



Z-ION Installation and Retrofit Instructions

Ventura Deluxe and MPC-5000 versions



Patent Pending

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Rev 06/13



Making Fresh Water World Wide





Thank you for choosing Spectra's Z-Ion system! This revolutionary adaptation of an ancient technology effectively and safely protects the membrane and filters on your Spectra watermaker.

The Z-Ion system introduces a stream of metallic ions that kill the organisms in your watermaker and create an environment that prohibits them from growing and going anaerobic. The result is that your system will be kept ready to operate without any additional flushing, external power sources, pickling chemicals, or complex procedures. The whole operation is completely automatic, controlled by the Z-ION circuit!

When properly installed and maintained it will protect your watermaker for up to 3 months*, without requiring additional flushes or external power being present.

Please check the contents of this kit to ensure it is complete. Report any missing items to Customer Service immediately. Any shortages must be reported within 30 days of receiving the equipment.

Included in this kit:

- Z-Ion Generator and Control Module
- Flow Switch
- Carbon Block Filter
- Installation Kit

* Storage times may vary depending on conditions.

Plumbing Installation

Installation should always be carried out by a qualified technician to avoid problems and ensure warranty coverage.

Turn off the domestic fresh water pump and bleed any remaining pressure in the pipes.

Locate Ventura feed pump module

Disconnect the inlet hose.

Remove the inlet hose barb fitting.

Install the flow switch assembly.

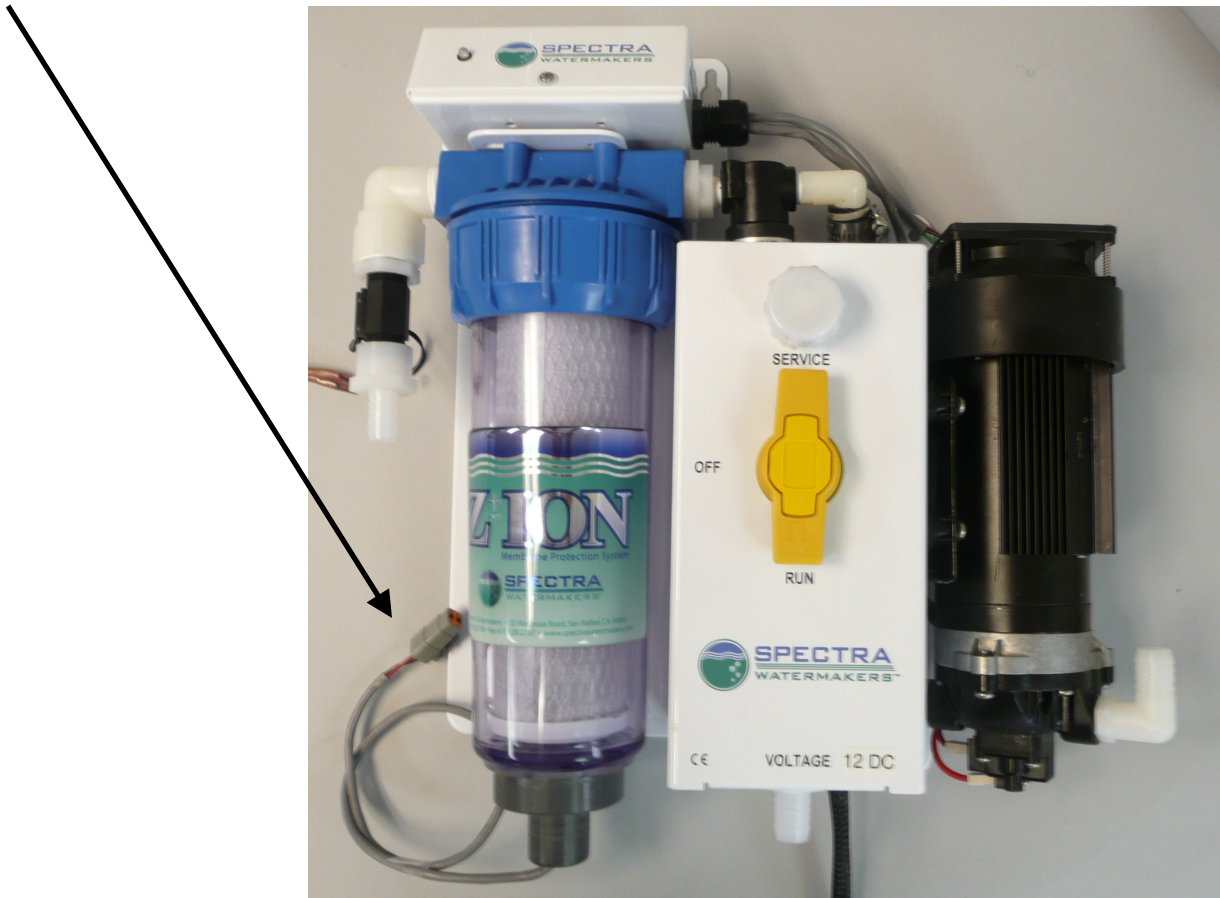
Make sure that the flow switch arrow is pointing towards the inlet!



