

# Welcome to VivoAquatics

## Prominent DCM 51X and Edge 500 Series Chemical Controller Guide



-  This guide contains safety information. If not followed equipment will not work properly and may cause harm.
-  Always follow State and Local Health Codes when applicable.
-  Contact VivoAquatics Support if you are unsure how to operate your equipment.
-  Report any Maintenance failures to VivoAquatics Support as soon as possible.
-  Take care of all equipment with daily, weekly, monthly and annual service per manufacturer recommendations.

### Controller Chemical Ranges

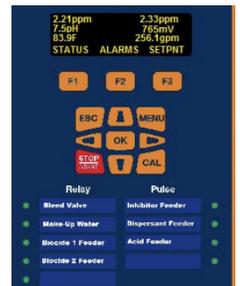
Chlorine: 0-10ppm

pH: 0-14 ppm

ORP: 0-1000mV

### Controller Function Keys

	Confirms and saves any changes.		Enables direct access to the controller's calibration menu.		(Right Arrow) Moves the cursor to the right.
	Back to HOME display or to previous menu.		Stop/Start all control outputs from any display.		(Down Arrow) Decreases a display number value or step down in menus.
	Enables direct access to all of the controller's setting menus.		(Up Arrow) Increases display number value or moves upward in the menus.		(Left Arrow) Moves the cursor to the left.



### Term Clarification:

Controller= Prominent DCM 51X and Edge 500.

Chemical Pump= Stenner Pump

English Version

## General Safety Guidelines

- In emergency situations always disconnect controller and chemical pumps immediately. Disconnect the power cable from power supply.
- Always follow State and Local regulations during install and usage.
- Controller and chemical pumps must be accessible at all times for both operating and service. Access must not be obstructed at any time.
- Controller should always be set with proper programming to allow backup safety settings.
- Controller and chemical pumps should be serviced by trained staff.
- Always use proper protection equipment when working on controller and chemical pumps. Beware of chemicals and liquid going through controller and chemical pumps if chemical levels are not maintained.
- Always know what chemicals are being controlled by controller and chemical pump.

## Controller Parts \*These may vary in color depending on version

### Front Panel Figure 1

- Controller function keys
- Status LED
- Communication Status LED
- Relay display



Figure 1 The Front Panel

Figure 1

### Probe Housing Figure 2 & Probes Figure 3

- PH
- Temperature
- Chlorine
- ORP
- Flow

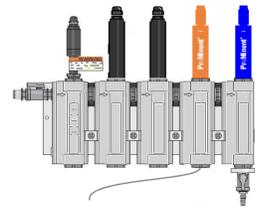


Figure 2



Figure 3

### Modem Figure 4

- Needed to connect to VivoPoint



Figure 4

### Inline Strainer Figure 5



Figure 5

### Isolation Valves Figure 6



Figure 6

## Preventative Maintenance & Daily Operation

- ✓ Check water chemistry—perform pH calibration if needed (see calibration section).
- ✓ Inspect probes—clean only if necessary. Test Flowswitch and allow float to drop bottom.
- ✓ Check chemical pumps and dosing equipment (Chemical pumps, tubing) and ensure equipment is working with no leaks.
- ✓ Inspect Inline Strainer before controller— clean if necessary.
- ✓ Inspect tubing and valves for corrosion or build up.
- ✓ Make sure setpoints and programming are correct at all times.



## Regular Probe Maintenance

\*pH & ORP probe should be cleaned monthly

1. Shut off flow to controller with isolation valves on both sides of controller.
2. Remove probe by undoing locking nut on probe container.  
\*Locking nuts are typically hand tight but a adjustable wrench or pliers might be required.
3. Start by applying dish soap to a soft bristle toothbrush and gently scrub probe tip.
4. Thoroughly rinse probe tip.
5. Replace probe into probe container and turn flow back on via isolation valves. \*Be sure not to cross thread nut
6. Allow probes to reacclimate to water for at least 1 hour. \*Be sure to unplug/switch off any chemical equipment while probes are acclimating.
7. After 1 hour test water & Calibrate pH if needed.

## Clean Strainer before controller

\*clean strainer every month or needed.

1. Shut off flow to strainer with isolation valve before strainer and isolation valve on controller.
2. Unscrew strainer from strainer holder.
3. Clean strainer with water and toothbrush if needed. .
4. Screw strainer back into holder.
5. Turn flow back on to controller via isolation valves.

\*If basket is bent, broken or warped it can affect flow.

