VIVOAQUATICS
Connect & Protect℠

Certified for CDC Safety Standards

MAHC Certified

IPS M920 Chemical Controller Quick Start Guide

Overview:

The IPS M920 controller provides automated monitoring and dosing of pH and ORP levels in commercial swimming pools and spas. This VivoGuide contains safety, installation, calibration, troubleshooting, and chemical maintenance guidelines. Always follow State and Local Health Codes.

Controller Chemical Ranges:

Chlorine: 0-10ppm	**pH: 7.0-8.0**	**ORP: 400-900 mV**

Term Clarification:

Controller= IPS M920 Controller
Chemical Pump= Stenner Pump

Controller Function Keys

MODE	Switches between Auto, pH standby, ORP standbys, Temp mode, and OFF.	Dose Time	Timed or continuous feed modes.	High Alert / Low Alert	Alarm ranges for pH and ORP.
Up / Down	Adjust selections, set levels, dose times, etc	Delay Time	Time between feed cycles.	pH Cal	Calibrate pH
Set Level	Defines pH or ORP setpoint.	Over Timer	Maximum cycles or minutes allowed.	Reset	Factory Reset Controller

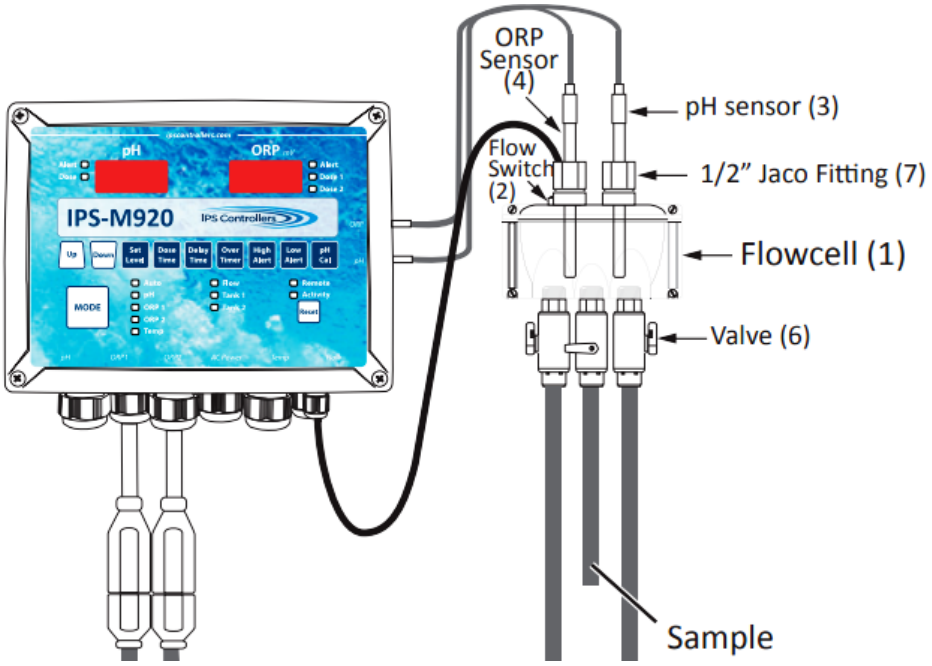
General Safety Guidelines

- In emergency situations always disconnect the controller and chemical pumps immediately. Disconnect the power cable from the 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.
- Controllers 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 controllers and chemical pumps if chemical levels are not maintained.
- Always know what chemicals are being controlled by a controller and chemical pump.

Controller Parts

ID	Part #	Description
1	FC100G	Flow Cell
2	FLSW	Flow Switch
3	SXPH	pH Sensor
4	SXORP	ORP Sensor (Standard platinum tip)
5*	SXORP-G	ORP Sensor (Gold tip for Salt Pools)
6	Valve	2-way Flow Cell Valve
7	Jaco Fitting 1/2"	1/2" Jaco fitting for sensors

