Cruiser Services

TDS- METER / AUTO FLUSH PANEL MOUNT MANUAL

This manual covers the Cruiser Services Combination TDS meter and Auto Flush standalone panel, programing, motorized valve integrations, purge function, watermaker startups and Auto Flush timer.

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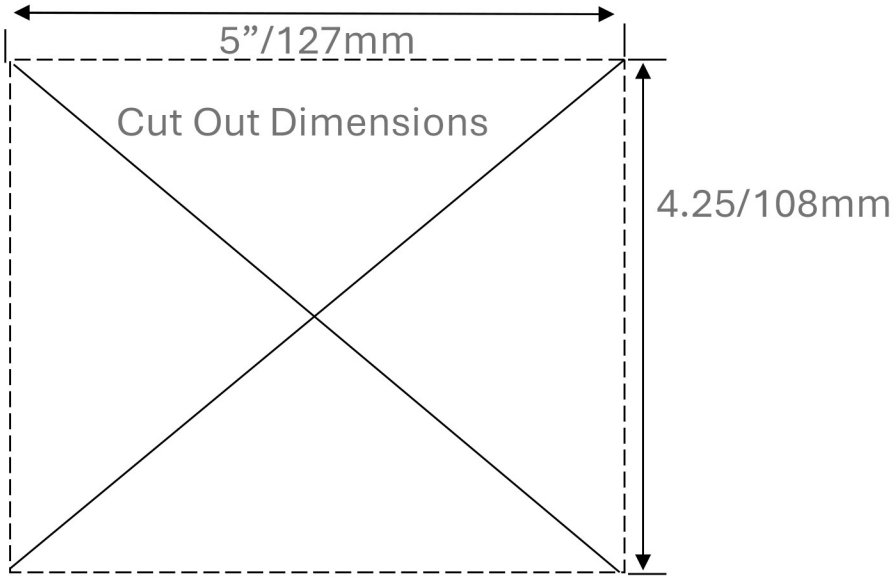
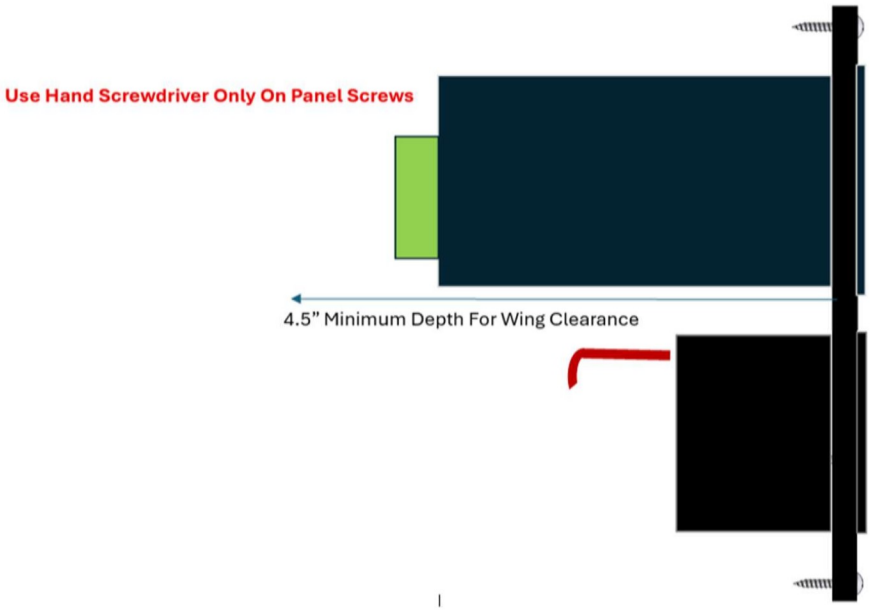
Required Cut Out For Panel

