

HANS™ Premium Water Model 2 / 2R



Owner's Manual

8900-10



Model 2 and Model 2R are certified by IAPMO R&T to NSF/ANSI 61, NSF/ANSI 372, and LEC 2006. The Model 2 and Model 2R are certified by IAPMO R&T to NSF / ANSI 53 for VOC reduction when the system uses two 8327 filters.



Model 2 and Model 2R have been evaluated by ASSE International for Halal compliance.



Model 2 and Model 2R are certified by ASSE International to LEC 2006.



Model 2 and Model 2R are certified by IAPMO R&T to CSA B483.1, ASSE 1087 and to NSF/ANSI 244 for reduction/inactivation of pathogenic (disease-causing) bacteria, viruses and cysts.



Model 2 and Model 2R conform to Intertek UL STD 979.

Document Revision Table

ECR	Revision	Date	Section(s) Revised: Description
1409	01	10/01/2020	N/A
N/A	02	11/02/2020	All: General and clerical updates
N/A	03	12/30/2020	General Information: Updated information for use with private wells. Terms & Definitions: Updated filter nomenclature. Water Source: New single screen with settings for any water source. Warnings & Alerts: Added alert for Stage 1&2 – Check Filters, added alerts for VOC filter life.
1424	04	01/11/2021	General: Manual updated to include Model 2R Specifications: Added Model 2R specs. Updated inlet water specs. System Overview: Added Model 2R single RO cassette
N/A	05	07/01/2021	General: Updated regulatory certification language on cover. Added final slide with company address and phone number. Control Screen: Updates to control screen Filter Screen: Updates to filter screen
1435	06	07/19/2021	All: General and clerical updates.
1487	07	01/18/2022	Home Screen: Updated buttons Auto-Control Settings: New section added Filters Screen: Updated from percentage left to total gallons left Filter Capacity: New section added Water Source Settings: Updated Chlorine/Chloramine configuration Operational States: Updated table to add Hybrid Mode and Filter Flush Warnings / Alerts: Updated alert message language and solution for several line items.
1508	08	06/01/2022	Cover Page: Updated badges for Halal and LEC2006 and added NSF/ANSI 372 certification Filters Screen: Updated screen shot, includes 'No Calcite' button. Warnings / Alerts: Updated alert message language. Added new alerts. Arranged table alphabetically.

Document Revision Table (continued)

ECR	Revision	Date	Section(s) Revised: Description
1513	09	09/30/2022	General: Clerical and formatting updates Warnings / Alerts: Added cloud alert, drain valve fault, and zero rejection mitigation
1537	10	03/02/2023	General: Clerical and formatting updates Title Page: Updated text referencing ETL mark Auto-Control Settings: Updated descriptions for each control setting System Diagnostics: Added recovery flush Operational States: Added outlet TDS flush Warnings/Alerts: Added motor thermistor fault

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General Information

Please refer to the **HANS™ Premium Water** website (www.hanspremiumwater.com/support) for most current version of this manual as well as the Performance Data Sheet for this system (P/N 8524).

HANS™ Premium Water Model 2 / Model 2R

The HANS™ Premium Water Model 2 / Model 2R is a durable piece of equipment, which, with proper care, will last for many years. This Owner's Manual outlines operation and troubleshooting details vital to its sustained performance.

If the system is altered at the site of operation or if the inlet water conditions change, please contact your local dealer or distributor to determine proper recovery for your use.

Prior to operating or servicing the Model 2 / Model 2R, this manual must be read and understood. Keep this and all associated documentation available for future reference.

Safety

The various safety headings used throughout this manual's text are defined below:



NOTE: Identifies statements that provide further information and clarification.



CAUTION: Identifies conditions or practices that could result in equipment or other property damage.



WARNING: Identifies conditions or practices that could result in injury or loss of life. Failure to follow warnings could result in serious injury or death.

DO NOT REMOVE UNDER ANY CIRCUMSTANCE CAUTION, WARNING, OR OTHER DESCRIPTIVE LABELS FROM THE APPLIANCE.

General Information (continued)

Read this manual and the installation manual (P/N 8910) before installing and using the Model 2 / Model 2R system. Follow steps exactly to install the system correctly. Failure to do so could cause personal injury or property damage.

As with any water system, it is highly recommended that a leak detection system with a water main shut-off valve be installed to prevent property damage due to a plumbing or system failure.

Do not use the HANS™ Premium Water Model 2 / Model 2R to create safe, drinkable water that is from non-potable water sources. Do not use this system on microbiologically unsafe water or water of unknown quality without disinfecting.

