

Ozone Systems

Installation & Operation Manual

ActivTapp Commercial System ACS-3



ClearWater Tech, LLC.
Integrated Ozone Systems

850-E Capitolio Way, San Luis Obispo, CA 93401 • 805-549-9724 • Fax: 805-549-0306
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03

INTRODUCTION

This Installation and Operation Manual is written to assist in the installation, operation and maintenance of systems manufactured by ClearWater Tech, LLC. This equipment has been designed using the most modern materials and technology available.

Please read this manual carefully and in its entirety before proceeding with any installation, operation, or maintenance procedure associated with this equipment. Failure to follow these instructions could result in personal injury, damage to the equipment, or reduced product performance.

In an ongoing effort to improve reliability and operating efficiency, ClearWater Tech may find it necessary to make changes to its products. Therefore, the information contained in this manual may not conform in every respect to earlier versions of ClearWater Tech systems found in the field. If you have any questions, please contact your ClearWater Tech dealer or the ClearWater Tech service department.

TABLE OF CONTENTS

Theory of Operation	3
Instructions	4
Installation Procedures	5
<i>Figure 1 – Complete Finished Installation ACS-3</i>	5
<i>Figure 2 – Mounting Location</i>	6
<i>Figure 3 – ACS-3 Inlet and Outlet</i>	8
<i>Figure 4 – Water Connections</i>	9
<i>Figure 5 – Status Display Retrofit</i>	10
<i>Figure 6 – Status Display New Construction</i>	11
<i>Figure 7 – Display Plate Connection</i>	12
<i>Figure 8 – Manifold Valve Settings - Flush</i>	13
<i>Figure 9 – Manifold Valve Settings - Normal</i>	14
Operating Instructions	15
<i>Figure 10 – ACS-3 Status Display</i>	15
<i>Figure 11 – Summary of System Status LEDs</i>	16
Trouble Shooting	17
Servicing	18
Appendix A – Specifications	19
Appendix B – Warranty Information	25

THEORY OF OPERATION

This commercial ozone system is an environmentally friendly device allowing you to provide water with an infused potent oxidizer to any faucet or water consuming product you use. Using only a small amount of electricity, the ACS-3 takes oxygen from the air and converts it into ozone (O_3), a very powerful natural oxidizer. Once the ozone is injected into the cold water line, it gives the ordinary water the ability to deliver an oxidizer to any surface it comes in contact with.

With the optional ORP monitor, the oxidation potential of the water is measured and displayed on the status display for the end user. This provides proof that an oxidizer has been injected into the water.

A safe natural oxidizer, such as ozone, can provide effective disinfection of fruits, vegetables, and any other surface the oxidizer comes in contact with. Levels of disinfection will be dependent on the level of the oxidizer and the amount of time that level of oxidizer is applied. For a particular application please contact ClearWater Tech to help design your system and develop your procedure to achieve the results you are looking for.

Thank you for taking care of your customers as well as our planet by using the ACS-3 within your facility.

INSTRUCTIONS

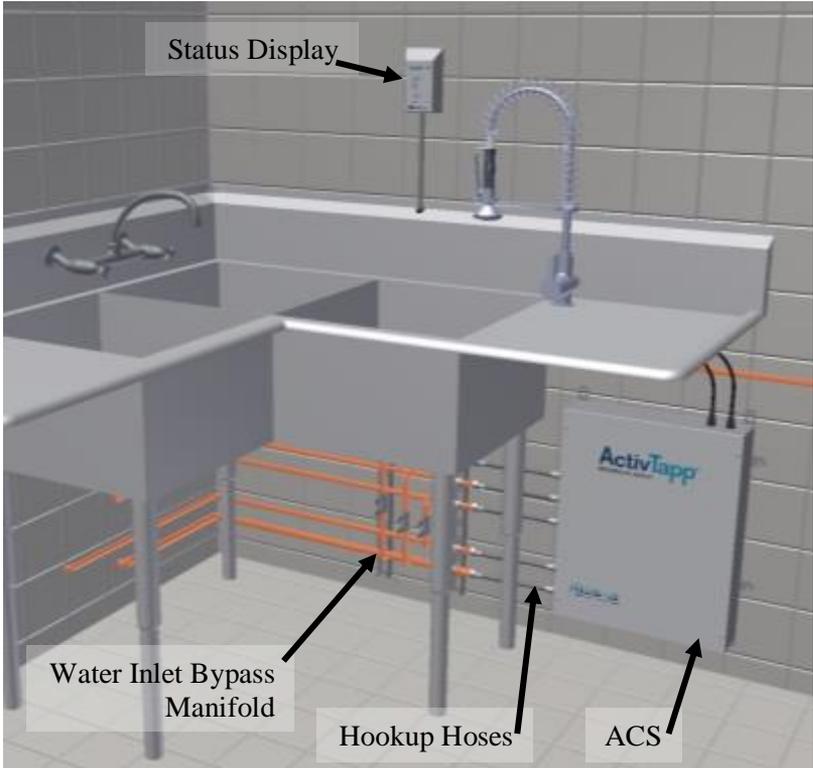
- 1. Save These Instructions.**
- 2. Before using, please read the owner's manual carefully.**
- 3. Disconnect power before servicing.**
- 4. Make sure the ACS-3 is mounted properly. See installation instructions. Do not operate the unit with the cover removed**
- 5. Do not use an extension cord.**
- 6. Water treated by the ACS-3 is intended for surface disinfection and is not intended for drinking or ingesting.**
- 7. The ACS-3 is intended for use with the cold water line only. Hot water will not damage the ACS-3 but it will greatly reduce its effectiveness.**
- 8. The ACS-3 should be cleaned with a damp cloth. Avoid using harsh chemicals, abrasives, or cleaners.**
- 9. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**
- 10. Children should be supervised to ensure that they do not play with the appliance.**
- 11. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.**

