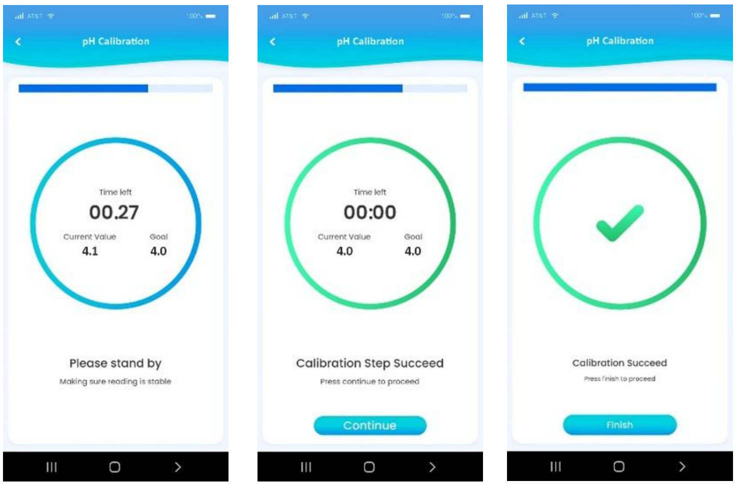
11) Immerse the pH Sensor in the 4.0 pH solution
12) Stir the sensor in the solution several times while it is immersed.
13) Press “Continue” when ready to begin calibration.

REMINDER: Always keep pH and ORP sensors submerged in liquid, drying will cause damage. Make sure sensors are not exposed to direct sunlight. Damage to the sensors will void the warranty.

(pH Calibration Procedure continued)

The real-time values of the pH sensor are visible on screen - the goal and current values. When the calibration process is completed*, the circle color turns green, and "Calibration Step Succeeded" will display.

14) Press "Continue" when ready
15) The Calibration Succeeded screen will display. Press "Finish"

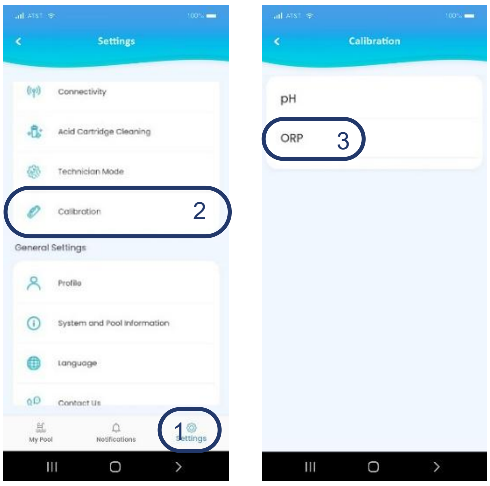


*If calibration fails, the circle color will turn red. Press "Recalibrate" to begin the process once more. If the process fails again, the sensor may be faulty and require replacement.

The pH Sensor is now calibrated!

ORP Calibration Procedure

Before performing calibration, please ensure the following. App should be connected to Control Module via Bluetooth (see above), Control Module should be set to Off mode (press center of LED Ring so that color shown is red) and pool pump should be off, and you should have the necessary buffer solution on hand. Follow these instructions to complete the calibration process. Remain close to the device throughout process.



1) Press "Settings" from the right side of the navigation menu at the bottom of the screen.
2) Navigate down, and choose the "Calibration" menu
3) Press "ORP"

Before continuing with ORP Calibration

Have the ORP solution ready, as well as tap water to rinse the ORP sensor between steps. Verify that the Control Module is in Off mode and LED Ring light is red. Remove the ORP sensor from its holder and rinse with tap water.

4) Press "Continue" when ready

REMINDER: Always keep pH and ORP sensors submerged in liquid, drying will cause damage. Make sure sensors are not exposed to direct sunlight. Damage to the sensors will void the warranty.