Overall Panel Dimensions: 5-11/16” / 144mm x 5-1/4” / 133mm



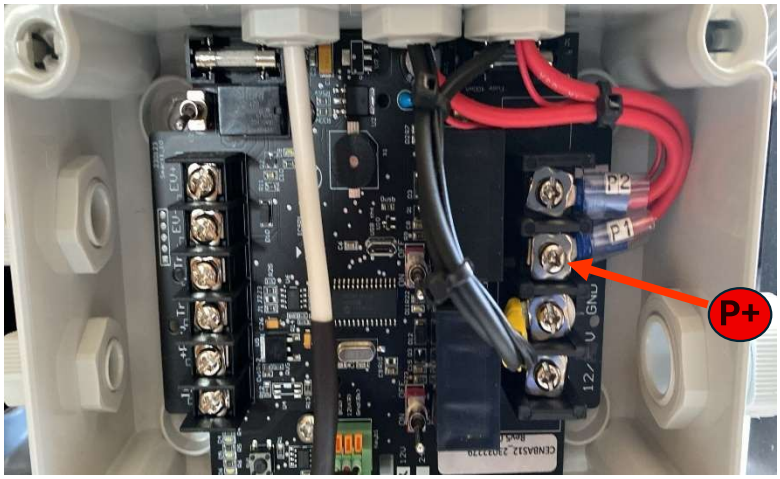


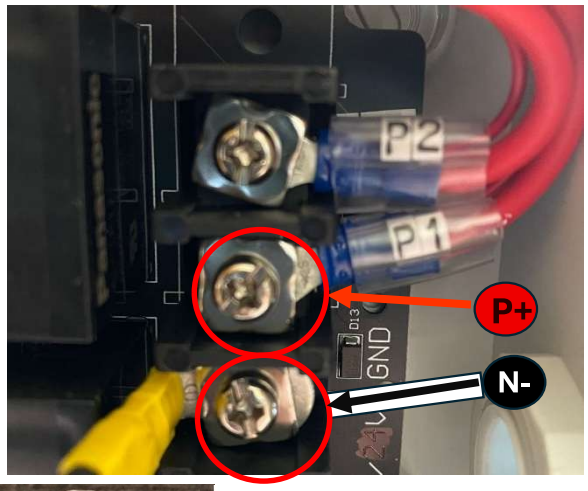
IMPORTANT: Zen Watermakers and other watermaker brands

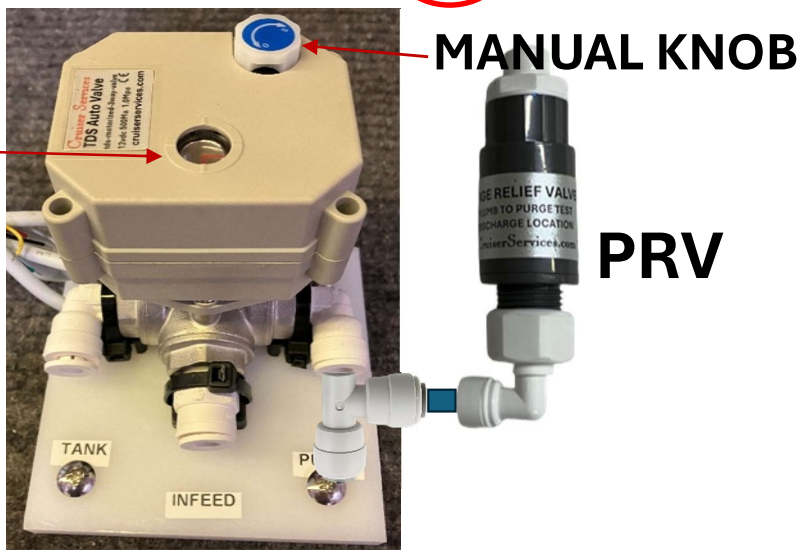
The DC+ positive source for the TDS meter / Switch is to be connected to the P1 connection within the Zen watermaker enclosed junction box. This will ensure the TDS meter and valve are only active when the watermaker is on. Other water makers use the power on source for this connection.