INSTALLATION PROCEDURES

Unpacking

Make sure all of the components are in the box before beginning installation of the ACS-3. In addition to this manual, you should have the ACS-3 unit and mounting hardware. Optional items you might have include: water hookup hoses, water inlet bypass manifold, and status display.

Figure 1 – Complete Finished Installation ACS-3

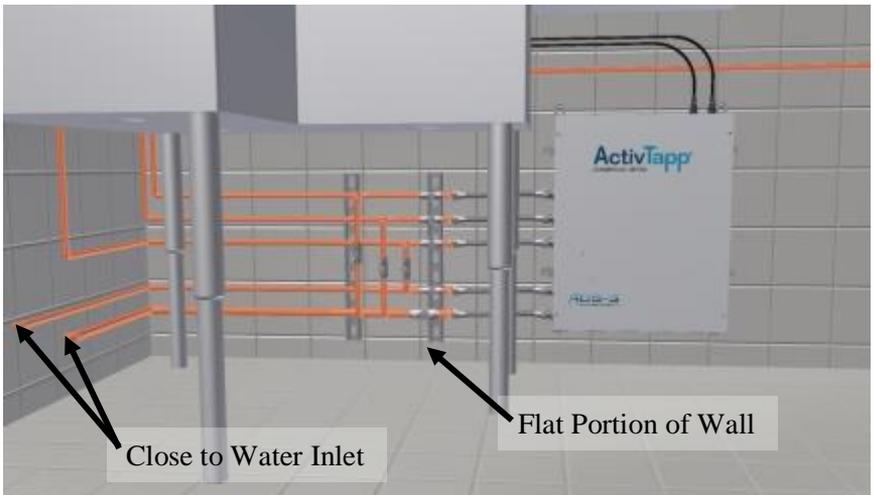


Locate a Mounting Location

Before beginning the installation, locate a suitable location for the ACS-3 and the water inlet bypass manifold (optional). Find a flat portion of a wall, preferably close to the location where ozonated water is needed. Please consider the following when selecting a mounting location:

- Never install the ACS-3 in an area where water may freeze. Freezing water will damage the internal components.
- The ACS-3 is to be installed vertically as shown in figure 2 below. Mounting horizontally, or at an angle may make the leak detection circuitry ineffective.
- The ACS-3 is to be close enough to a power outlet so an extension cord is not necessary.
- Make sure mounting of the ACS-3 and the water inlet bypass manifold (optional) DO NOT obstruct any electrical outlets.
- The ACS-3 and water inlet bypass manifold (optional) is to be close enough to the unit using the ozonated water to be able to make the proper water hose connections.

Figure 2 – Mounting Location



Mounting the ACS-3

After locating a flat portion of a wall near the point of use and where an electrical outlet is available for use, you can proceed to mount the ACS-3. Use the tips below to help with the installation.

- **WARNING** – Water mains run behind walls near water fixtures such as sinks and drains. Be sure to not use long screws when mounting.
- Use a stud finder to locate a suitable anchor point for the ACS-3.
- If a stud cannot be located, using 4 drywall anchors with a 20 lb weight load capacity can be used. Multiple anchor points are available to allow for varying mounting scenarios.
- Use a level to make sure the ACS-3 is vertical before securing to the wall.

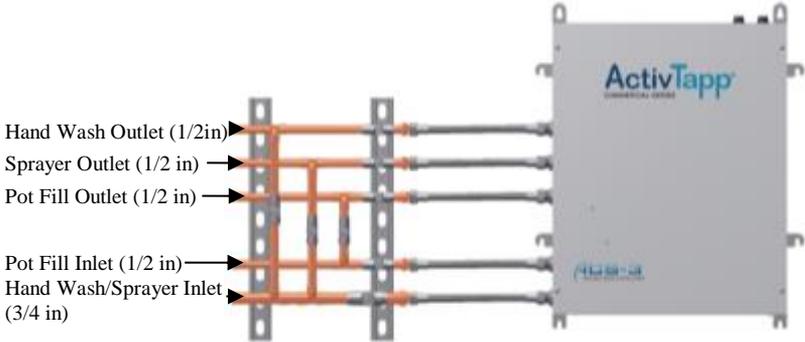
Mounting the Inlet Bypass Manifold (Optional)

After locating a flat portion of a wall near the point of use and where an electrical outlet is available for use, you can proceed to mount the inlet bypass manifold. Use the tips below to help with the installation.

