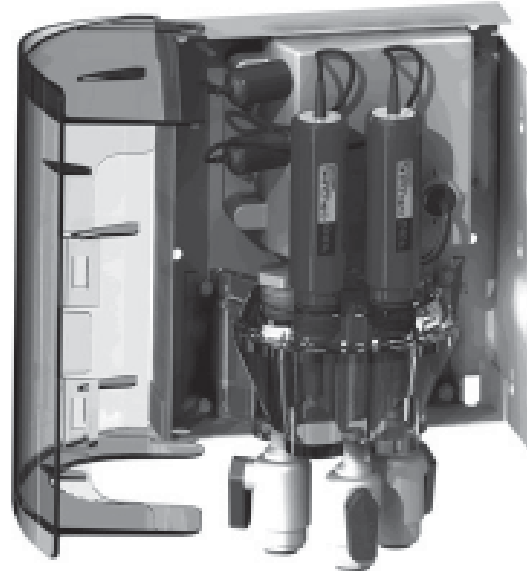


# ORP & pH Sensing Kit

for

PRO  
**LOGIC™**



**Installation and Operation Manual**

for

**AQL-CHEM**

## Introduction

When used with the Goldline Pro Logic control and AQL-CL chlorination kit, the AQL-CHEM helps provide a fully integrated chemistry solution for your pool. The Pro Logic senses the pool's ORP and pH levels and generates the correct amount of chlorine to keep your pool properly sanitized. If a Goldline AQL-CHEM2 dispense kit is also used, CO<sub>2</sub> can be injected into the pool water when necessary, giving you a complete automated system controlling both sanitization and pH balance.

## What's Included

The AQL-CHEM comes with everything needed to allow the Goldline Pro Logic to sense ORP and pH levels. The following is a description of the included components:

**Professional Grade ORP probe-** Samples water from the pool filtration system and sends signals to the Pro Logic indicating the oxidation-reduction potential (redox) of the pool water. ORP is an actual measurement of sanitizer activity and bacteriological water quality rather than an expression of chemical residual levels. ORP is not fooled by the effects of pH, TDS (total dissolved solids) and other factors giving a more accurate measurement of the effectiveness of chlorine and water quality.

**Professional Grade pH probe-** Samples water from the pool filtration system and sends signals to the Pro Logic indicating the acidity of the water. When used with a Goldline AQL-CHEM2 or other pH dispensing device, the Pro Logic can keep the pool water's pH levels balanced.

**Probe Cell:** The Probe Cell is used to house the probes and provide a location for water collection and testing. Two hoses are provided to connect the Probe Cell to the supply and return sides of the pool filtration system. The Probe Cell can be mounted directly to the Pro Logic or remote mounted in the vicinity of the Pro Logic (restricted by the length of the probe wiring).

**Additional Pro Logic Relay:** An additional relay is provided for Pro Logic PL-PS-4 and PL-P-4 models. This additional relay allows the user to add the AQL-CHEM2 or other pH dispensing device to these models. Install this relay only if you have a PL-PS-4 or PL-P-4 model and intend to add pH control.

**pH Dispense Pigtail:** The pH Dispense Pigtail provides a plug-in receptacle for the AQL-CHEM2 solenoid valve's linecord or other line voltage pH related dispensing device (peristaltic pumps, solenoid valves, etc.) that use a typical 110 VAC male plug.

**Various Hardware:** The AQL-CHEM includes the necessary tubing, tubing connectors and mounting hardware to complete the installation.

## Compatibility

This AQL-CHEM is compatible with all Goldline Pro Logic pool controls. For Pro Logic controls using the AQL-CL chlorination kit, the AQL-CHEM offers automatic chlorine generation based on the pool's ORP level.

The AQL-CHEM is not compatible with the Aqua Rite and Aqua Logic series of controls. An upgrade kit (AQL-CHEM-UPG) is available for use with some older Aqua Logic products using the AQL-CL chlorination kit. Contact your local Goldline dealer for more information.