A 3amp fuse is required on the positive line feed prior to the TDS meter connection for overload protection.

See images for reference.







Manual Override Instructions:

◎ In the event of an electrical or functional failure, it is possible to operate the valve manually.

◎ All power to the valve must be off prior to engaging the manual override.

◎ Gently pull the manual knob upward approximately 3mm / 1/8" , then rotate the knob left or right to control the valve functions to **Purge** or **Fresh water tank position**.

◎ When the red needle in the indicator is pointing to right this indicates the valve is in the **Purge** position; When it is pointing to left this indicate the valve is in the **Fresh water tank position**.

◎ After finishing the manual override operation, You must press down on the knob, to engage and resume the normal electrical functions.

TDS Display Programming Instructions

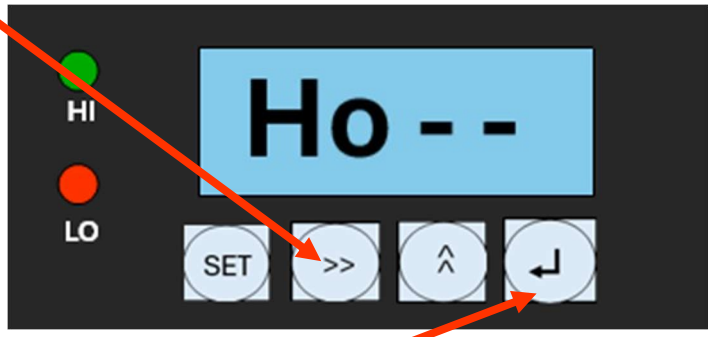
PROGRAMMING: (HI-Terminal #9) for motorized valve auto diversion at watermaker power on;

1-POWER ON THE METER

2-SET the (HI-Terminal #9) aka [Ho - -] to 0480ppm

A: Start by pressing the SET Button

B: Then press this button  **to scroll to the right until you see [Ho - -] appear in led screen**



C: Once you see [Ho - -] press the  **enter button.**

D: Now set Ho - - to 0480ppm using these buttons

E: Once the number is set to 0480ppm press the enter

F: Once you have pressed the enter button from step E: wait for [Ho - -] to appear and start flashing.

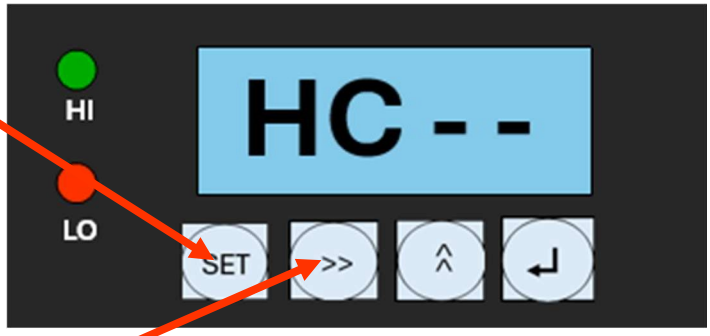
At that point press the SET  **button to save this setting of 0480ppm.**

This is the point where the positive DC power switches from (HI #9) to (LO #7) on the rear of the TDS meter rotating the valve sending product water flow to the ship's freshwater tanks.

TDS Display Programming Continued

3: Setting the PURGE OVERBOARD valve activated setting.

A Start by pressing the SET Button



B: Then press this button [>>] **to scroll to the right until you see [HC - -] appear in led screen**

C: Once you see [HC - -] press the [↵] **enter button.**

D: Now set [HC - -] to 0500ppm using these buttons

E: Once the numbers are set to 0500ppm press the enter

F: Once you have pressed the enter button step E:, wait for [HC - -] to appear and start flashing.