For use with private wells:



WARNING: Do not use on private well water until the water has been tested by a certified drinking water laboratory to determine microbial safety in accordance with regulatory standards. Before using this system on a private well, it is the responsibility of the user to have the well tested by an accredited drinking water laboratory. For continuous use of this device on a private well, it is the responsibility of the user to obtain frequent microbiological testing (recommended twice per year, minimum) of the well water entering the system by an accredited drinking water laboratory to monitor continued compliance with the applicable regulatory standards. If the well source becomes microbiologically contaminated as indicated by testing, discontinue use of this system until sufficient well treatment and testing indicates that the water again meets the applicable regulatory standards. Following exposure of the device to microbiologically contaminated water and prior to its reuse, conduct the proper sanitization and servicing as directed in the service & maintenance manual (P/N 8920).



WARNING: This system may not perform as claimed unless all functional components are installed in their proper sequence in accordance with the installation and maintenance instructions.

This system has been tested according to NSF/ANSI 244 for reduction / inactivation of pathogenic (disease-causing) bacteria, viruses and cysts. The concentration of the indicated bacteria and virus surrogates in water entering the system was reduced to meet the reduction criteria, as specified in NSF/ANSI 244. The bacteria and virus surrogate reduction indicates verification of cyst reduction.

This system not intended to control all heterotrophic plate count (HPC) bacteria.

General Information (continued)



WARNING: This system is for use on water supplies that have been treated to public water system standards or otherwise are determined to be microbiologically safe as demonstrated by routine testing. This system has been tested to demonstrate protection against intermittent accidental microbiological contamination of otherwise safe drinking water.

Do not use with water that is microbiologically unsafe or of unknown quality. This system is not intended for use during a boil water advisory. Stop using this filter system when a boil water advisory is issued. After a boil water advisory has been discontinued and prior to reuse, sanitize and service the system as directed in the service & maintenance manual.



GROUNDING INSTRUCTIONS: This system must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This system is equipped with a cord having a system-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.



WARNING: Improper connection of the system-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the system is properly grounded. Do not modify the plug provided with the system; if it will not fit the outlet, have a proper outlet installed by a qualified technician.



WARNING: It is the user's responsibility to heed all alerts and warnings from the system concerning calcite cartridge from the onboard display and the mobile app, as these replaceable treatment components are critical to proper system performance.

The manufacturer also recommends that the user periodically test the output water to verify the system is performing correctly.

General Information (continued)

Check with local public works department for plumbing and sanitation codes. Follow their guides as you install the HANS™ Premium Water Model 2 / Model 2R. Follow local codes if they differ with guides in this manual.



In Massachusetts, plumbing code 248-CMR 3.00 and 10.00 shall be adhered. Consult with a licensed plumber.

Avoid installing this system in direct sunlight. Excessive heat may cause distortion or other damage to non-metallic parts.

If installing the Model 2 / Model 2R outdoors, do not locate where it will be exposed to wet weather, direct sunlight, or extreme hot or cold temperatures. The system requires an ambient temperature range of 35 to 120 degrees Fahrenheit.

The Model 2 / Model 2R has a non-metallic valve system. Installing it on metal plumbing will break electrical continuity, which may interrupt grounding for your home. You must restore electrical continuity in your metal plumbing system. Please refer to the installation manual (P/N 8910) for further information.



WARNING: An air gap should be plumbed to state and regional codes and used to connect the reject water outlet to a drain connection.

While this Reverse Osmosis system contains replaceable treatment components to raise pH, RO water can lower pH. As this can be corrosive to some plumbing materials, care should be taken to properly maintain your system.

General Information (continued)

California Proposition 65 Warning



WARNING: This product can expose you to chemicals including Arsenic, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Warranty / Terms of Use

Please refer to the **HANS™ Premium Water** website for Terms of Sale and Warranty Information. This information can be found at:

www.hanspremiumwater.com/support



Terms & Definitions

TERMS	DEFINITIONS
Ambient temp	Air Temperature of the immediate area around the system
Chlorine	Water additive in inlet water; may be used as a disinfectant
Element	Reverse Osmosis "filter"
gpg	Grains per gallon, a unit of measure of calcium carbonate
Hardness	Amount of dissolved calcium & magnesium in the water measured in grains per gallon (gpg)
Inlet Water	Unfiltered water from municipal or well that is plumbed into the system
Output Water	Clean water output from the system
pH	Scale of acidity from 0-14, with 7 being neutral
Power Cycle	Unplugging the unit from power, waiting 60 seconds, then reconnecting unit to power.
ppm	Parts per million, a unit of measure for small concentrations of substances in water
Recovery Rate	Amount of filtered water recovered compared to wastewater in %
Stage 1 Filter	Standard – 20-to-5-micron filter used as the 1 st filter of inlet water to remove debris (P/N 8847) Chloramine – Catalytic carbon (P/N 8327)
Stage 2 Filter	Standard – Catalytic carbon (P/N 8327) Chloramine – Catalytic carbon (P/N 8327)
Stage 3 Element	Reverse Osmosis Elements used as final stage to clean inlet water (P/N 8017)
Stage 4 Filter	Standard & Chloramine – Calcite. Raises pH and re-mineralizes filtered water (P/N 8536)
Surge tank	Internal storage tank used to store water and buffer outlet pressure
TDS	Unit of measure for total dissolved solids in water in ppm
Wastewater	Water carrying away contaminants from the Elements to the drain

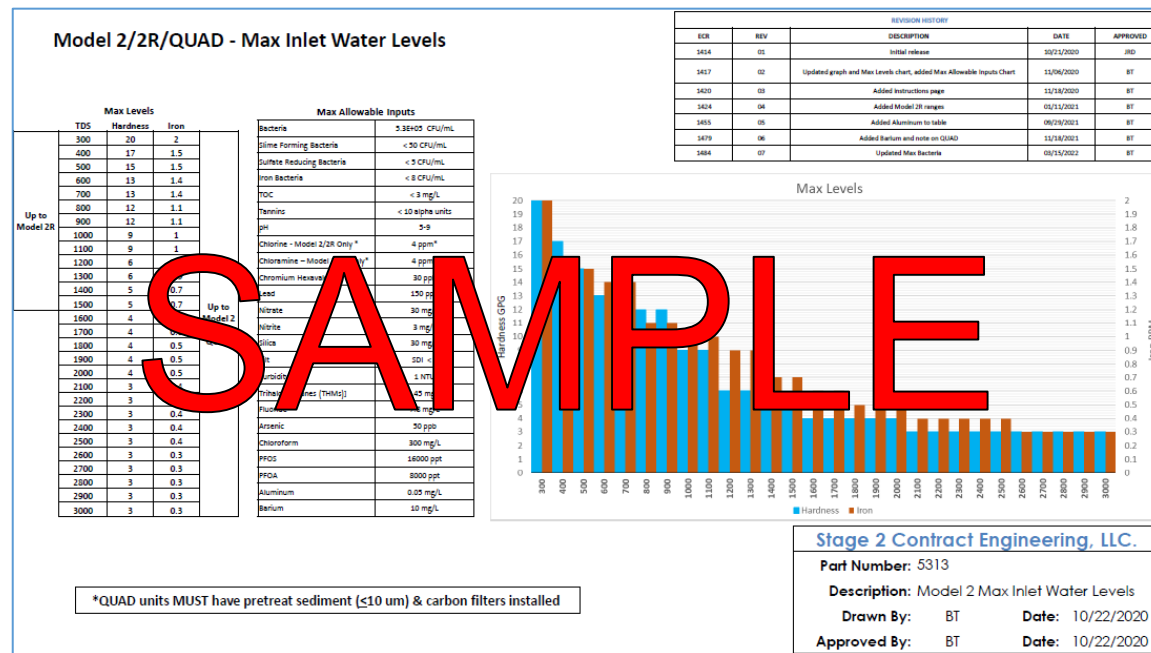
System Specifications

Inlet Water Source



The HANS™ Premium Water Model 2 / Model 2R is designed to operate with a wide range of inlet water; however, refer to the **Max Inlet Water Levels document (P/N 5313)** for inlet water combination requirements.

If the inlet water parameters are outside the ranges indicated Max Inlet Water Levels document, a pre-treatment system will be required for the inlet water to the Model 2 system.



Sample illustration is for demonstration only. Refer to the Max Inlet Water Level document directly.

Higher inlet TDS and/or lower (seasonal) water temperatures will reduce the system's water output flow and recovery rate (efficiency).

For optimal performance if your system is on a well, use a 40/60 well switch with the minimum bound set to 45 psi. For inlet pressure that exceeds 60 psi, a pressure reducing valve (PRV) must be installed.

System Specifications (continued)

Failure to meet minimum water requirements may cause the RO elements to foul and void the manufacturer's warranty.

Combinations of TDS, Iron, Arsenic, hardness and other contaminants will change maximum specifications.