# Installation

## Overview

Installing the AQL-CHEM requires the following steps:

- Mounting the Probe Cell
- Plumbing the Probe Cell
- Installing ORP and pH probes
- Wiring probes to Probe Cell communication box
- Wiring the Probe Cell to the Pro Logic
- Wiring the pH Dispense Pigtail
- Configuring the Pro Logic
- Validating Operation
- Establishing Maintenance Schedule

## Materials Needed for Installation

- 7/16" drill bit
- 1/4" NPT tap
- Two small adjustable wrenches if side mounting to PL
- 3/16" drill bit if side mounting to PL
- Deburring tool or file if side mounting to PL
- Tape and scissors if side mounting to PL (for drill template)
- Mounting hardware if *not* mounting to PL
- Flex tubing cutter
- Water-tight strain relief for dispense pigtail
- Flathead screwdriver and mallet to remove knock-out and install strain relief
- 120VAC Ground Fault Circuit Breaker (GFCB) for powering dispense pigtail
- Extra wire, wire strippers, and wire nuts could be helpful in some installations
- Any items that would be required for wiring and installation per local code

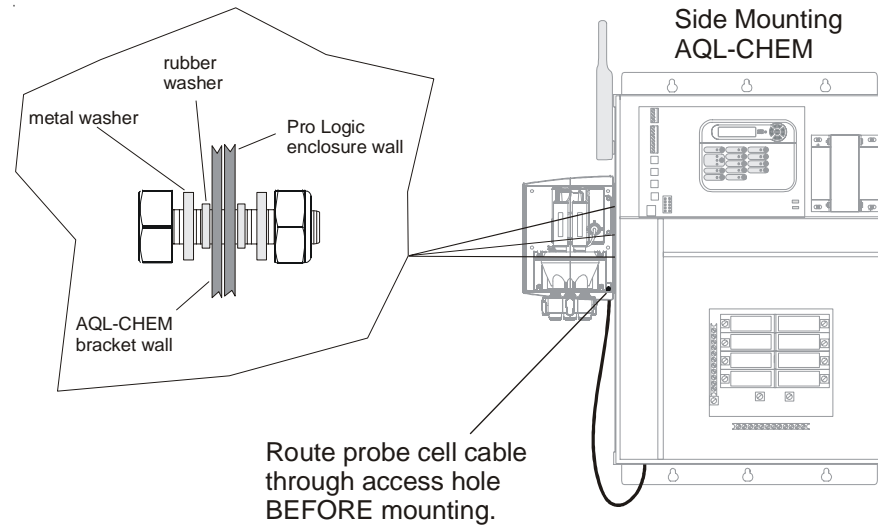
Before carrying out any part of the installation, be sure to shut off input power to the Pro Logic. Turn off the pool filter pump, water features and any other related equipment. Relieve pressure from the pool filtration system.

## Mounting the Probe Cell

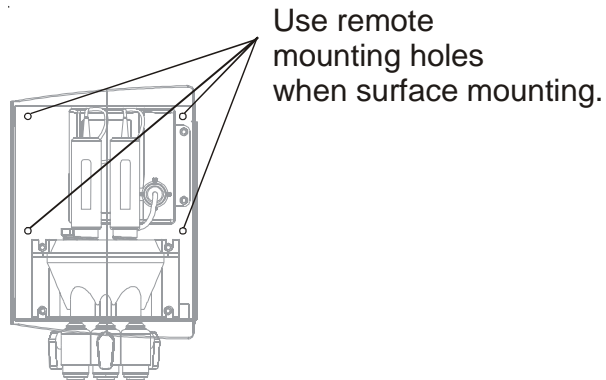
The Probe Cell can be mounted directly on the side of the Pro Logic or mounted up to 15' away (limited by length of Probe Cell cable). The key to successful Probe Cell installation is in the plumbing. A pressure differential is required to allow clean, untreated water to pass through the cell and across the probes. Consider this when looking for an ideal mounting location.

**Side mounting AQL-CHEM to Pro Logic:** Side mounting the AQL-CHEM will require drilling 3 mounting holes through the Pro Logic enclosure. A drill template is included with the AQL-CHEM to assist with the positioning of the holes. After drilling, be sure to remove any burrs and brush away any metal shavings. Route Probe Cell cable through access hole at the bottom of the mounting bracket BEFORE screwing the

bracket in place. For easiest installation, fasten the nylon lock nut loosely, then slip the bracket keyhole slots over the bolt head and tighten. After installation, coil excess cable in the AQL-CHEM and/or Pro Logic enclosures. Refer to the diagram below.