At that point press the SET [SET] **button to save this setting of 0500ppm.**

This is the point where the (LO#7) on the rear of the TDS meter positive DC power switches to (HI-#9) rotating the valve and the product water that is not below 0500ppm is directed to the purge location. Water continues to flow to the purge location until reaching -0480ppm.

TDS Display Programming Continued

The [Lc - -] and [LO - -] settings are related to the (LO-Terminal #7) and will also be set for the same settings as the [Ho - -] and [HC - -] (HI-Terminal #9).

PROGRAMMING: (LO-Terminal #7)

1-POWER ON THE METER

4-SET the (LO-Terminal #7) aka [Lo - -] to 0480ppm

A: Start by pressing the SET Button

B: Then press this button  **to scroll to the right until you see [Lo - -] appear in led screen**

C: Once you see [Lo - -] press the  **enter button.**

TDS Display Programming Continued

D: Now set [Lo - -] to 0480ppm using these buttons

E: Once the number is set to 0480ppm press the enter

F: Once you have pressed the enter button from step E: wait for [Lo - - to] appear and start flashing.

At that point press the SET 

button to save this setting of 0480ppm.

5: Setting [LC - -] to 500ppm

A: Start by pressing the SET Button

B: Then press this button 

to scroll to the right until you see [LC - -] appear in led screen

C: Once you see [LC - -] press the 

enter button

TDS Programming Instructions Continued

D: Now set [LC - -] to 0500ppm using these buttons

E: Once the numbers are set to 0500ppm press the enter

F: Once you have pressed the enter button from step E: wait for [LC - -] to appear and start flashing.

At that point press the SET 

button to save this setting of 0500ppm. Programming is now completed.

TDS AUTO / MANUAL PURGE - Panel Switch

The panel switch next to the meter allows for a manual purge 3way valve diversion. When switched to the manual position the TDS meter powers down. The power is then sent to the purge activation side of the 3way valve-(GREEN WIRE). Recommended when starting up after a system has been pickled to purge unwanted product water containing pickling solution. The pickling solution water in the system may not contain a plus 500ppm reading on the TDS meter and would not auto divert. Also useful on start ups when prefilters have been changed or cleaned