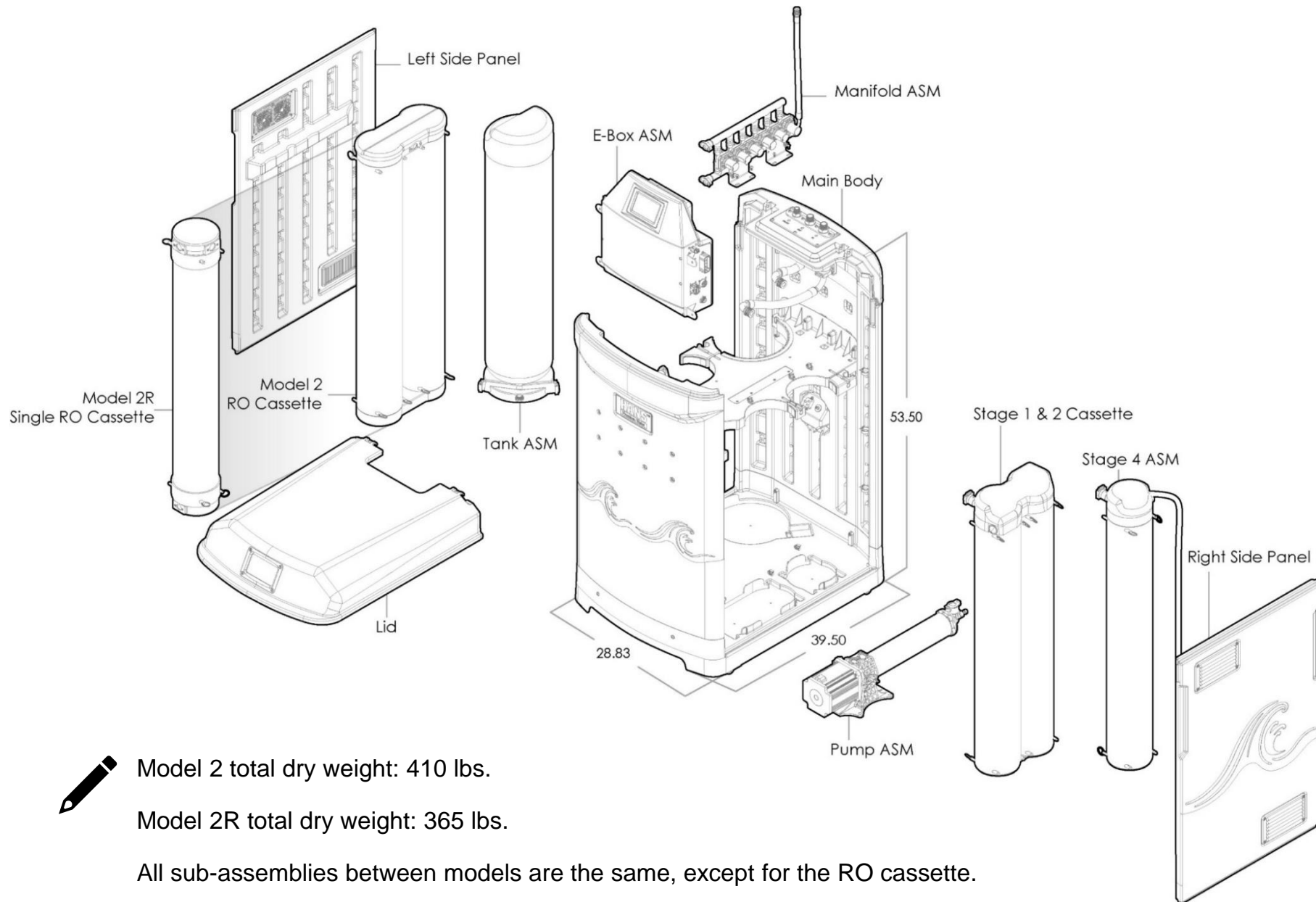
See Performance Data Sheet (www.hanspremiumwater.com/support) for further information.

This Reverse Osmosis system contains replaceable treatment components critical for effective performance. It is the user's responsibility to heed all alerts and warning from the system concerning carbon filter, calcite filter and element replacement from the on-board display and the mobile app. The manufacturer also recommends that the user periodically test the output water to verify the system is performing correctly.

Use only HANS™ Premium Water Replacement treatment components: Sediment Filter (P/N 8847), Carbon Filter (P/N 8327), RO Element (P/N 8017), and Calcite Filter (P/N 8536). The use of any products other than HPW replacement filters, cartridges, elements, and/or parts will void warranty and invalidate all claims for health and performance.

System Overview

Exploded view of the overall system and identification of the various sub-assemblies.



Installation & Start-Up

Installation should be performed by a qualified technician.