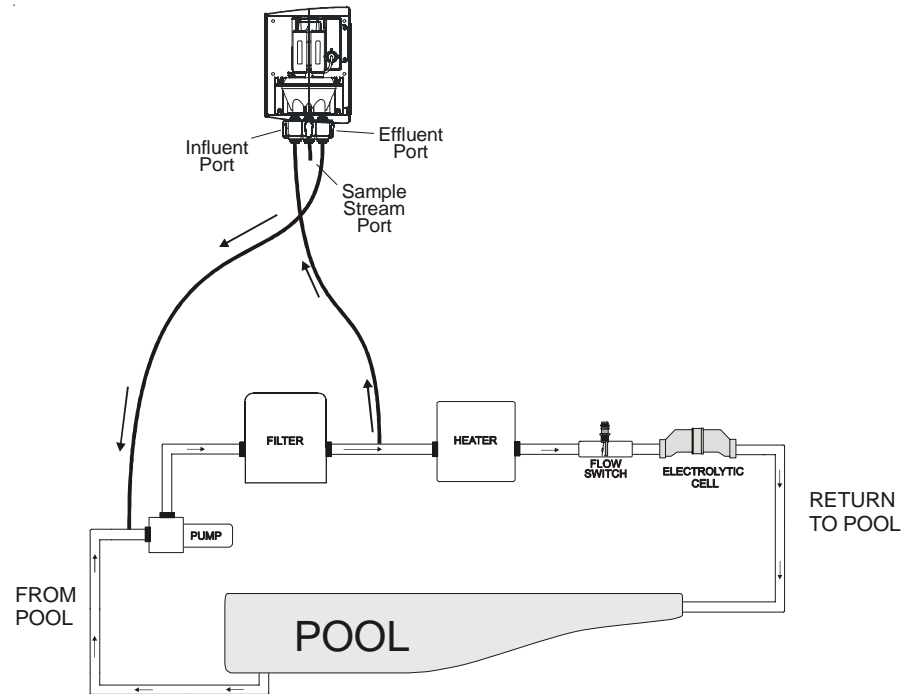


**Remote surface mounting the AQL-CEM:** The Probe Cell can be mounted up to 15' away from the Pro Logic (limited by length of cable). Use the four mounting holes on the back of the bracket when surfacing mounting. Common wood screws can be used for most applications.



## Plumbing the Probe Cell to the pool plumbing

The Probe Cell requires connection to the pool plumbing using the supplied flex tubing. Two ports on the Probe Cell, influent and effluent, are connected to the supply and return sides of the pool plumbing. Refer to diagram below as well as the following steps:



Drill and tap a 1/4" NPT hole using a 7/16" drill bit on the return side of the pool plumbing at a location just downstream of the filter, but upstream from the AQL-CL Electrolytic Cell. Use caution not to tap tapered threads too deeply. Using teflon plumber's tape, install a tubing connector into the hole. Run flex tubing from the tubing connector to the influent Probe Cell port. Push flex tubing in fully to seat.

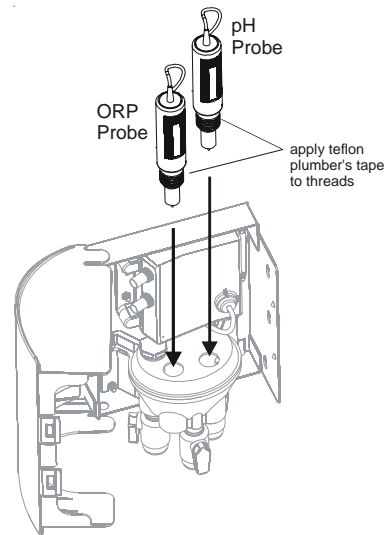
rill and tap another 1/4" NPT hole on the supply side of the pool plumbing. Use caution not to tap tapered threads too deeply. Using teflon plumber's tape, install the remaining tubing connector and run flex tubing to the effluent Probe Cell port. Push flex tubing in fully to seat.

Cut a 3" length of flex tubing and insert it into the sample stream port. This port can be used to draw water samples if needed.

## Installing ORP and pH probes to the Probe Cell

The ORP and pH probes are shipped "wet" in plastic storage caps. It's very important that the probes remain wet at all times. If the probes are allowed to dry out, they will fail and the AQL-CHEM will be ineffective. After installation, the Probe Cell will ensure that the probes are constantly exposed to pool water. During periods when the filter pump is off (even extended periods), there should be sufficient moisture remaining in the Probe Cell to ensure that the probes are protected.

Remove the ORP and pH probes from their plastic storage caps and save the caps for future use. To ensure that the probes continue to remain wet, fill the Probe Cell with pool water before installing the probes. Apply a length of plumber's tape to the probe threads. Hand-tighten the probes only. At startup, check for leaks. If probe leaks, do not tighten more—instead remove and re-apply new Teflon tape.