(ORP Calibration Procedure continued)

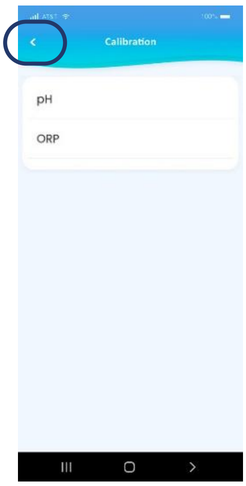
5) Place the end of the ORP sensor inside the ORP solution.
6) Stir the sensor several times while it is immersed in the solution.
7) Using the + / - buttons, adjust the “Solution” target values to match the value of the ORP buffer solution you are using. Values are written on the solution bottle, for example: “650 mV”
8) Press “Continue” when ready to begin calibration.

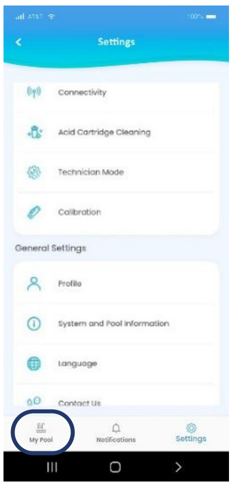
The real-time values of the ORP sensor are visible on screen - the goal and current values. When the calibration process is completed*, the circle color turns green, and “Calibration Step Succeeded” will display.

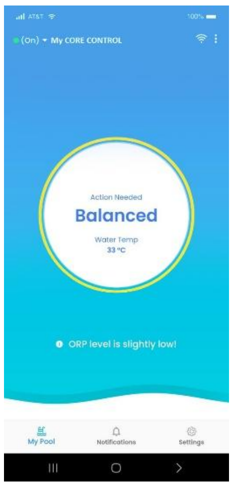
9) Press “Continue” when ready

*If calibration fails, the circle color will turn red. Press “Recalibrate” to begin the process once more. If the process fails again, the sensor may be faulty and require replacement.

“Calibration Succeed” message will display. Sensor calibration is now successfully completed. Press “Finish”. Press the < button to exit the calibration mode menu. Press “My Pool” on the left side of the lower navigation menu to return to the main screen.







REMINDER: Always keep pH and ORP sensors submerged in liquid, drying will cause damage. Make sure sensors are not exposed to direct sunlight. Damage to the sensors will void the warranty.

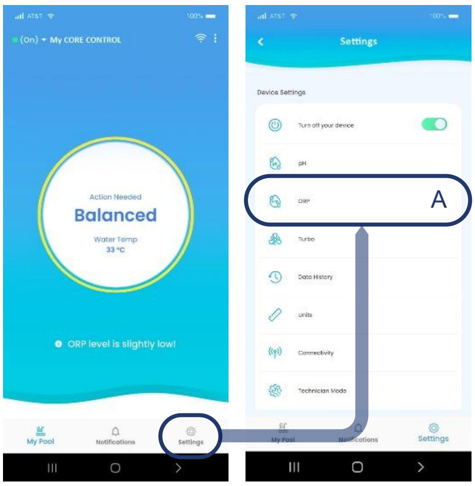
DEFINING THE ORP SET POINT

The ideal ORP set point will be unique to your pool. This process will walk you through benchmarking the ORP set point based on ideal starting conditions in your pool. ORP represents the overall sanitation demand in the water, and can be influenced by other factors. By starting with completely balanced water, and measuring the resulting ORP in your pool, and making this your set point, the system will help maintain these ideal conditions.

1) Start with balanced pH and chlorine levels in the pool water (1-3ppm free chlorine, 7.4-7.6 pH recommended). They must be stable before proceeding.
2) Measure resulting ORP by using the My-Pool app, seeing what ORP value is displayed.
3) This resulting ORP value should be the one you input in the app as the ORP set point. This ORP value will typically be at or near to the ideal setting to maintain proper free chlorine levels in the pool. **At this point it is recommended to regularly test the pool water to verify chlorine levels are remaining in range.**
    - If Free Chlorine levels drop too low, increase the ORP set point in 20 mv increments.
    - If Free Chlorine levels rise too high, decrease the ORP set point in 20 mv increments.
    - Continue testing pool water after each adjustment to ensure chlorine levels remain in range.