Remove the carbon filter bowl and replace with the Z-ION generator bowl

Mount the control box on the bulkhead adjacent to the feed pump module. (shown just above the filter bowl).

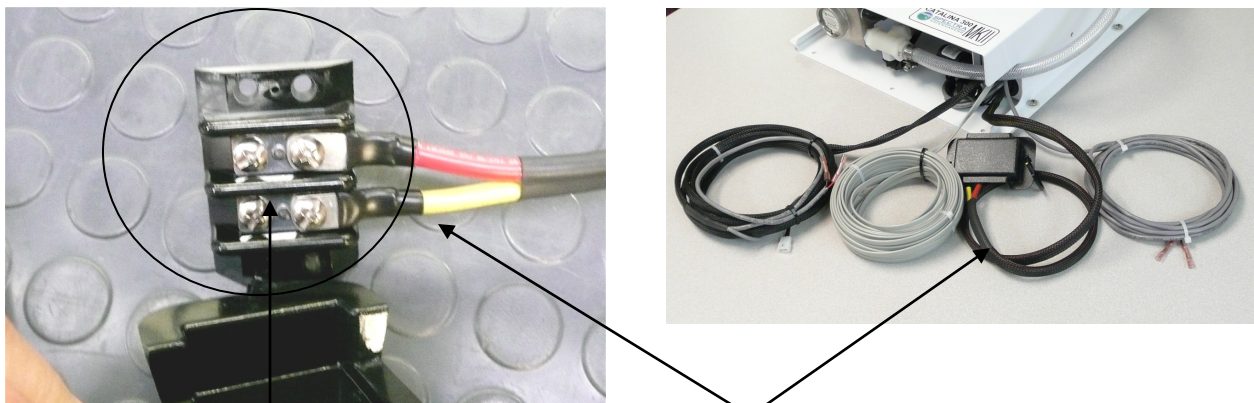
Plug the Z-ION connector from the generator into the control box.



Wiring Installation

Turn the main DC breaker off or remove the main power fuse to the water-maker.

Locate the DC Bus Bar, as shown below, which is the main power feed for the watermaker.



Incoming DC Bus Bar

Connect the DC power leads from the Z-Ion Control Box to the Incoming DC Bus Bar.

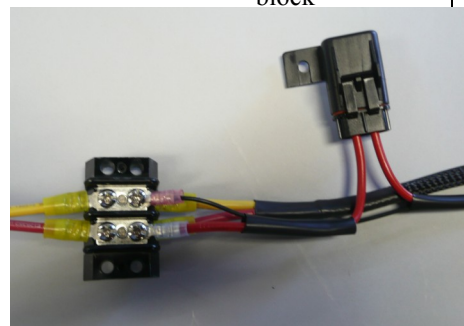
Pay attention to polarity!

Connect Red (fuse) to DC +

Yellow (or black) to DC -

Replace protective cover!