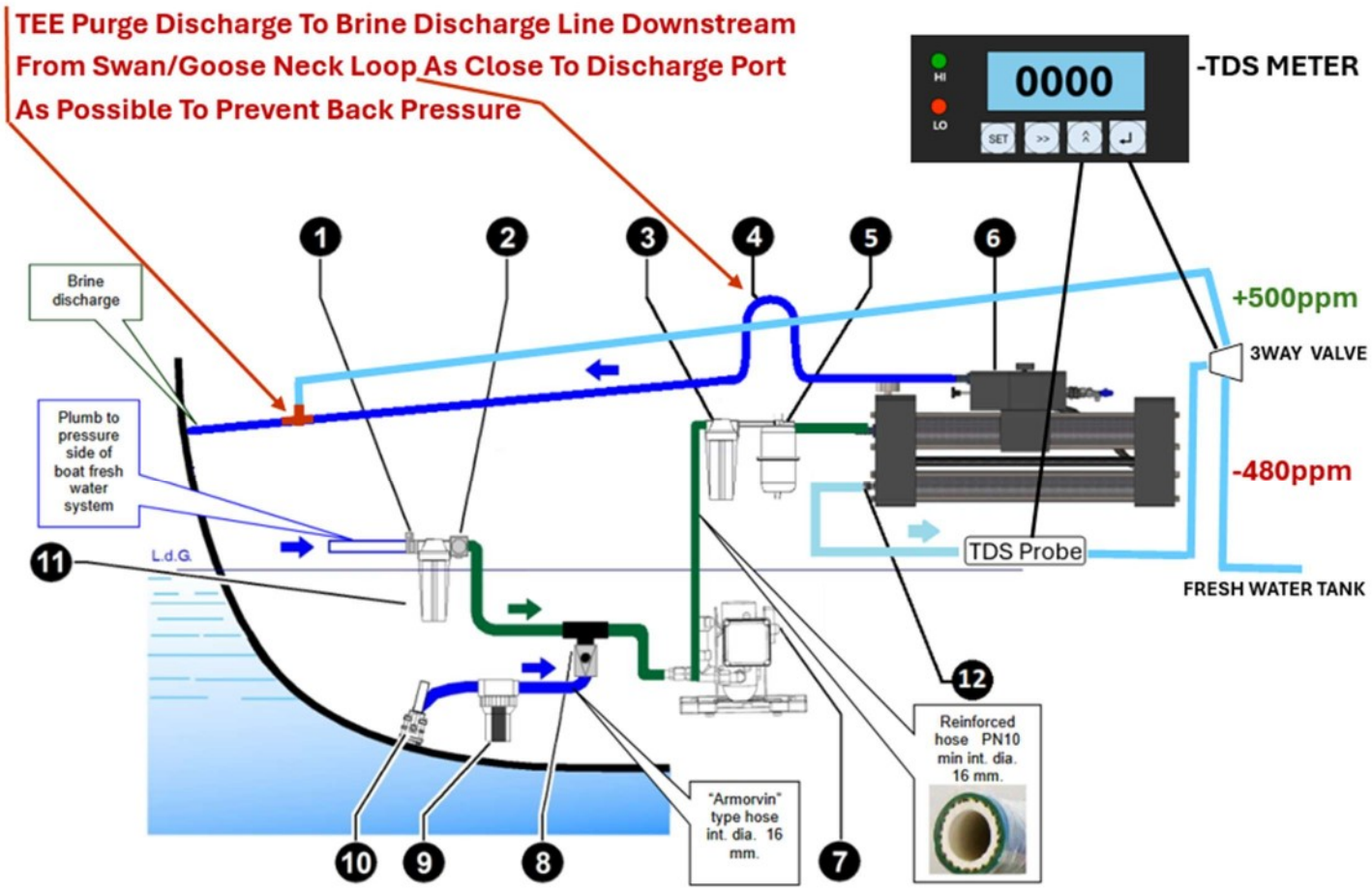
NOTE: A good practice is to test the system to a bucket or other container to ensure you have plumbed the motorized valve for correct water flow before sending unwanted water to your ship's freshwater tank.

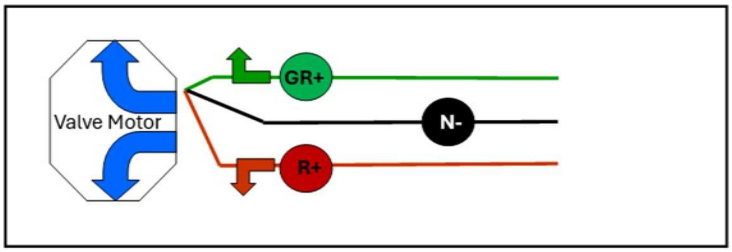
Please continue to view the following additional automated valve information on the next pages. The motorized valve functions are explained, and layout example of the valve is provided.

Typical Install Layout

The diagram below shows the typical install methods with a Schenker watermaker system.

This is a universal system and can be integrated for use with any watermaker brand unit.





Three wire feeds:

GR+ Wire: Positive from TDS meter terminal #9 or from a panel switch if valve is being used to control tanks. Rotates valve to the right-side port.

BLACK aka N- Wire: Negative source, TDS Meter or the ships negative power source.

R+ Wire: : Positive from TDS meter terminal #7 or from a panel switch if valve is being used to control tanks. Rotates valve to the left-side port.