## Part Replacement Schedule

Item	Replacement Interval	Maintenance
PPM Probe Gel	Replace weekly to monthly, depending on the water quality	When Needed
pH Probe	Replace every 2 years	Clean Monthly or when needed
ORP Probe	Replace every 2 years	Clean Monthly or when needed
Stenner Squeeze Tube	Replace every 6 months or when needed	When Needed
Acid Tubing	Replace every year or when needed	When Needed
Chlorine Tubing	Replace every 2 years or when needed	When Needed
Stenner Injectors	Replace every year or when needed	Clean every Month or when needed
Stenner Duckbills (If applicable)	Replace every 6 months	Replace every time Stenner tube is replaced
Strainer	Replace when needed	Clean & check for leaks every month
CCH Feeder		Clean every month or sooner if needed

## PPM Probe Cap and Gel Replacement

### Gel needs to be replaced when:

- 1) The manual reading is not matching the controller after multiple calibrations
- 2) After calibration of the probe, the reading automatically drops away from calibration.

### Gel goes bad when:

- 1) When the chlorine in the body of water goes above 10ppm
- 2) When there is too much water flow going through the controller
- 3) Gel is old (Typically 12 months)

When replacing gel does not always mean you need to replace the cap. As long as the cap is not leaking or the tip of the cap is intact and not discolored you can reuse the cap.

**Troubleshooting:** Probe acclimation could take up to 24 hours. If still not tracking after 24 verify that no air bubbles are in the cap and ensure that the cap is fully screwed on.

### Steps:

1. Isolate controller from flow
2. Remove PPM from probe housing
3. Remove cap from PPM probe
4. Clean out all old gel from probe tip and cap
5. Loosen transparent ring around cap to uncover the overflow hole
6. Prepare electrolyte gel by screwing on applicator tip
7. Turn electrolyte gel upside down to force gel into funnel cap
8. Insert funnel of electrolyte gel into cap and squeeze with constant pressure making sure no air bubbles get into gel.
9. Fill to inner step
10. Remove electrolyte gel and inspect to make sure no air is in cap
11. Insert probe into cap and screw all the way in. Gel will come out overflow hole
12. Replace transparent ring around cap to cover overflow hole
13. Wipe excess gel from cap
14. Install PPM probe back in probe housing
15. Turn flow back on to controller
16. Wait a few hours for probe to reacclimate to pool water

## Recommended Chemical Guidelines

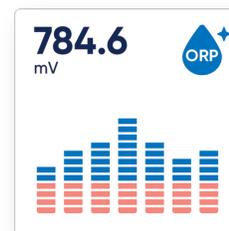
	MINIMUM	IDEAL	MAXIMUM
<b>Free Chlorine Pool</b>	3 ppm	3-4 ppm	5 ppm
<b>Free Chlorine Spa</b>	3 ppm	3-5 ppm	5 ppm
<b>Combined Chlorine</b>	0	0	0.2
<b>pH</b>	7.2 ppm	7.4-7.6 ppm	7.8 ppm
<b>Total Alkalinity</b>	60 ppm	80-100 ppm	120 ppm
<b>Calcium Hardness Pool</b>	150 ppm	200-400 ppm	850 ppm
<b>Calcium Hardness Spa</b>	100 ppm	150-200 ppm	750 ppm
<b>Total Dissolved Solids</b>	-	-	1500
<b>Cyanuric Acid</b>	0	15-20 ppm	30 ppm
<b>Salt (salt systems)</b>	3,000	5000	7000
<b>Phosphates</b>	-	<300	500
<b>LSI</b>	0.03	0.0	0.03

## Hand Dosing Guidelines

Hand dosing may be required if the automation equipment is not functioning as intended. Use the chart below to determine when it's time to hand dose and what to use. Refer to your specific chemical dosing instructions that are listed on the product to dose appropriately.

**Caution:** If hand dosing is needed close chemical controller probe isolation valves while chemicals are added to prevent damage to the probes. Reopen after chemicals have mixed appropriately usually takes 1 hour.

	When to dose	What to use
<b>Increase Chlorine</b>	<2 PPM	Granular Shock, Liquid Chlorine
<b>Decrease Chlorine</b>	>6PPM	Thiosulfate
<b>Increase pH</b>	<7.2	Soda Ash
<b>Decrease pH</b>	>7.8	Hydrochloric Acid



\*Guidance based on publicly listed industry standards and recommendations. VivoAquatics recommends you refer to local, regional, and federal guidelines to check your specific requirements and standards.