Z-ION Fuse block

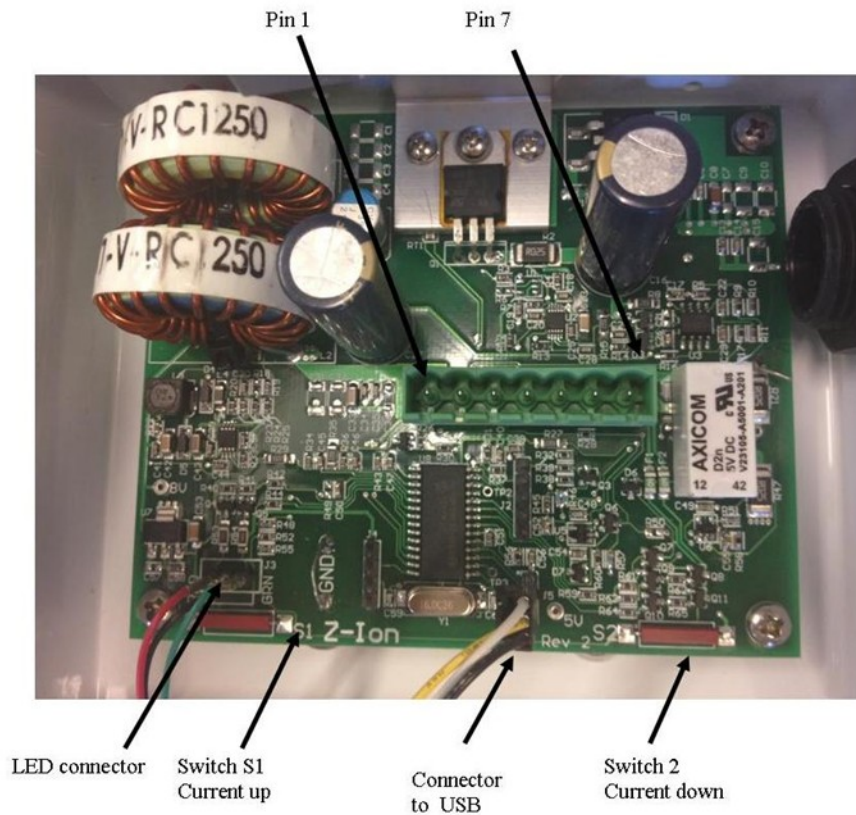


Testing the system

Normally no adjustment is necessary as the unit has been set up at the factory for your water-maker, however it is advisable to make sure it is working properly. You will need Spectra test kit #EL-ZION-TESTKIT. Once the installation is complete and the unit is powered up activate the FW flush by pushing the auto store button on the MPC controller once. If you have a Ventura Deluxe initiate a manual flush cycle. The LED on the Z-ION controller should start flashing as the unit cycles. Close to the end of the flush cycle, take a sample of the brine discharge. If the discharge thru hull isn't accessible you will need to use the brine discharge service hose to gain access to the system. Once you have obtained a sample, first check it with a salinity monitor to make sure the salinity is below 1000 PPM. Next, use the copper test kit to make sure that there is at least 1 PPM of copper in the flush water. This will also insure that there is adequate silver in the mix to kill the bacteria.

If the flush water is above 1000 PPM or does not have adequate copper content then please contact our technical support for instructions on how to adjust the system.

Z-ION Board Layout



Z-ion Specifications

The Z-ION controller has been specifically designed to batch process (produce) metallic ions for system disinfection. This process has been around for many years, however most systems produce ions on a continuous slow basis rather than a short intermittent process. It was found that the most stable way to produce ions in a batch process is to maintain a constant current to the electrodes and vary the voltage. By being able to boost the voltage the amount of electrode surface area can be smaller to produce the needed ions in a brief period of time.

Features

10-48 VDC inlet voltage

10-38V output @1.5A Current controlled

Polarity reverses every 10-15 seconds (adjustable)

Timed auto shutoff (adjustable)

Current output is field adjustable.

Operation

The unit can have power on at all times. Upon power up the LED will flash red/green and then goes green. Upon the trigger being actuated by going high the operation cycle begins. The unit will produce the set point current by adjusting the voltage applied on the electrodes. The LED will flash green/ amber as the polarity cycles. The cycle will continue until either the trigger voltage is removed or the adjustable timer, times out.

If the voltage is out of range, below 10V or above 56V, the LED will flash red every two seconds and the unit will shut down.