- **WARNING** – Water mains run behind walls near water fixtures such as sinks and drains. Be sure to not use long screws when mounting.
- Before permanently mounting the water inlet bypass manifold, locate the incoming water supply as well as the location of the faucets. Pick a position that is conveniently located near the water inlet and faucets as to minimize necessary plumbing.
- The water inlet bypass manifold is to be mounted using uni-strut hardware. Use the provided uni-strut bars and clamps to securely mount the plumbing manifold in a horizontal position.
- Use a stud finder to locate a suitable anchor point for the water inlet bypass manifold. If a stud cannot be located, using 4 drywall anchors with a 30 lb weight load capacity can be used.
- Use a level to make sure the water inlet bypass manifold is mounted horizontally.

- Once the bypass manifold is installed, plumb in inlet water supply and the run connections over to the faucets. Consult the figure below to connect the appropriate faucet to each outlet of the ACS-3.

Figure 3 – ACS-3 Inlet and Outlet

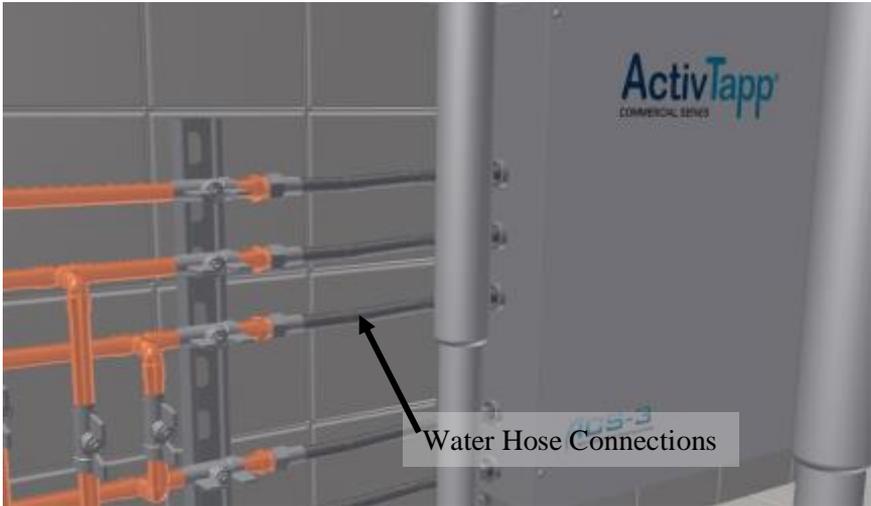


Connecting the Inlet Bypass Manifold to the ACS-3

After securely mounting both the water inlet bypass manifold and the ACS-3, you can now connect the water inlets and outlets.

- Install all flexible tubing (provided with the inlet bypass manifold) connections from the inlet bypass manifold to the ACS-3 in a parallel fashion as show in figure 4 below.
- Note: If the distance between the manifold and the ACS-3 is minimal, route the flexible tubing so the tubing does not kink or pinch.

Figure 4 – Water Connections



Mounting the ACS-3 Status Display – Wall Mount External

After securely mounting both the water inlet bypass manifold and the ACS-3, you can now determine the mounting location of the ACS-3 status display.

- Before permanently mounting, ensure the data/power cable can reach the ACS-3 without strain. The provided cable length is 15ft. Excess cable must be secured out of the way of potential damage.
- Noting the given cable distance, locate a flat section of wall space above the main sink basin, wide enough to mount the display without interference.
- Temporarily holding the display unit in place, use the cable protection tube attached at the bottom of display box as a placement guide. This will provide you with the location of the drill point for the stainless steel sink backsplash. A 13/16" hole is required to allow the tube and grommet seal to fit comfortably.

- When noting the height of the display before installation, allow for a minimum of 1 inch to pass through the hole drilled in the previous step. This will make sure the unprotected section of the cable will be protected from water and other potential damage.
- Once the location and height has been determined, and the hole for the cable protection tube has been aligned and drilled, slide the provided grommet over the connector at the end of the data/power cable.

Mount the provided z-bar plate to the wall using screws. The z-bar on the back of the Status Display will mate with the z-bar on the wall securing the Status Display.

Figure 5 – Status Display Wall Mount External



Mounting the ACS-3 Status Display – Wall Mount Internal

After securely mounting both the water inlet bypass manifold and the ACS-3, you can now install the ACS-3 status display.

- Fish the display wire from the main unit through the provided conduit and pull it into the provided double gang box in the wall behind the prep sink.
- Ensure the data/power cable can reach the ACS-3 without strain. The provided cable length is 30ft.
- Extra wire can either be cut off from the end without the connector, or bundled up and stashed out of the way.
- Strip back the wire and connect the wire to the display as shown below.