Motorized 3-Way Valve

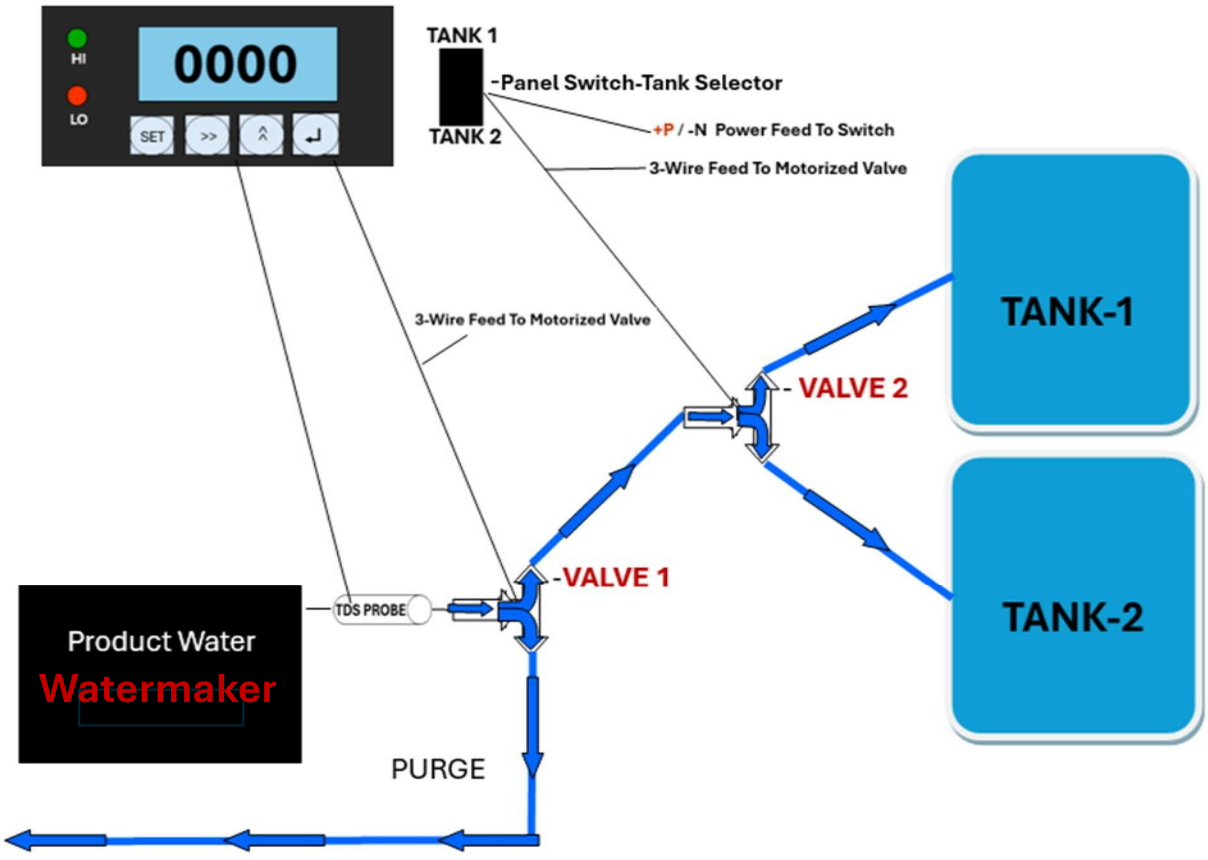
+ Valve is constructed of 304 stainless steel, making it a superior choice over other valves constructed of brass. No unwanted taste distortion.

+ Very quiet when in operation. No continuous duty heat generated. Automatically cuts power when a rotation has completed.

+ Contains a manual control knob in the event of electrical failure.

+ An additional valve/valves can be utilized to automate tank selectors and fill multible fresh water tanks with a push of a switch.

EXAMPLE OF A TWO TANK SYSTEM:



AUTO FLUSH TIMER PROGRAMMING

Timer unit is pre-programmed for a 5-minute flush period every 5 days / 120 hours.

The following procedures will describe how to change that setting to your own desired settings.