## Controller ALARMS

All alarms are latching by default which means once an alarm is triggered, it must be acknowledged or cleared even if it is no longer outside of alarm parameters. Some alarms may need to be cleared in order for the controller to continue to dose chemicals.

### Types of Alarms

- Out of Range Alarms** The controller number is outside the Minimum and Maximum set points.
- Dosing Alarm** One of the chemical pumps has reached their run time limit.

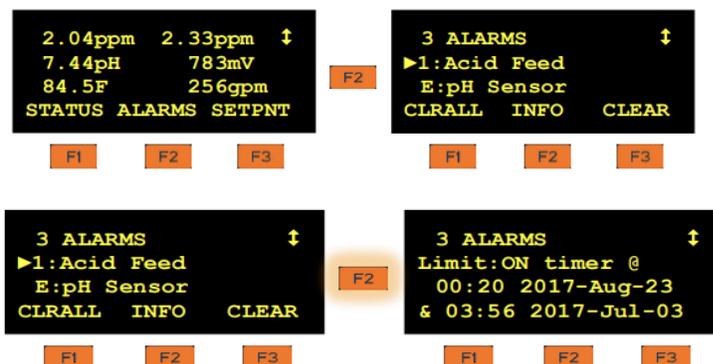
If an Alarm is active the **RED LED** will be flashing on the front of the controller.

Pressing **ALARMS (F2)** will show how many alarms there are on the top line, and specific alarms on the 2nd and 3rd lines.

Press and hold **INFO (F2)** and it will show detailed information on each alarm Selected.

Pressing **CLEAR (F3)** will clear the selected alarm.

**CLRALL(F1)** will clear all alarms, extinguish the flashing ALARM light and return to the HOME screen.



⇒ Helpful tips- Every pool is different

⇒ Never turn dosing alarms off

⇒ Suggestion- Spa & small bodies of water 30-60 mins; large bodies of water 60-120 mins. There may be times when you have higher dosing alarms.

⇒ Dosing alarms could be changed seasonally if needed.

## Alarm Parameters

Alarms are sent out when chemicals are outside of the following alarm parameters. \*these are customizable

	Below	Above
Free Chlorine Pool	2.5	5.5
Free Chlorine Spa	3	5
Flow	OFF	
pH	7.2	7.8



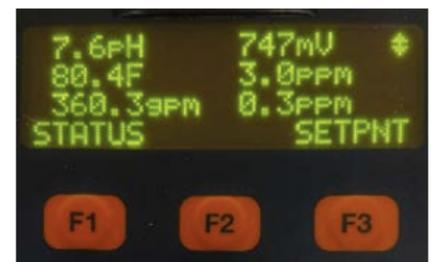
## Alarm Issue Resolution

- Stage 1** **When Initial alarm is Received**
- Step 1: Go to equipment room
  - Step 2: Manually test pH and Chlorine
  - Step 3: Inspect controller for type of alarm
  - Step 4: Use the troubleshooting guide below to identify the cause of the alarm and resolve the issue.
  - Step 5: Alarm believed to be resolved recheck equipment after 30 minutes to verify issue resolution
- Stage 2** **If Alarm is Not Resolved**
- Step 1: Ready your most recent manual test for chlorine and pH (must have taken test 15 minutes prior to this step)
  - Step 2: Call VivoPoint Support at (888) 702-8486 (See hours below)
  - Step 3: Work with VivoPoint Support for further troubleshooting steps to resolve the issue
- Stage 3** **Issue Escalated to Physical Response**
- Vivo Aquatics representative or qualified contractor is sent out to assist in resolving the issue.

## Setpoints

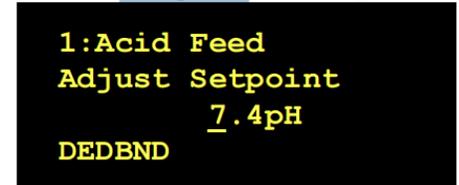
- ✓ Setpoints will be different for every body of water. \*It takes time to get setpoints correct up to a few weeks.
- ✓ Setpoints can be found by pushing F2 from the home screen or MENU button .
- ✓ Setpoints can vary and need to be changed based on season, probe lifespan, chemical readings.

Setpoint is the ideal point where the chemical controller stops pumping chemicals. Example: if you set PPM to 3.0 the chemical controller will pump until 3.0 and turn off.