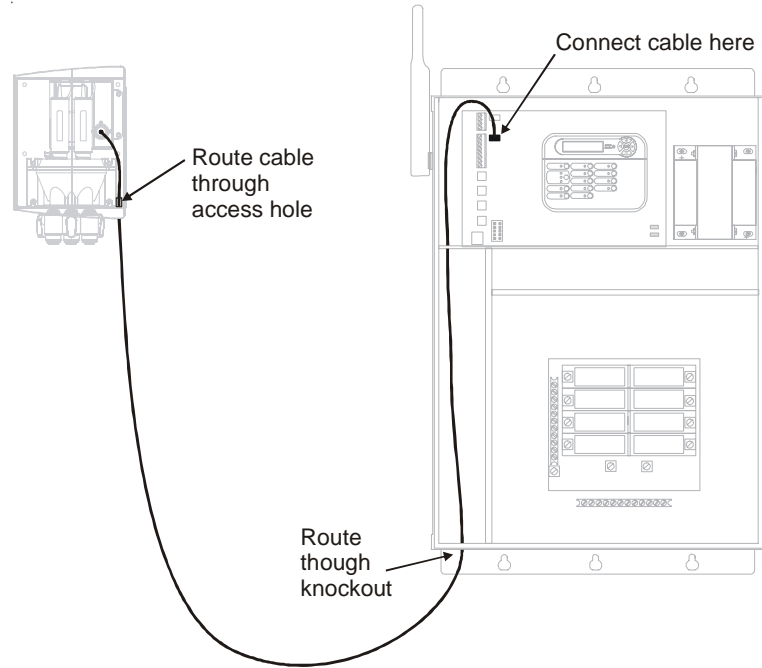


## Wiring the probes to the Probe Cell

Both probes must be wired to the communication box within the Probe Cell. The probe cables use typical BNC connectors that attach to the designated connectors on the communication box. Refer to the label on the communication box for the appropriate connections. Push the connectors in and turn clockwise until locked. After connecting, route the wires in a manner where they will not interfere with the door of the Probe Cell. Save BNC connector protective covers for future use.

## Wiring the Probe Cell to the Pro Logic

The Probe Cell is supplied with a 15' cable which connects to the Pro Logic control. Route the cable through an available knockout and connect to the Pro Logic as shown below. When side mounting the Probe Cell, route the cable through access hole at the bottom of the mounting bracket BEFORE screwing the bracket in place.



## Wiring the pH Dispense Pigtail

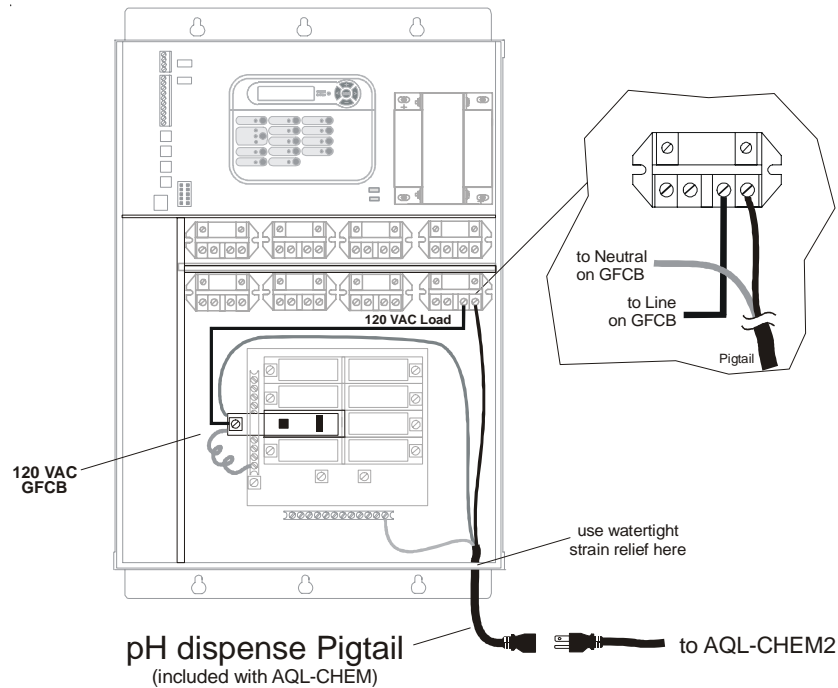
If pH dispensing is desired, the pH Dispense Pigtail must be installed. The Pigtail provides a plug-in receptacle for the AQL-CHEM2 solenoid valve's linecord or other line voltage pH related dispensing device (peristaltic pumps, solenoid valves, etc.) that use a typical 110 VAC male plug. Wire the Pigtail according to the diagram on page 7. Be sure that a Ground Fault type circuit breaker is used to provide power to the Pigtail. A watertight strain relief should be used to constrain the Pigtail where it enters the Pro Logic enclosure.