*Not Shown

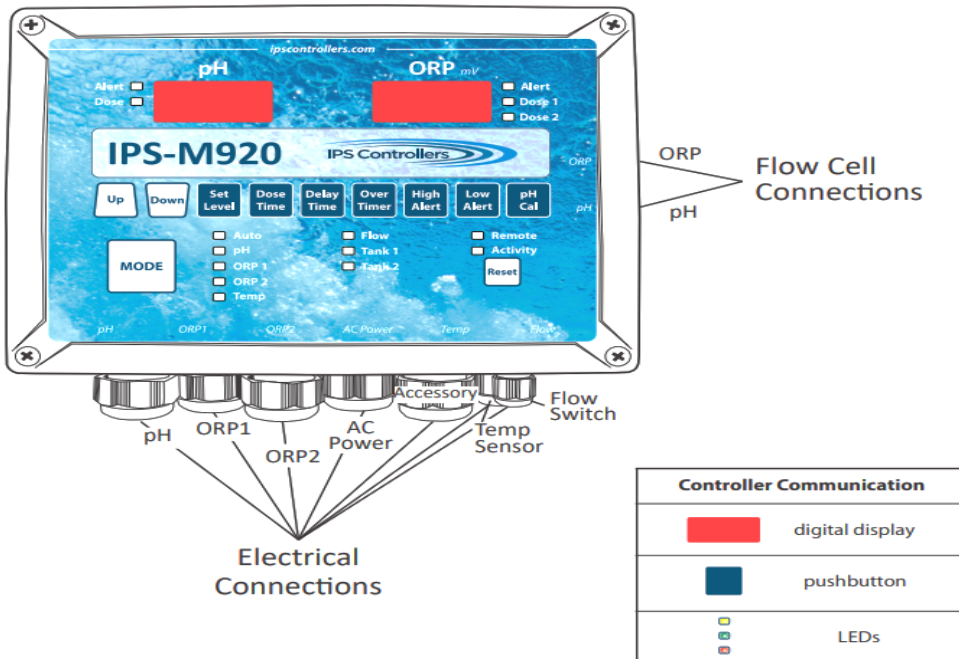


Part Replacement Schedule

Item	Replacement Interval	Maintenance
pH Sensor	Replace every two years or when needed	Clean every month
ORP Sensor	Replace every two years or when needed	Clean every month
Flow Switch	Replace when needed	Clean once every 6 months
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/When needed
Stenner Duckbills	Replace every 6 months	Replace every time Stenner tube is replaced
Strainer	Replace when needed	Clean & check for leaks

Preventative Maintenance & Daily Operation

- ✔ Check water chemistry-perform pH calibration if needed (see calibration section).
- ✔ Inspect probes-clean only if necessary. Test Flowswitch,
- ✔ 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.



Controller Communication	
	digital display
	pushbutton
	LEDs

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.

Recommended Chemical Guidelines

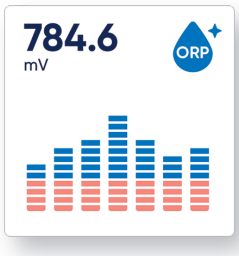
Parameter	Minimum	Ideal	Maximum
Free Chlorine – Pool	2 ppm	3-4 ppm	10 ppm
Free Chlorine – Spa	2 ppm	3–4 ppm	10 ppm
Combined Chlorine	0 ppm	0 ppm	0.5 ppm
pH	7.2	7.4–7.6	7.8
Total Alkalinity	60 ppm	80–100 ppm	180 ppm
Calcium Hardness – Pool	100 ppm	200–300 ppm	400 ppm
Calcium Hardness – Spa	150 ppm	200-300 ppm	400 ppm
Total Dissolved Solids	–	–	1500 ppm (From Starting Point)
Cyanuric Acid (CYA)	0 ppm	15–20 ppm	30 ppm
Salt (Salt Systems)	3000 ppm	5000 ppm	7000 ppm
Phosphates	–	<300	500
LSI	-0.3	0.00	0.5

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
Increase Chlorine	<2 PPM	Granular Shock, Liquid Chlorine
Decrease Chlorine	>6PPM	Thiosulfate
Increase pH	<7.2	Soda Ash
Decrease pH	>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.

How to Bring the Controller Online

Step 1: Install controller and Modem

1. Install controller, and modem on the wall close enough to a usable power supply.
2. Ensure the Ethernet Module is installed on the controller:
    a. If not installed in the controller already, IPS will need to be contacted to order the Ethernet Module.
    b. For directions on how to install the ethernet module:https://helpcenter.vivoaquatics.com/knowledge/installation/repair-wifi-to-ethernet-module-conversion-guide
3. Carefully unscrew, and pop off the face of the IPS Controller, exposing the ethernet port, and plug in the modem ethernet cable.
    a. Be careful not to stretch any wires or ribbons
4. Power on modem and controller.
5. Contact **Vivo Support** at **888-702-8486** and provide the Property, Body of Water name, and MAC address on the side of the controller to get it on the IPS platform, followed by the Vivopoint platform.

How to Program the Controller

Step 1: Go to pH Standby and set pH control

Press **Mode** until the green pH standby LED is on. In standby, displays show dashes; use ▲/▼ to change values.