1- **Timer is in the locked mode. To unlock timer, press and hold the SET button until the first setting appears which will be the image screen below:**

2- **Now press and release the SET button repeatedly which will advance the settings to the lock screen which is PS as seen in the image below:**

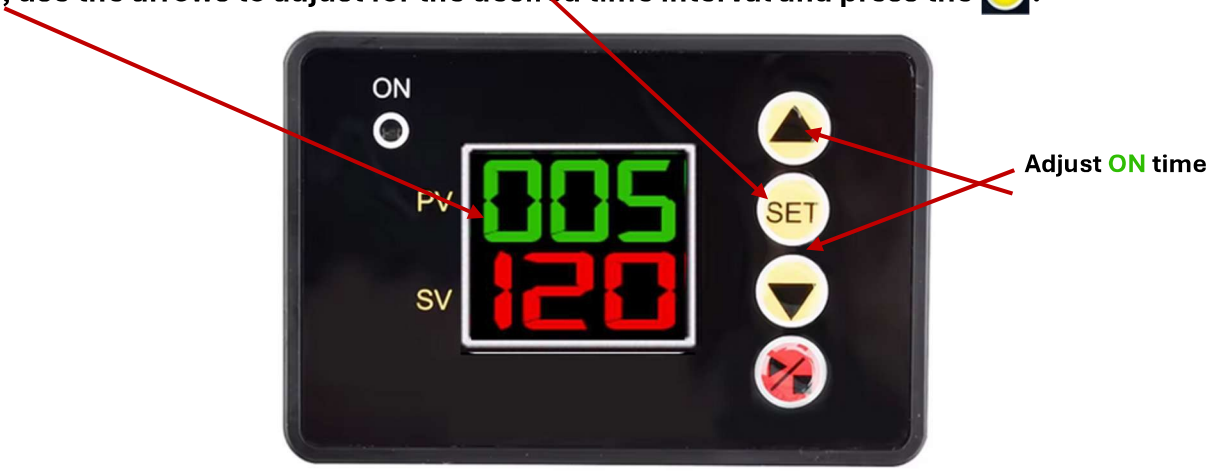
3- Use the arrow buttons to change the -ON to the OFF indicator on the screen, at this point press and release the SET button once. The timer is now unlocked and will return to the timing screen.

Changing times to your own desired settings.

Once the timer has unlocked the settings can be adjusted. The on time is set for minute countdown which is the top green indicator digits preset to 005 which is 5 minutes.

The off time is set in hours between flushes which is the bottom red indicator digits currently set to 120 hours = 5 days.

4- To adjust these times double press the SET button. The green minutes on screen will begin to flash, use the arrows to adjust for the desired time interval and press the SET.



5- Once the on time (in minutes) has been adjusted press the SET button, the red off duration digits will begin to flash. This is currently set for 120 hours or 5 days. Use the arrows to adjust the desired hours between flush cycles.
Once your desired hours are adjusted press the SET button, the timer begins its cycle.
2 days = 048 hours | 3 days = 072 hours | 4 days = 096 hours | 5 days = 120 hours

NOTE: P0 setting is 1 which is minutes on. P1 Setting is 2 which is hours off. It is highly recommended to not adjust these settings as you run the risk of improper duration during flush cycles.

6- Timer is preset for a flush at start. It can be set to start with an OFF cycle first by setting the P2 to OFF. Press and hold the SET button until P0 appears then release the button. Next press the SET button twice to advance to P2, then use the arrow button to change the cycle start from ON to OFF . Press the SET button 3 times to begin the cycle in an off mode.

Starts with a flush cycle on in minutes

Starts with an off cycle in hours

7-

P3 setting on the timer is preset to OFF which is a continuous loop. We highly recommend not adjusting this setting as you can run the risk of a failed flush cycle.