Figure 6 – Status Display
Wall Mount Internal



Figure 7 – Display Plate Connection



- Pin 1 – White
- Pin 2 – Grey
- Pin 3 – Black
- Pin 4 – Brown
- Pin 5 – Orange
- Pin 6 – Green
- Pin 7 – Purple

- Carefully tuck the wires into the electrical box and attach the plate onto the front of the electrical box.

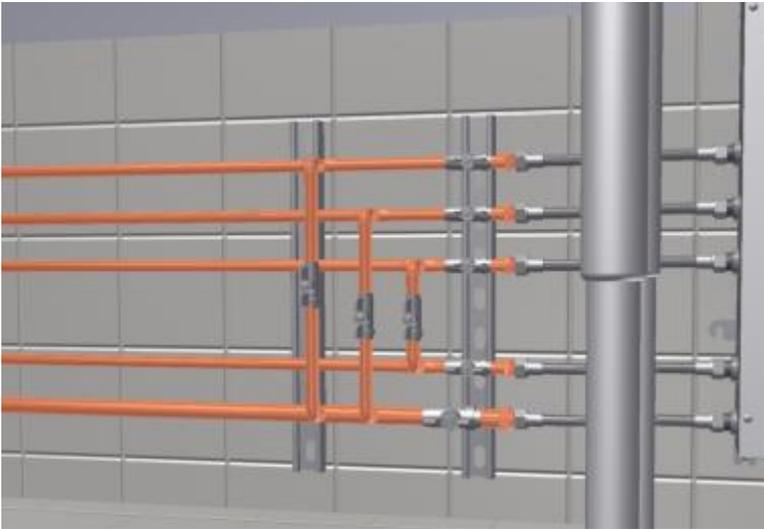
- Extra sealant around the display plate might be necessary to insure a water tight seal.
- Connect the end of the data/power cable to the ACS-3.

Final Connections

With the ACS-3 generator and accessories installed, it is now time to flush water, power the system and verify correct operation.

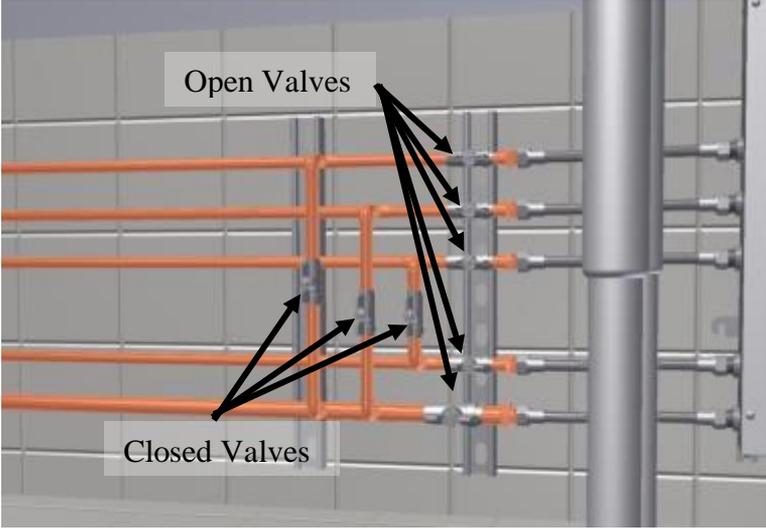
- Open up the bypass valves and run water through all of the faucets to clear the inlet line of debris that can cause the ACS-3 to malfunction.

Figure 8 – Manifold Valve Settings - Flush



- Plug in the ACS-3 unit into a GFCI protected outlet.
- Close off the bypass valves in the bypass manifold and open the valves to the ACS-3.

Figure 9 – Manifold Valve Settings - Normal

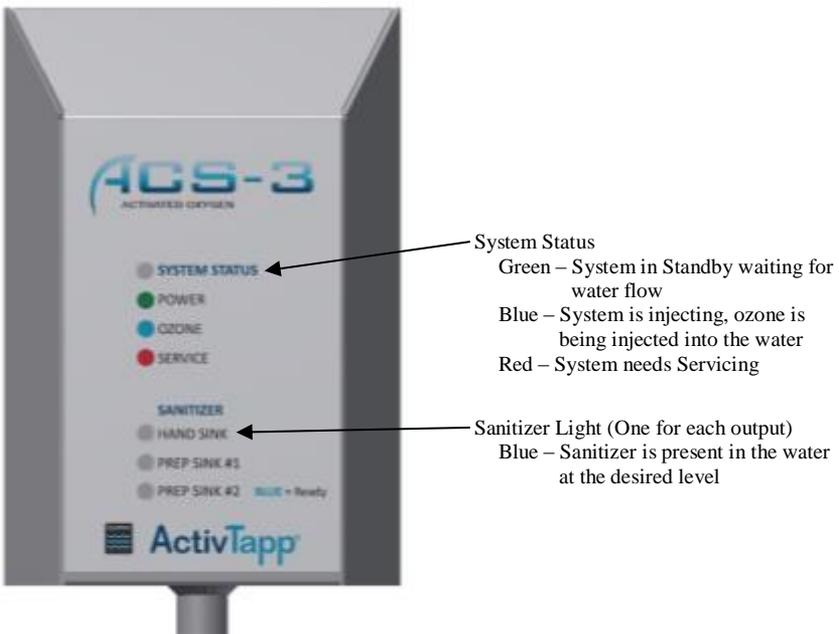


OPERATING INSTRUCTIONS

Once installed the ACS-3 is ready to use, simply use the water like you normally would and begin enjoying the benefits of ozone