The particular relay used for the Pigtail will depend on the Pro Logic model and the auxiliary outputs that are already being used. An additional relay is included with the AQL-CHEM for PL-PS-4 and PL-P-4 models (pH dispense devices can not be controlled from the existing relays in these models). Refer to the following information when determining which relay to use:

*Pro Logic P-4 and PS-4 models:* The relay included with the AQL-CHEM kit must be installed and used to control the pH dispensing device on these models. Installation instructions for this relay can be found packaged with the relay. Once installed, wire

the Pigtail directly to this relay in a similar fashion to the diagram on page 7. The Pro Logic's Aux3 output will automatically be used to control this relay and the dispensing device.

*Pro Logic PS-8 and PS-16 models:* Any available Aux or the Lights relay can be used. Locate a relay that is not already in use and wire the Pigtail according to the diagram below. The relay's corresponding Aux output will be used to control the dispensing device.



## Configuring the Pro Logic

After the AQL-CHEM is mounted, plumbed and wired, the Pro Logic must be configured using the Chemistry Config Wizard found in the Configuration Menu. The AQL-CHEM's pH probe must also be calibrated using the pH Calibration Wizard found in the Maintenance Menu.

If a pH dispensing device is used, the relay that is used to control the device must be configured. Refer to page 10 for detailed information.

## Chemistry Config Wizard

If the AQL-CL chlorination kit will be used, be sure that it is enabled BEFORE entering the Chemistry Config Wizard. The Chemistry Config Wizard will prompt the user for information and automatically configure the Pro Logic to use the AQL-CHEM sensing



kit. The procedure to perform the Wizard is shown below. Detailed information about specific screens relating to the configuration can be found on the following pages. To enter the Chemistry Config Wizard:

1. Press "Menu" until Configuration Menu is displayed.
2. Hold both "<" and ">" for three seconds.
3. Press ">" repeatedly until "Chemistry Config. Wizard" is displayed.
4. Push "+" to start Wizard.
5. Advance through the Wizard using "<" and ">" buttons. Use "+" and "-" buttons to answer questions when prompted.
6. Continue until finished.

### **Sensing System**

Select Enable to configure the AQL-CHEM.

### **pH Reduction Control**

Select the desired option related to pH control.

<i>Disabled</i>	pH control is turned off. Select this mode if no pH dispenser will be connected to the Pro Logic.
<i>Auto Sensing</i>	Use this mode when an AQL-CHEM2 kit or other type of automatic pH reducer will be controlled by the Pro Logic. The Pro Logic will dispense pH reducer (CO <sub>2</sub> or acid) when necessary to prevent the pH level from rising.
<i>Forced On (15 min)</i>	pH reducer is added for 15 minutes regardless of pH level and then automatically goes to Auto Sensing mode. This mode is helpful when setting up and testing the AQL-CHEM2 or other automatic dispenser.

### **Chlorine Feed** (displayed only if the chlorinator is enabled)

Select the desired option related to chlorine generation.

<i>ORP Auto Sensing</i>	The Pro Logic refers to the ORP level in the pool and automatically adjusts chlorine output to maintain a desired level.
<i>Timed (%)</i>	The chlorine output is based on the manual setting only. ORP level is not used to control the chlorinator output.

### **Maintain pH Level**

The Wizard prompts you to enter the desired pH level (7.5 default). The Pro Logic will dispense CO<sub>2</sub> when necessary to maintain this level. The adjustable range is from 7 to 8 in .1 increments. Enter the desired pH level.

### **pH Alarms**

The Pro Logic will automatically set a high and low alarm for the pH level. The high alarm point is 8.1 and the low alarm point is 6.9. If the pH level meets or exceeds these points, a "Check System" message will display locally and on all remote controls.

### **pH Feed Timeout**

To protect the pool, the Pro Logic control will automatically shut down pH control and display a "Check System" message if the AQL-CHEM2 or other pH dispensing device runs continuously for more than the selected timeout value. This prevents a situation

where the Pro Logic is constantly feeding CO<sub>2</sub> because of a probe error or external problem with the pool and allows the pool owner to evaluate the pool chemistry before continuing with pH control. Use the "+" and "-" buttons to select one of the preset timeout values. If the Pro Logic exceeds this pH Feed Timeout, it can be reset in the Check System Default Menu display.