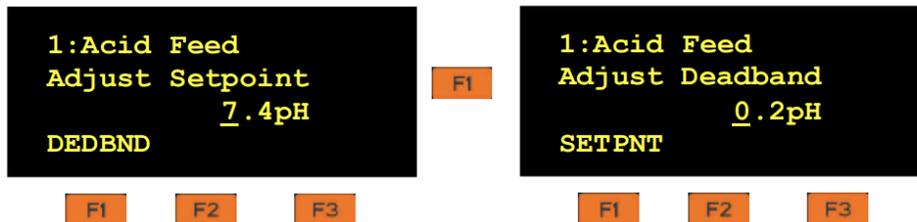
## Adjusting Setpoints

- 1) Press **SETPNT (F3)** on home screen OR press the MENU button and use the  up/down buttons to  
▶Adjust Setpoints Press OK 
- 2) Choose which relay you would like to set: ORP, pH, PPM
- 3) Use the arrow keys to change the setpoint, then press OK to save the new Setpoint.



## Deadband

**DEDBND (F1)**: Defines your On setpoint. To know where your on point is subtract the deadband from the setpoint. Deadbands are used to prevent the controller from turning on and off chemical pumps too rapidly. In Time Modulate feed mode the deadband is used to determine the percentage of time the pump will run when approaching setpoint.



\*these numbers are just examples

## Tips for Setpoints & Deadbands:

- **Different types of feed modes.**
  - **Time Cycling**- Where the controller can be told how long to turn on the chemical pump to add chemicals and how long to wait to reevaluate the chemical level before turning back on the chemical pump. Usually used for small bodies of water or bodies of water with long runs from controller to pool.
  - **Time Modulate**- Feeds chemicals based on distance between the On and off setpoint. Ex: Chlorine setpoint of 3 with an ON point of 2 (determined by deadband) at 2.5 the pump will feed for 50% of time entered in the period setting.
  - **ON/Off**-The controller turns on when needed and off when setpoint is reached.
- It is very normal to see the chemical pumps run and then pause for a few minutes before pumping again.

## Setpoint Recommendations & Troubleshooting

Problem	Setpoint Recommendation	Troubleshooting
Low Chlorine	Not to exceed 6.0ppm Turn up feeding time on Time Cycling Use none mode Turn up time on Time Modulate	Raise Cl setpoint Bring pH to setpoint Clear alarms Raise pH deadband number
High Chlorine (Overshooting Chlorine)	Not less than 1.0ppm Turn on Time cycling or lower on number Turn on Time Modulate or lower on number	Lower Cl Setpoint Bring pH to setpoint Lower Cl deadband number
Low pH (Overshooting pH)	Not to exceed 7.8ppm Turn on Time cycling or lower on number Turn on Time Modulate or lower on number	Raise pH setpoint Raise pH deadband numbers
Hi pH	Not Less than 7.2ppm Turn up feeding time on Time Cycling Use none mode Turn up time on Time Modulate	Lower pH setpoint Clear alarm Lower pH deadband number

## Probe Calibration

We only calibrate the **pH probe**, **Chlorine (ppm)** and the **Temperature Probe**.

If you need to calibrate ORP something is wrong with the probe- Lets troubleshoot that first before calibration.

Calibrate controller if manual test reading is greater than 0.1 difference.

### pH & Temperature Calibration Steps:

1. Perform a manual water test and record results.
2. Enter the calibration menu by pressing the **CAL**  button, then use the arrow buttons to scroll to the pH sensor and/or temperature sensor and press **OK**.
3. Enter the results from the manual test using arrow  buttons.  
Enter the result one decimal place at a time.
4. Press the **SAVE (F1)** key. The LED screen will indicate Sensor Calibrated.
5. Press **ESC** twice to return to the home screen.

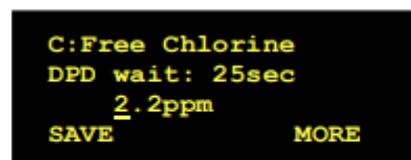
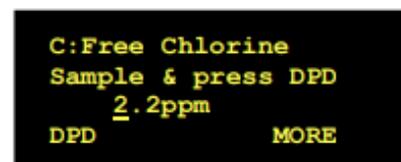
\*The **MORE (F3)** will allow you to factory reset the sensor. When you factory reset a sensor all previous calibrations are wiped from the sensor.