The ACS-3 Status Display will have multiple lights to let you know the unit is operating normally. See figure 7 below.

Figure 10 – ACS-3 Status Display



When water flows through the system, the ACS-3 will automatically sense this and turn on. The System Status indicator light will turn from green to blue.

As the ozone is injected into the water, the ORP probe will measure the Sanitation Level (Oxidation Reduction Potent) of the water. If this value goes above the desired level, a blue light for that water output will turn on indicating the required sanitation level in the water is present.

If a leak occurs in the system, the indicator light will turn red, the lights in the indicator window will begin flashing, and an audible alarm will alert you to the problem.

Figure 11 – Summary of System Status LEDs

Indicator LED	Description
Green	System is in standby
Blue	System is running
Red	System needs preventative maintenance (The ACS-3 has a 4000 hour run time recommended service)
Red Flash	Leak Detected

TROUBLESHOOTING

Green light does not come on

- Verify the unit has power

System Status light does not turn blue

- Make sure the water is flowing through the system
- Make sure the water by-bass manifold has the valves set correctly, see figure 6
- Remove or replace faucet aerators with less restrictive aerators in the faucets in the system
- Replace the T&S valve core with a less restrictive valve core

ORP lights do not turn blue

- Verify the unit has power
- Verify the system status light is turning blue when the faucet is open
- Remove or replace faucet aerators with less restrictive aerators in the faucets in the system
- Replace the T&S valve core with a less restrictive valve core
- Back flush ACS-3 to remove any debris from the venturi

Indicator light is red

- The unit needs servicing

Indicator light is blinking red

- There is a water leak in the system. Close off the inlet water to the system immediately.

SERVICING

Annual service

- Replace the air inlet filter
- Replace the check valves
- Replace the Ozone Generator cells

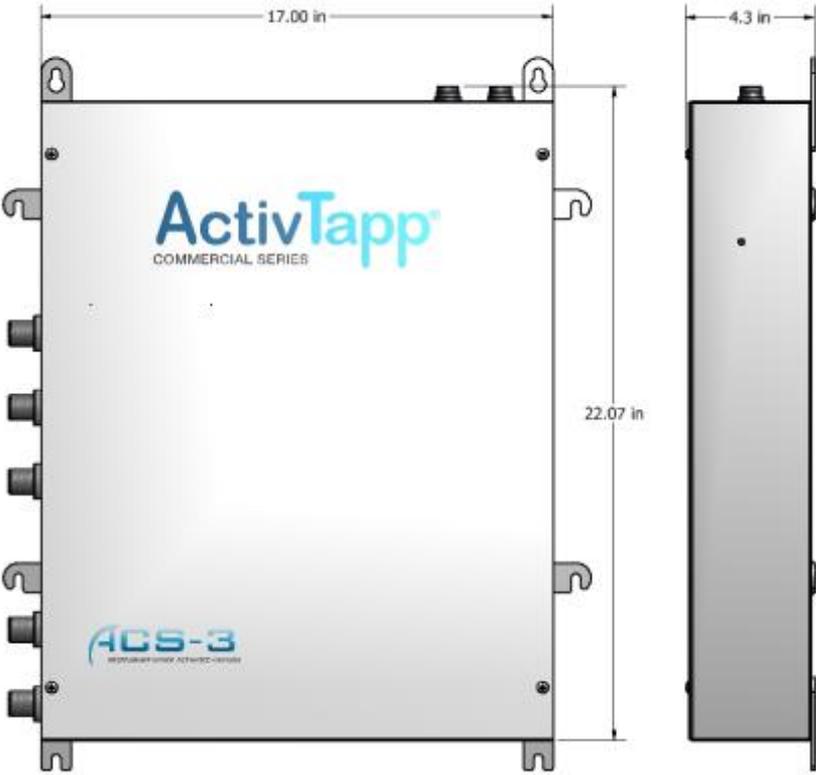
3 Year Service (Indicator light is red)