Set the following parameters:

1. **Set Level:** Choose your target pH setpoint
2. **Dose Time:** Pick OFF, CON (continuous), or Timed (Set Feed Time).
    a. Default timed cycle is 10 s ON / 5 min OFF
    b. In continuous, dosing runs until pH is 0.2 past the setpoint
3. **Delay Time:** For **timed feed only**; default 5 min, range 1–99 min.
4. **Over Timer (safety limit):** default ON.
    a. **With Timed dosing**: Counts feed cycles; trip range 20–100 cycles. If tripped, pH display flashes and output stops; To reset: At controller, cycle from Mode, back to Auto.
    b. **With Continuous dosing:** Counts minutes; default 60 min; range 20–180 min. Changing Dose Time resets Over Timer to default. **Do not turn Off (voids NSF)**
5. **High Alert:** default 8.0 pH; range OFF, 7.5–8.4 (acid feed).
    a. Triggers after 10 min high; clears after 1 min normal; during alert, pH dosing is disabled and (by default) ORP1/ORP2 also disabled via DIP #2.
6. **Low Alert:** default 7.0 pH; range OFF, 6.8–7.4 (acid feed).
    a. Triggers after 10 min low; clears after 1 min normal; pH dosing disabled during alert.
7. **pH Cal:** Take a manual test of the pH, and calibrate the sensor if needed.

Step 2: Go to ORP1 Standby and set Sanitizer control

Press **Mode** until the green ORP1 standby LED is on. In standby, displays show dashes; use ▲/▼ to change values.

Set the following parameters:

1. **Set Level:** default 650 mV; range 400–900 mV (5 mV steps).
2. **Dose Time:** Pick OFF, CON (continuous), or Timed (Set Feed Time).
    a. In CON, dosing runs until 10 mV above setpoint.
3. **Delay Time:** default 5 min between timed cycles; range 1–99 min.
4. **Over Timer (safety limit):** default ON; resets only by power-cycling controller.
    a. **With Timed dosing**: Counts feed cycles; trip range 20–100 cycles. If tripped, pH display flashes and output stops; reset by cycling Mode back to Auto.
    b. **With Continuous dosing:** Counts minutes; default 60 min; range 20–180 min.
5. **High Alert:** default 900 mV; range 650–900 mV (no OFF);
    a. Triggers after 10 min high; clears after 1 min normal; ORP1 dosing disabled during alert.
6. **Low Alert:** default 100 mV; range OFF, 100–640 mV;
    a. Triggers after 10 min low; clears after 1 min normal; ORP1 dosing disabled during alert.

Step 3: (If used) Go to ORP2 Standby and set secondary sanitizer. (If not used, Skip to Step 4.)

1. **Set Level:** default 650 mV; range 400–900 mV (5 mV steps).
2. **Dose Time:** Pick OFF, CON (continuous), or Timed (Set Feed Time).
    a. In CON, dosing runs until 10 mV above setpoint.
3. **Delay Time:** default 5 min between timed cycles; range 1–99 min.
4. **Over Timer (safety limit):** default ON; resets only by power-cycling controller.
    a. **With Timed dosing**: Counts feed cycles; trip range 20–100 cycles. If tripped, pH display flashes and output stops; reset by cycling Mode back to Auto.
    b. **With Continuous dosing:** Counts minutes; default 60 min; range 20–180 min.
5. **Alerts:** ORP2 High/Low Alerts are controlled by ORP1 settings and **cannot** be set separately.

Step 4: Temperature display & calibration

1. Enter **Temp** mode to show water temp. (Reading holds while displayed)
2. Calibrate with ▲/▼ by **±10°**; press **pH Cal** to toggle **°F/°C**.

Step 5: Return to Auto and Test Flow Sensor Operation

1. Press **Mode** until the red Auto LED is on. In Auto, the controller monitors pH/ORP and function buttons are disabled. Displays show live sensor inputs.
2. Test that the flow registers as OFF when you turn off flow to the controller, and ensure chemical pumps turn off.
3. Open back up flow, and monitor the controller.

Trouble Shooting

Problem	Resolutions
pH Low	• Check pH level with test kit, calibrate if needed. • If sensor is not tracking, clean the sensor. • Check setpoint/feed rate and adjust as necessary
pH High	• Check pH level with test kit, calibrate if needed. • If sensor is not tracking, clean the sensor. • Check setpoint/feed rate and adjust as necessary. • Check the chemical feeder and make sure its full. • Check chemical feeder squeeze tube, replace if needed. • Switch to continuous feed if you cannot reach a setpoint.
ORP High	• Check CL, pH, and ALK to make sure they are within range, make adjustments if needed. • If sensor is not tracking, clean the sensor. • Check setpoint/feed rate and adjust as necessary. • Switch to a Timed Feed to limit feed.
ORP Low	• Check CL, pH, and ALK to make sure they are within range, make adjustments if needed. • If sensor is not tracking, clean the sensor. • Check the chemical feeder and make sure it's full. • Check setpoint/feed rate and adjust as necessary. • Check chemical feeder squeeze tube, replace if needed. • Switch to continuous feed if you cannot reach a setpoint.
Display and LEDS Off	• No power supply: Check circuit breaker and/or controller fuse protecting the transformer.
Flow LED Off	• Verify that all appropriate valves are open. • Verify that there is sufficient pressure in the line. Close the right side valve slightly if necessary. • Verify that the flow switch is securely connected to the controller terminals.

Need Help?

Contact **Vivo Support** at **888-702-8486** or email **support@vivopoint.com**