### PPM Calibration Steps:

1. Perform a manual test and record results.
2. Log into the controller by pressing the **CAL** button, then use the arrow buttons to scroll to the Chlorine sensor and press **OK**.
3. Press **DPD (F1)** this will start the calibration sequence. A timer is also started just for your reference.
4. Enter the results from the manual test using arrow buttons. Enter the result one decimal place at a time.
5. Press **SAVE (F1)** key. The LED screen will indicate Sensor Calibrated.
6. Press **ESC** twice to return to home screen.

\*The **MORE (F3)** will allow you to factory reset the sensor. When you factory reset a sensor all previous calibrations are wiped from the sensor.



### Helpful Calibration TIPS

- Calibration needs to be done when manual readings and controller readings do not match by 1 PPM for Chlorine and 0.2 for pH.
- If you have problems with Calibration or see calibration failure a full calibration with Buffer solution or a sensor factory reset may be needed.

## Feeder Prime Force ON/OFF

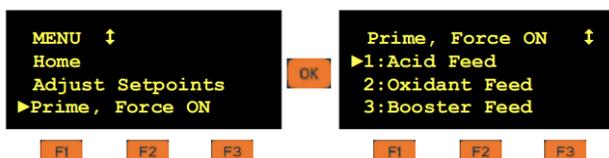
Forcing a relay or feeder ON to put chemicals into the pool for a set amount of time. We call this "priming" because that is the most common use of this function. The relays can also be forced STOP or prime cancel to be returned to normal menu.

To force Prime ON:

- 1) Press **MENU** button and down arrow to select Prime, Force ON and press **OK**.



- 2) Select the Relay/Feeder you would like to turn on by using the down arrow key and press **OK**.



- 3) The default time on the Prime function is 5 Minutes. To change the Prime time use the arrow keys to input desired time and press **START (F3)**.

- 4) Pressing **CANCEL (F3)** will cancel the prime and returns the relay to normal control.



5) Pressing **STOP (F1)** forces teh relay OFF until you UNSTOP the relay.



**Caution: Forcing a chemical pump or feeder for an extended period of time can lead to overfeeding**

### Start/Stop key

A quick way to force all chemical relay and feeders to OFF position is to press the  **STOP/START** button. We also call this "User Stop".

The status LED in the upper right corner will change to RED as will all the active control output LEDs.

To resume normal control on all outputs press  **STOP/START** again.

- Use the Start/Stop key anytime the pool is out of service.
- Anytime you do not want the chemical feeders or relays to put chemicals into the pool.
- Use user stop when working on the pool or chemical feed pumps to make sure they do not turn on while working.



## Troubleshooting

Controller Offline	Powercycle needed to controller Power cycle needed to modem
Chlorine not dosing/ Chlorine Low	Chlorine Barrel/Container is empty Chlorine injector is clogged Probe Failure Setpoints not set correctly Stenner needs a new tube Dosing limit to low Powercycle needed
Acid not dosing/ pH High	Acid Barrel is empty Probe Failure Setpoints not set Correctly Stenner tube needs replaced Dosing limit to low Powercycle needed
Probe Failure Controller not reading the correct numbers	Probe Unresponsive Probe needs cleaning Probes needs replaced Power Cycle needed Need to change cap & gel
Chlorine too high	Setpoints not set correctly Too much chlorine going through Stenner- turn down percentage Dosing limit too high Adding chemicals by hand
pH too low	Setpoints not set correctly Too much acid going through Stenner- turn down percentage Dosing limit too high Adding chemicals by hand.
No Flow	Adjust sample flow valves to allow more flow Backwash/clean filter if necessary Clean controller pre-filter
Screen Frozen, unable to make changes	Power cycle needed



## Warning from VivoAquatics

- Call Support if you are unsure how to operate your controller.
- Request training if you need more training.
- Consult Vivo Support before changing any relay, alarm or feeding parameters.
- Do not reset the controller without vivo support.
- Do not change controller programming without consulting Vivo Support.
- Never disable alarms or dosing times.
- Report any mechanical failures to Vivo Support.
- Close the body of water as soon as it is identified as unsafe.

### Special Circumstances

Pool leaks- Constantly adding freshwater to the pool will dilute water going through the controller and cause a false reading.

Adding chemicals manually- When adding chemicals to the pool manually, close controller valves for at least 1 hour after to not cause a false reading or destroy probes.

Winterization- If you close your pool for the winter, the controller needs to be winterized. Contact Vivo Support for directions.

\*Guidance based on publicly listed industry standards and recommendations. VivoAquatics recommends you refer to local, regional, and federal guidelines to check your specific requirements and standards.