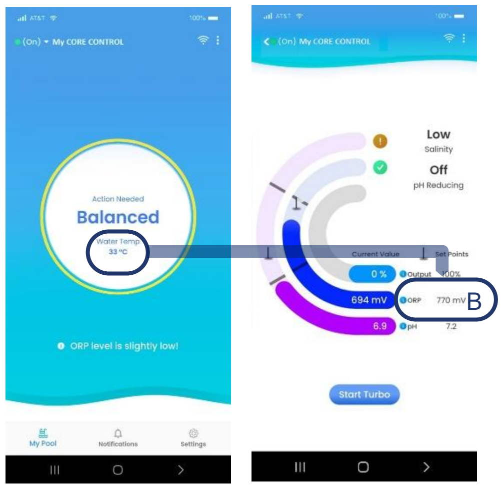
Accessing the ORP set point menu can be done in two ways:

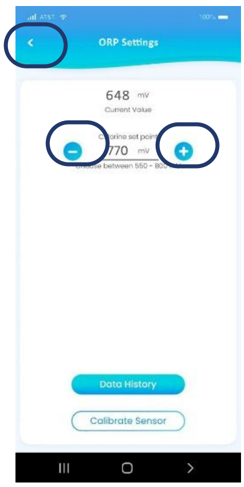
Press “Settings” on the right side of the lower navigation menu. On the settings screen, press “ORP”



OR

Tap the main circle on the home screen to access the Monitoring screen. From there, press the **ORP value** on lower right





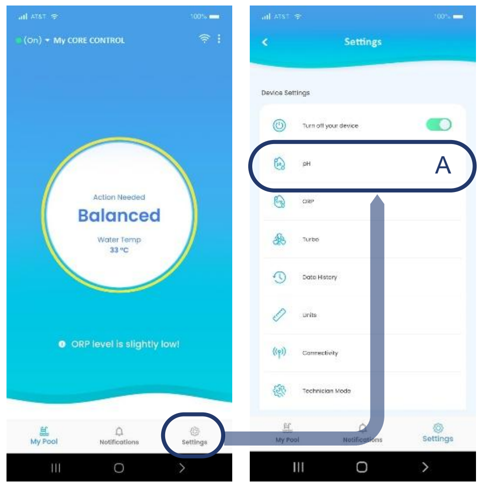
1) Press + / - to increase / decrease the set point values
2) Press < to confirm and go back to the previous screen

DEFINING THE pH SET POINT

REQUIRES PRIOR INSTALLATION OF ACID INJECTION KIT (Sold Separately)

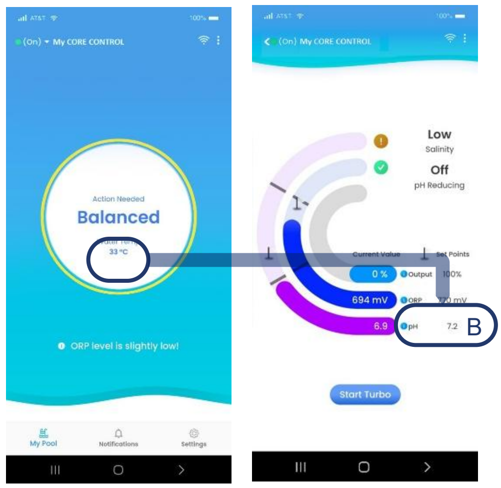
While the recommended range for pH is between 7.2 – 7.8, the industry generally recommends a target of 7.5 pH. Small changes in pH can have large effects. Higher pH, even when in range, can cause excess scaling and can negatively impact the effectiveness of chlorine. Lower pH, even when in range, has the potential to contribute to erosion. The most effective target for your pool may be different than general recommendations.

Accessing the pH set point menu can be done in two ways:

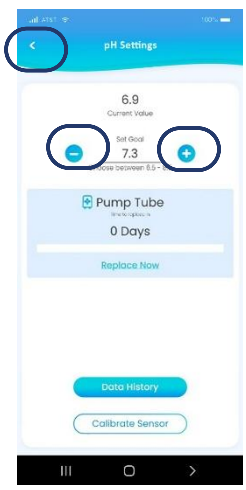


A) Press “Settings” on the right side of the lower navigation menu. On the settings screen, press “pH”

Or



B) Tap the main circle on the home screen to access the Monitoring screen. From there, press the **pH value** on lower right



1) Press + / - to increase / decrease the set point values
2) Press < to confirm and go back to the previous screen

MAINTENANCE

Sensor maintenance is outlined as follows. See documentation for other components for additional necessary regular maintenance.