### **Maintain ORP Level**

The Wizard prompts you to enter the desired ORP level (650mV default). Note that the Pro Logic will attempt to maintain this level but typically the pool's ORP level will vary above this value during normal operation. The adjustable range is from 400mV to 900mV in 5mV increments.

### **ORP Alarms**

The Pro Logic will automatically set a high and low alarm for the ORP level. The high alarm point is 850mV and the low alarm point is 350mV. If the ORP level meets or exceeds these points, an alarm message will display locally and on all remote controls. Also, if the ORP level is too high, chlorine generation will shut down.

### **Chemistry Extend**

When the Chlorine Feed selection is set to ORP Auto Sensing and/or the pH Reduction Control selection is set to Auto Sensing, the Pro Logic will keep the pool filter pump on regardless of its timer settings until the sanitizer level and/or pH level are within their programmed parameters. The pump will continue to run and either chlorine and/or CO<sub>2</sub> will continue to dispense until the programmed levels are reached. When both sanitizer level and the pH level are within the desired levels, the pump will be allowed to go back to automatic control.

### **Sanitizer Feed Timeout**

When the Chlorine Feed selection is set to ORP Auto Sensing, the Pro Logic control will automatically shut down ORP control and display a "ORP Timeout" message if the timeout value is exceeded (1-24 hours). This prevents a situation where the Pro Logic is constantly generating chlorine because of a probe error or external problem with the pool and allows the pool owner to evaluate the pool chemistry before continuing with ORP control. The Timeout can be reset in the Check System Default Menu display.

### **pH Calibration Wizard**

After installation, the pH probe must be calibrated using the pH Calibration Wizard within the Maintenance Menu of the Pro Logic. Periodically, a pool water test should be compared to the pH level reported in the Diagnostic Menu of the Pro Logic. If there is a discrepancy between the two values, the pH Calibration Wizard should be redone.

Run the pool pump for a minimum of 20 minutes before starting the pH Calibration Wizard. The procedure to perform the Wizard is shown below. Detailed information about specific screens can also be found below.

1. Press "Menu" until Maintenance Menu is displayed.
2. Press ">" repeatedly until "pH Calibration Wizard" is displayed.
3. Push "+" to start Wizard.
4. Advance through the Wizard using "<" and ">" buttons. Use "+" and "-" buttons to answer questions when prompted.
5. Continue until finished.

### Enter Independent pH Test Result

Test the pH of the pool water with a dependable quality test kit after the pool pump has been running for a period of time. Goldline suggest that you take more than one test and average the two results before entering the value in the pH Calibration Wizard. After entering the pH value, press the "+" button to calibrate the pH probe. A "Check System" warning will display if the probe value and the entered value are different by  $\pm 1.0$  or greater. If this is the case, retest the pH (possibly with another test kit) and consider cleaning the pH probe per the instructions found in the AQL-CHEM manual.

### Configuring the pH Dispense Relay

The relay used to control the pH dispensing device needs to be configured within the Configuration Menu. Determine which relay is being used (the relay the Pigtail is wired to). Follow the configuration procedure found in the Pro Logic Installation and Operation manuals under Configuration Menus to set the function of this relay to "pH Dispense". An example of this (using Aux1) is shown below. Note that PL-P-4 and PL-PS-4 models will automatically use Aux 3.

Aux1 Config. + to view/change	+ Push to access Aux options <> Move to previous/next configuration menu
Aux1 Name Aux 1	+ Rotates between all available names <> Move to next menu item
Aux1 Function pH Dispense	+ Rotates between Manual On/Off (default), Countdown Timer, Low Speed-Filter Timeclock, Solar, Low speed-Spa Filter, Group & Super Chlorinate, and pH Dispense <> Move to next menu item

**Caution:** *Be certain to verify that the proper relay has been used and configured for pH.*

- Verify proper relay operation by using the pH Reduction CTRL set to "Forced on"
- Observe that the relay immediately turns on and applies power to the CO2 feed solenoid
- Once this is verified, set pH Reduction CTRL back to AUTO

As a last check for proper configuration, push the corresponding output button for the pH Dispensing device. The device SHOULD NOT TURN ON. If it does, go back through the configuration to determine the problem.

# Operation

Before operating the AQL-CHEM, test and adjust the pool water chemistry to the recommended levels in the Pro Logic Installation and Operation manuals. If using the AQL-CL chlorination kit, adjust salt to the recommended levels. This is an important step and is crucial to the successful operation of the AQL-CHEM.