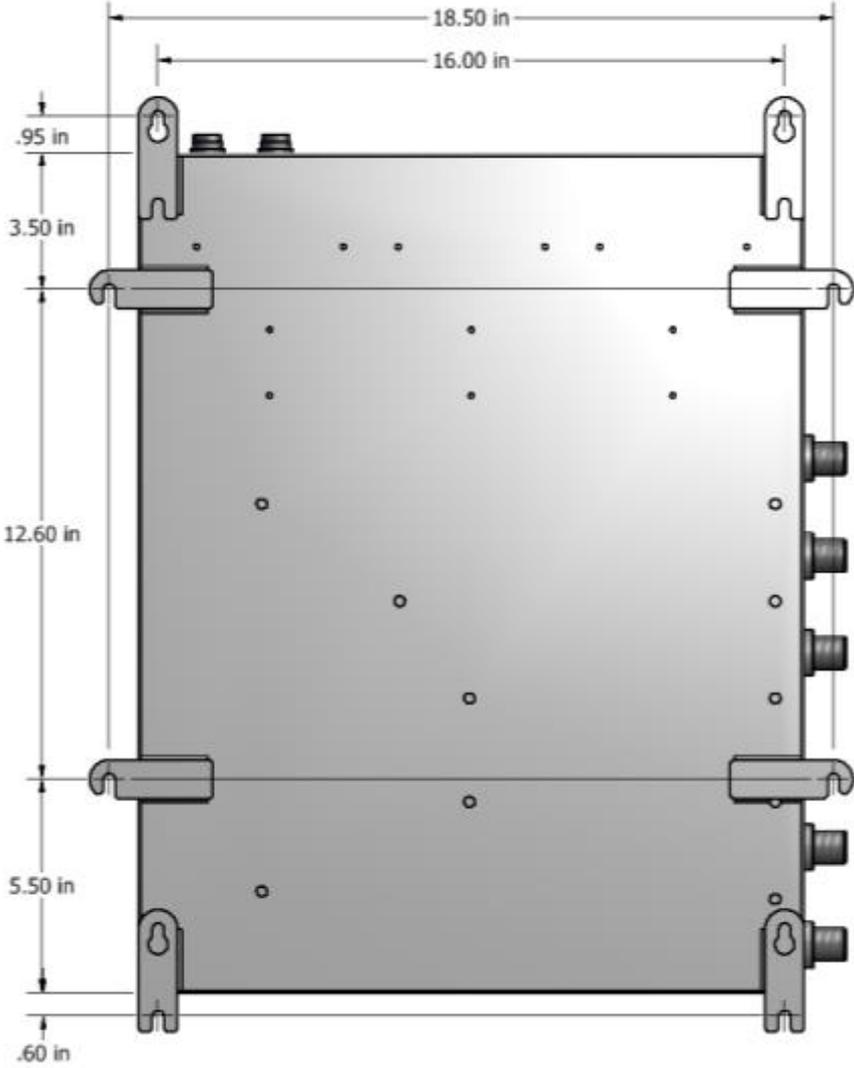
- Replace the air inlet filter
- Replace the check valves
- Replace the Ozone Generator cells
- Replace the ORP probes.
- Reset the service light by unplugging the ACS-3, turn on the water, and plug the ACS-3 back in.