Sensor Cleaning

To function properly, the sensors must be clean and free from oil, chemical deposits, or any other substance that might be coating the sensor. Once immersed in pool water, the sensors may need to be cleaned on a weekly or monthly basis depending on bather load, water quality, and other characteristics unique to your pool's usage and environment. Slow response, increased need to calibrate, and inconsistent readings are typical examples of indications that the sensors require cleaning.

To clean the sensors, carefully remove them from their ports in the Cell Housing.

First attempt to clean the sensors by vigorously stirring them in water or pouring water over them. Organic residue or hard debris stuck to a sensor can be chemically removed by soaking the sensor in 5-10% hydrochloric acid (HCL) for a few minutes and then rinsing generously with water. (For pool muriatic acid, which is often 32% strength, this would be a ratio of water-to-acid of roughly 5:1 for 5% or 2.2:1 for 10% strength)

Reinstall sensors into their ports in the Cell Housing, hand-tighten only.

IMPORTANT: Always keep pH and ORP sensors submerged in liquid, drying will cause damage. Make sure sensors are not exposed to direct sunlight. Damage to the sensors will void the warranty.

Sensor Replacement

The BALANCE CONTROL pH and ORP sensors are designed to provide the highest possible performance and longest service life. If sensors are properly cleaned but provide unstable readings or require excessive calibration, the sensors should be replaced.

Sensor Storage

Exposure to atmospheric conditions will cause the sensor tips to dry out. If sensors are to be removed or stored for one hour or longer, they must be properly stored in their original bottles.

When not installed, keep sensors in their original bottles, making sure that each one is filled with the original storage solution or tap water. If the storage containers have been misplaced, store sensors individually in small glass or plastic containers with tap water covering sensor tips.

Due to the design of the system, sensors can remain in the chamber as long as they are submerged in pool water if temperatures do not fall below freezing.

Sensors must be protected from freezing temperatures. Like all pool equipment, prevent damage by ensuring that water is not able to freeze and expand inside of the Cell Housing. Store sensors properly as outlined above during such conditions.

IMPORTANT: Always keep pH and ORP sensors submerged in liquid, drying will cause damage. Make sure sensors are not exposed to direct sunlight. Damage to the sensors will void the warranty.

TROUBLESHOOTING (pH / ORP SENSORS)

SCENARIO:	POSSIBLE CAUSE:	SUGGESTED ACTION:
My-Pool app doesn't show new chemical automation features	App has not been set to "Plus" mode	Follow instructions on page 14 to activate enhanced functionality.
ORP Value in monitoring screen shows 0	Low free chlorine	Use titration chemical test to verify. If free chlorine is low, run system at maximum chlorine generator output. Contact pool professional, ensure all chemicals on page 10 of CORE CONTROL manual are within range, add liquid chlorine or chemically shock pool if necessary.
	ORP Sensor requires calibration	Calibrate ORP sensor using ORP buffer solution as instructed in the section beginning on page 17.
	Faulty wiring	Check that ORP sensor is wired properly as instructed on page 12. Make sure wiring contacts are good.
	Sensor is dirty or has scale build up	Follow cleaning instructions on page 23, reinstall sensor and check that problem has been resolved.
	Faulty sensor	Replace ORP sensor. If ORP sensor has failed, it can be disconnected from the system and the system's chlorine production can be set to a manually chose level of output.
pH Value in monitoring screen shows 0	pH sensor detects water with 4.0 pH or lower	Discontinue pool use until pH is verified to be in range. Verify pH with a titration chemical test. In the unlikely event that pH is this low, manually increase pH levels in pool until in range.
	pH Sensor requires calibration	Calibrate pH sensor using pH buffer solutions as instructed in the section beginning on page 17.
	Faulty wiring	Check that pH sensor is wired properly as instructed on page 13. Make sure wiring contacts are good.
	Sensor is dirty or has scale build up	Follow cleaning instructions on page 23, reinstall sensor and check that problem has been resolved.
	Faulty sensor	Replace pH sensor.