During normal operation, the AQL-CHEM will sense ORP and pH requiring no user input. A display showing the current ORP and pH levels will periodically scroll in the Default Menu. Pushing the "<" or ">" buttons within the Default Menu will advance you to this display quickly. This information can also be found within the Diagnostic Menu.

If an AQL-CL chlorination kit or AQL-CHEM2 (or other pH control) is used, the desired ORP and pH levels can be changed by restarting the Chemistry Config. Wizard.

## Controlling pH with PRO LOGIC

Plaster pools and pools serviced by salt-chlorine generators typically cause a slow pH rise which must be managed. With the Sense and Dispense technology, CO<sub>2</sub> or acid is dispensed into the filter system's return water as needed until the pH probe reports proper pH level.

Goldline strongly recommends CO<sub>2</sub> injection instead of acid feed systems for pH control of residential pools. Both systems are effective at reducing pH, but CO<sub>2</sub> is much safer to handle and store. The Goldline AQL-CHEM2 CO<sub>2</sub> dispensing system is an economical and efficient method for effective pH control that eliminates the need to handle acid. When the CO<sub>2</sub> gas is injected into water, it dissolves and becomes carbonic acid, a weak acid that is very effective at lowering pH but becomes self-limiting if over-fed.

IF YOU CHOOSE AN ACID FEEDER FOR pH CONTROL, additional safety precautions are required to ensure that an equipment malfunction is detected. Great care must be taken when installing, maintaining and operating acid pump feed systems. Acid is dangerous to handle, and will harm people and equipment if not properly contained, transported, poured, stored, and dispensed.

**CAUTION:** Equipment failure can potentially cause too much acid to be dispensed into the water, causing an equipment and health hazard which would not be detectable without the use of independent pH measurement.

- Always use a 4:1 dilution in the acid feed system.
- To prevent violent boiling and splashing, ALWAYS ADD ACID TO WATER, never add water to acid to dilute it. Some use the rhyme "Remember, do as you oughta- add acid to water"
- Strictly follow the acid vendor's safety and handling protocols including hand, body and eye protection when transferring or handling acid.
- Choose a 5 gallon per day acid feed pump to keep flow rate low.
- Limit the available acid reservoir to 1 gallon per 15,000 gallons of water. This limits the available acid in the event that equipment malfunctions and empties the tank into the pool or spa.

- Only a properly installed and maintained system will control the pH and sanitizer levels of the water.
- If acid is not diluted properly or the feed pump is oversized, it will overshoot the pH correction.
- Periodically use an independent pH and Chlorine test kit to verify that pH is at a safe level, and that chlorine is at a safe level. If the probes are broken, depleted, dirty, fouled with oils, lotions, or other contaminants, they can report inaccurate result to the system causing incorrect water chemistry, which at worst, could harm people or equipment.
- Check the Pro Logic's display each day before entering the water. If there is any Check System alarm, following the troubleshooting guide in this manual to understand and rectify the condition. If the display is blank, or reporting a communications error, troubleshoot the equipment and rectify the failure before entering the water.
- Follow the installation checklist to verify proper operation upon installation and at the beginning of each pool season.

## Maintenance

### Water Chemistry

Always test water chemistry with a quality manual test kit. The AQL-CHEM provides instrument-grade accuracy which exceeds that of most liquid-standard water testing kits. Therefore, it may be preferable to calibrate pH using commercially available reference solutions. Calibrate pH periodically using the pH Calibration Wizard as described earlier in this manual. It's important to note that changes in pH, cyanuric acid concentration, total dissolved solids, and use of additional or alternative sanitizers will all affect the primary sanitizer residual level relative to ORP. Maintain total alkalinity on regular basis to ensure pH stability. To maintain a consistent sanitizer residual in parts per million (ppm), periodically adjust the ORP level.

### Probe Maintenance

The probes must be clean and free from oil, chemical deposits and contamination to function properly. After saturation in pool or spa water, the probes may need to be cleaned on a weekly or monthly basis depending on bather load and other pool specific characteristics. Slow response, increased need to calibrate pH, and inconsistent readings are indications that the probes are in need of cleaning.

To clean the ORP and pH probes, run the Clean Probe Wizard within the Maintenance Menu. This Wizard will walk the user through the probe cleaning process. Answer the questions when prompted, and follow the instructions for proper cleaning.

To clean the probes without running the Wizard, turn off input power to the Pro Logic. Disconnect the probe connectors from the communication box, unscrew the probe and carefully remove them from the Probe Cell. Clean the reference junction (the white ring at the bottom of the probe body) with a soft toothbrush and regular tooth paste.