OFF = Continuous cycle loop

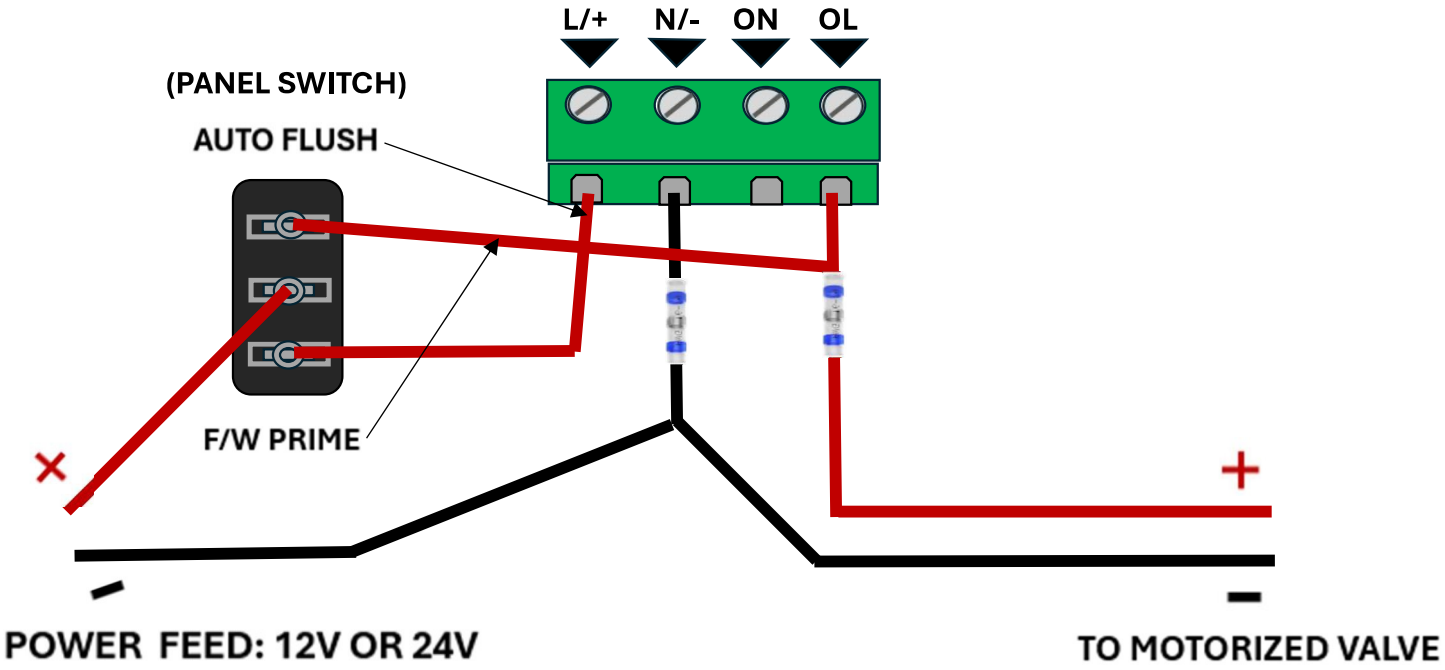
8- P4 setting on the timer is preset to -ON which triggers the flush valve to open during a flush cycle period. We highly recommend not adjusting this setting as you can run the risk of a failed flush cycle.

9- The auto flush is equipped with a switch labeled AUTO FLUSH at top and F/W PRIME mode on the lower or downward area, located at right of the timer screen. This switch has an ON/OFF/MOMENTARY function. When using it will need to be manually pushed and held down to allow a freshwater prime function to activate. When released the motorized valve will automatically close.

The freshwater prime function disables the AUTO FLUSH timer during use and sends power directly to the motorized valve causing it to open and flush or prime the system with fresh water from your tank.

Terminal connections and wiring diagram:

Back side of the timer has the following terminal connections:



Auto Flush Valve / Filter / Check Valve Assembly:

Filter Wrench

Top Mount To Bulkhead 90degrees