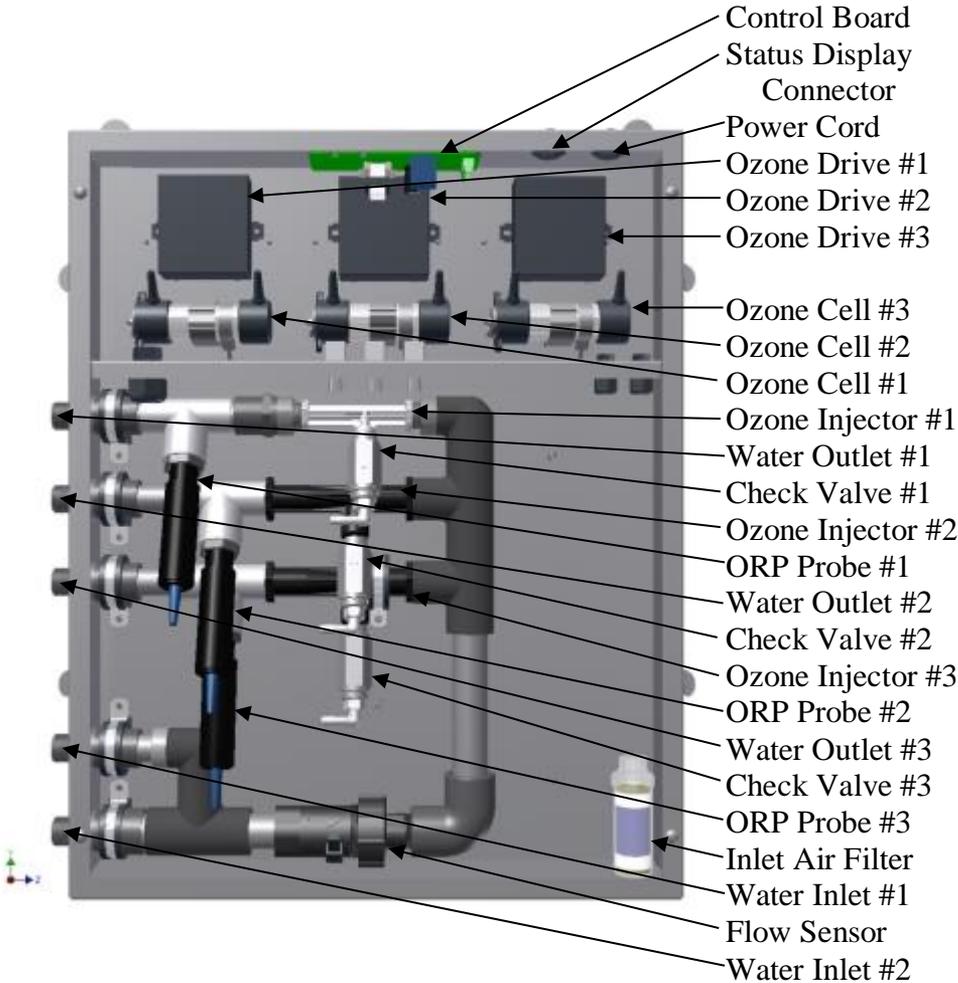
APPENDIX A - SPECIFICATIONS

ACS-3 - 3

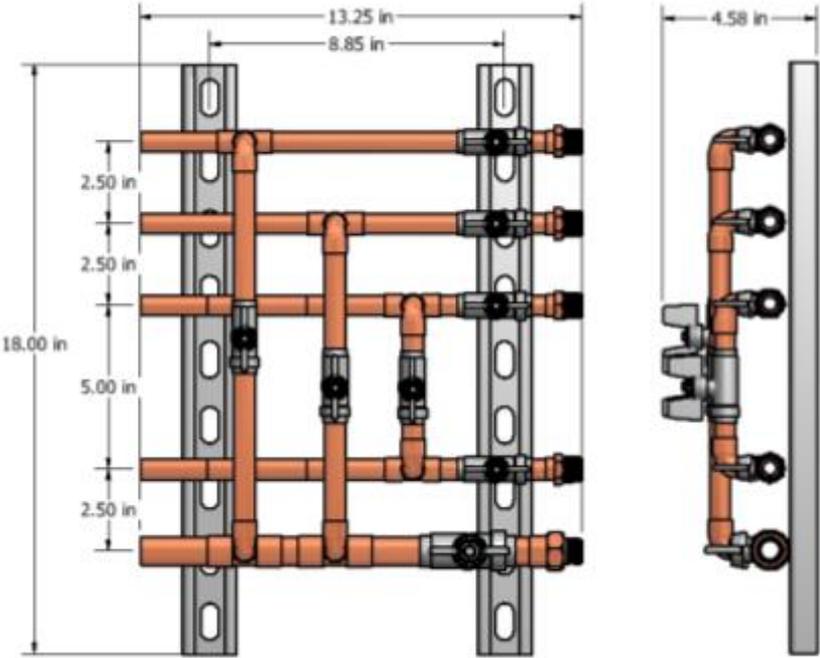
- Electrical Input: 120 Vac 60Hz, 1.5A
- Water Pressure: 40psi to 100psi
- Water Operating Temperature: Cold water only, hot water will reduce the effectiveness of the ACS-3
- Dimensions: 17.12in X 10.55in X 2.57in
- Weight: 20 lbs.