A household liquid dishwashing detergent may also be used to remove any oil. Rinse with fresh water, replace teflon tape on threads and reinstall probes. If properly cleaned probes continue to provide unstable readings or require excessive calibration, the probes should be replaced.

### **Probe Storage**

Exposure to atmospheric conditions will cause the probe tips to dry out. Store the probes with the included plastic probe storage caps if removed from the Probe Cell for more than one hour. If the storage caps have been misplaced, store the probes individually in small glass or plastic containers with clean water covering the probe tips. Store probes in a location that will not be subjected to freezing temperatures.

### **Winterizing**

The AQL-CHEM probes must be protected from freezing conditions. If the pool is winterized, plan to remove and store the probes (as described above) as part of the normal pool winterizing process. The Probe Cell and related plumbing must be drained as well. BNC connectors should be capped with the original protective covers. A winterizing kit with probe caps, BNC covers, and other necessary winterizing accessories is available to replace any missing items. Contact your local Goldline dealer for more information.

**LIMITED WARRANTY** Goldline warrants its Aqua Rite, Aqua Rite Pro, Aqua Trol, Aqua Logic and Pro Logic products (products with Goldline part numbers starting with AQ-RITE-, AQ-RT-PRO, AQ-TROL-, AQ-LOGIC-, AQL-P-, AQL-PS-, AQL-CL-, PL-P-, PL-PS-, and HPC-2) to be free from defects in material or workmanship, under normal use and service:

For **three years** from the date of the initial system installation on private, residential swimming pools within the USA or Canada and **one year** from the date of initial system installation on commercial installations, installations outside of the USA or Canada and for any replacement parts or accessory products including Sense and Dispense™ products (products with Goldline part numbers starting with AQL-CHEM), provided they are installed in accordance with the Goldline installation instructions and specifications provided with the product. If written proof of the date of the initial system installation is not provided to Goldline, the manufacturing datecode on the Aqua Rite, Aqua Rite Pro, Aqua Trol, Aqua Logic and Pro Logic electronics unit will be the sole determinant of the date of the initial system installation.

For residential installations in USA or Canada: If a product is defective in workmanship or materials and is removed and returned freight prepaid within three (3) years after the date of the initial system installation, Goldline will, at its option, either repair or replace the defective product and return it freight prepaid.

For commercial installations, installations outside the USA and Canada, and accessory products and replacement parts: If a product is defective in workmanship or materials and is removed and returned freight prepaid within one (1) year after the date of the initial system installation, Goldline will, at its option, either repair or replace the defective product and return it freight prepaid.

Contact any Goldline dealer or contact Goldline at 61 Whitecap Drive, North Kingstown, RI 02852 for warranty service. The costs incurred in removal and/or reinstallation of the product are NOT covered under this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

**WARRANTY EXCLUSIONS:**

1. Material supplied or workmanship performed by others in process of installation.
2. Damage resulting from improper installation including installation on pools larger than the product rating.
3. Problems resulting from failure to operate the product(s) in accordance with the recommended instructions contained in product's owners manual(s).
4. Problems resulting from failure to maintain pool water chemistry in accordance with the recommendations in the owners manual(s).
5. Problems resulting from tampering, accident, abuse, negligence, unauthorized repairs or alterations, fire, flood, lightning, freezing, external water, degradation of natural stone used in or immediately adjacent to a pool or spa, war or acts of God.

**DISCLAIMER. THE EXPRESS LIMITED WARRANTY ABOVE CONSTITUTES THE ENTIRE WARRANTY OF GOLDLINE WITH RESPECT TO ITS POOL AUTOMATION AND CHLORINATION PRODUCTS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. IN NO EVENT SHALL GOLDLINE BE RESPONSIBLE FOR ANY CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, DAMAGE TO OR LOSS OF EQUIPMENT, LOST PROFITS OR REVENUE, COSTS OF RENTING REPLACEMENTS, AND OTHER ADDITIONAL EXPENSES, EVEN IF THE SELLER HAD BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OF LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

NO WHOLESALER, AGENT, DEALER, CONTRACTOR OR OTHER PERSON IS AUTHORIZED TO GIVE ANY WARRANTY ON BEHALF OF GOLDLINE.

THIS WARRANTY IS VOID IF THE PRODUCT HAS BEEN ALTERED IN ANY WAY AFTER LEAVING THE FACTORY.

## Questions?

Refer to [www.goldlinecontrols.com](http://www.goldlinecontrols.com) for latest manual revisions, additional information and helpful service.