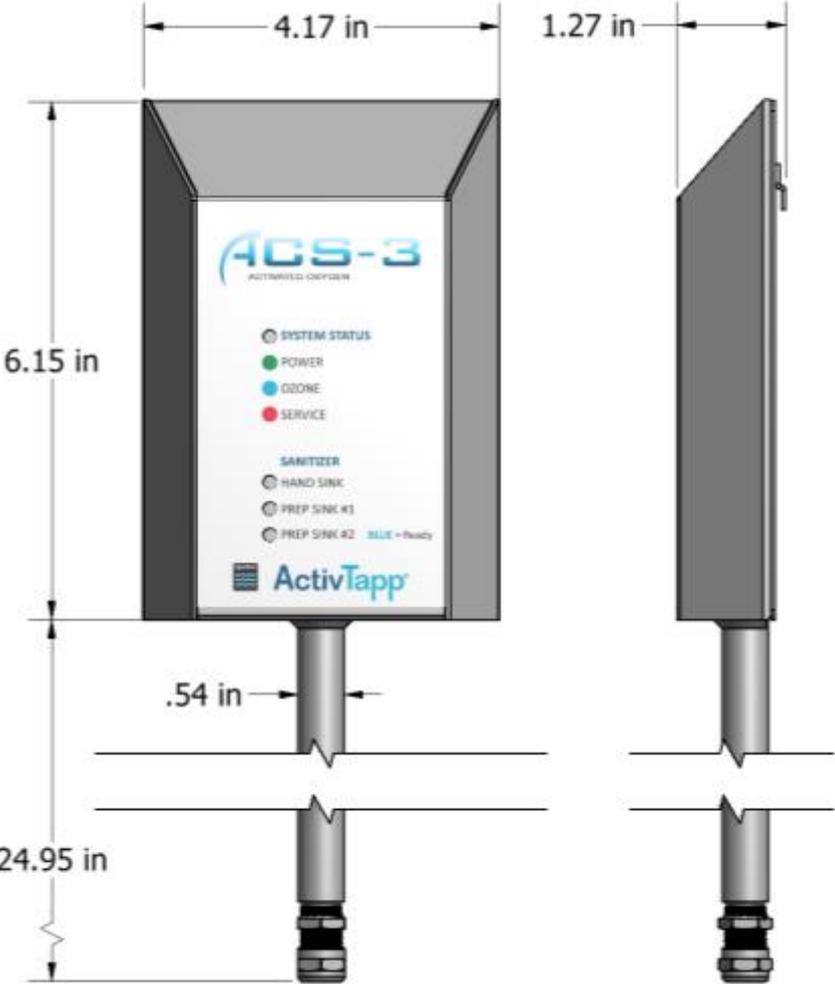




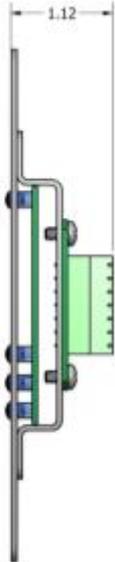
ACS-3 – 3 Water By-Pass Manifold



Status Display – Wall Mount External



Status Display – Wall Mount Internal



APPENDIX B – WARRANTY INFORMATION

ClearWater Tech, LLC. Limited One-Year Warranty

Summary of the Warranty

ClearWater Tech, LLC (“CWT”) makes every effort to assure that its products meet high quality and durability standards and warrants the products it manufactures against defects in materials and workmanship for a period of one (1) year, commencing on the date of original shipment from CWT, with the following exceptions: 1) The warranty period shall begin on the installation date if the installation is performed within 90 days of the original shipment from CWT; 2) The warranty period shall begin on the date of the bill of sale to the end user if the installation date is more 90 days after the original shipment date. To validate the warranty, a warranty card, accompanied by a copy of the bill of sale, must be returned to CWT and must include the following information:

- End user name
- Complete address, including telephone number
- Date installed
- Complete model and serial number information
- Name of company from which the unit was purchased



Repairs and replacement parts provided under this warranty shall carry only the unexpired portion of this warranty or 90 days, whichever is longer.

Items Excluded from the Warranty

This warranty does not extend to any product and/or part from which the factory assigned serial number has been removed or which has been damaged or rendered defective as a result of:

- An accident, misuse, alteration or abuse
- An act of God such as flood, earthquake, hurricane, lightning or other disaster resulting only from the forces of nature
- Operation outside the usage parameters stated in the product user’s manual
- Use of parts not sold by CWT
- Service or unit modification not authorized by CWT
- Damage which may occur during shipping. (File claim with shipping service)
- Failure to meet service requirements as outlined in the I & O manual

Obtaining Service Under the Warranty

Any product and/or part not performing satisfactorily may be returned to CWT for evaluation. A Return Goods Authorization (RGA) number must first be obtained by either calling or writing your local authorized dealer, distributor or CWT direct, prior to shipping the product. The problem experienced with the product and/or part must be clearly described. The RGA number must appear prominently on the exterior of the shipped box(es). The product and/or part must be packaged either in its original packing material or in comparable and suitable packing material, if the original is not available. You are responsible for paying shipping charges to CWT and for any damages to the product and/or part that may occur during shipment. It is recommended that you insure the shipment for the amount you originally paid for the product and/or part.

If, after the product and/or part is returned prepaid and evaluated by CWT, it proves to be defective while under warranty, CWT will, at its election, either repair or replace the defective product and/or part and will return ship at lowest cost transportation prepaid to you except for shipments going outside the 50 states of the United States of America. If upon inspection, it is determined that there is no defect or that the damage to the product and/or part resulted from causes not within the scope of this limited warranty, then you must bear the cost of repair or replacement of damaged product and/or part and all return freight charges. Any unauthorized attempt by the end user to repair CWT manufactured products without prior permission shall void any and all warranties. For service, contact your authorized dealer or distributor or CWT direct at (805) 549-9724.

Exclusive Warranty

There is no other expressed warranty on CWT products and/or parts. Neither this warranty, nor any other warranty, expressed or implied, including any implied warranties or merchantability of fitness, shall extend beyond the warranty period. Some states do not allow limitation on how long an implied warranty lasts, so that the above limitation or exclusion may not apply to you.

Disclaimer of Incidental and Consequential Damages

No responsibility is assumed for any incidental or consequential damages; this includes any damage to another product or products resulting from such a defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so that above limitation or exclusion may not apply to you.

Legal Remedies of Purchaser

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

**THIS STATEMENT OF WARRANTY SUPERSEDES ALL OTHERS
PROVIDED TO YOU AT ANY PRIOR TIME.**