Refer to the HANS Premium Water Model 2 / Model 2R Installation Manual (P/N 8910) available for download at www.hanspremiumwater.com/support.



HANS™ Premium Water Model 2 / Model 2R

Installation Manual **8910-10**



Model 2 and Model 2R are certified by IAPMO R&T to NSF/ANSI 61 and LEC 2006. The Model 2 and Model 2R are certified by IAPMO R&T to NSF / ANSI 53 for VOC reduction when the system uses two 8327 filters.



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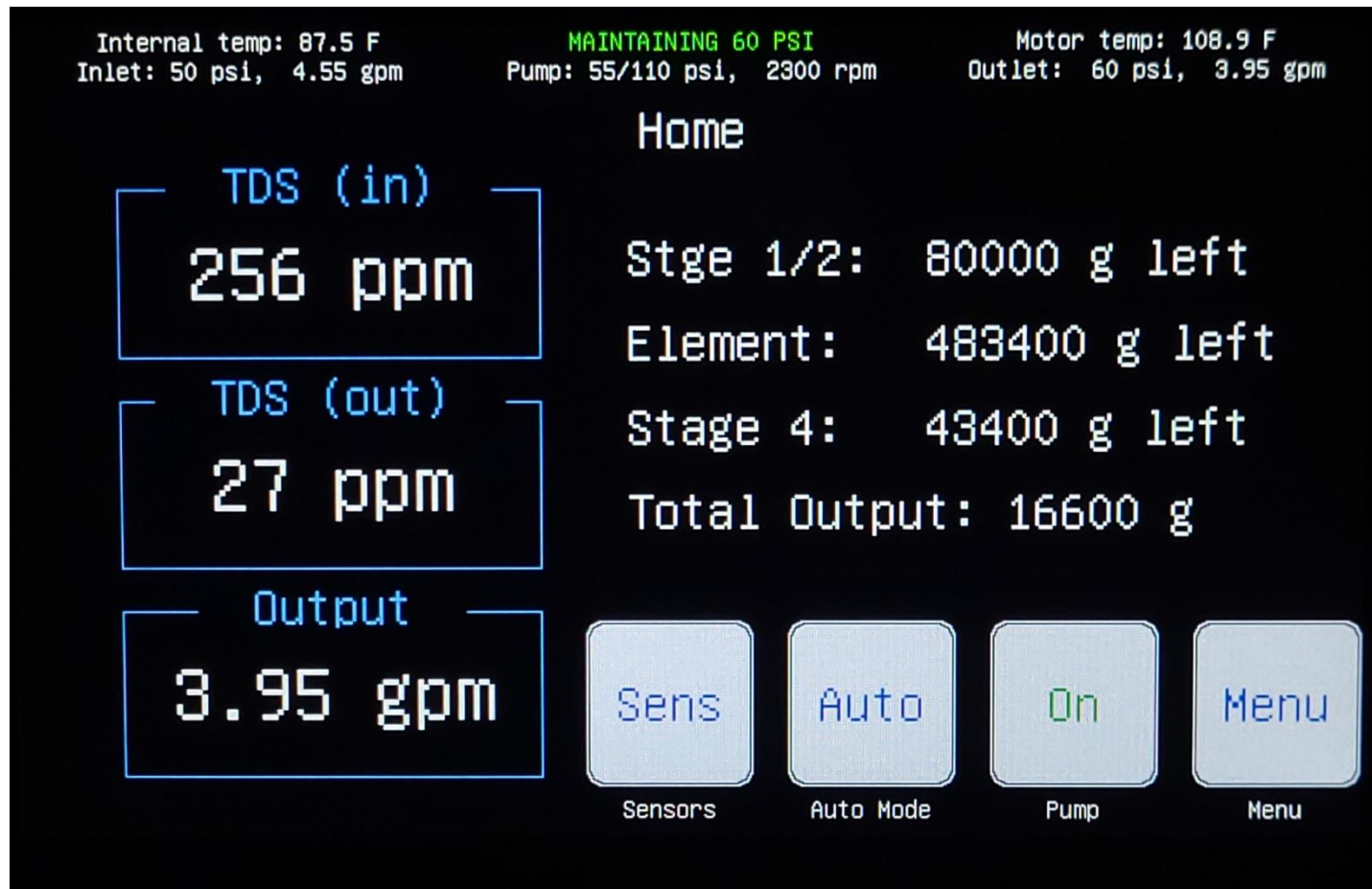
Model 2 and Model 2R are certified by Intertek to UL STD 979.

Display Navigation – Home Screen

The home screen displays all the pertinent operational parameters as well as filter life and total output (clean water).



From any screen, select the home button.



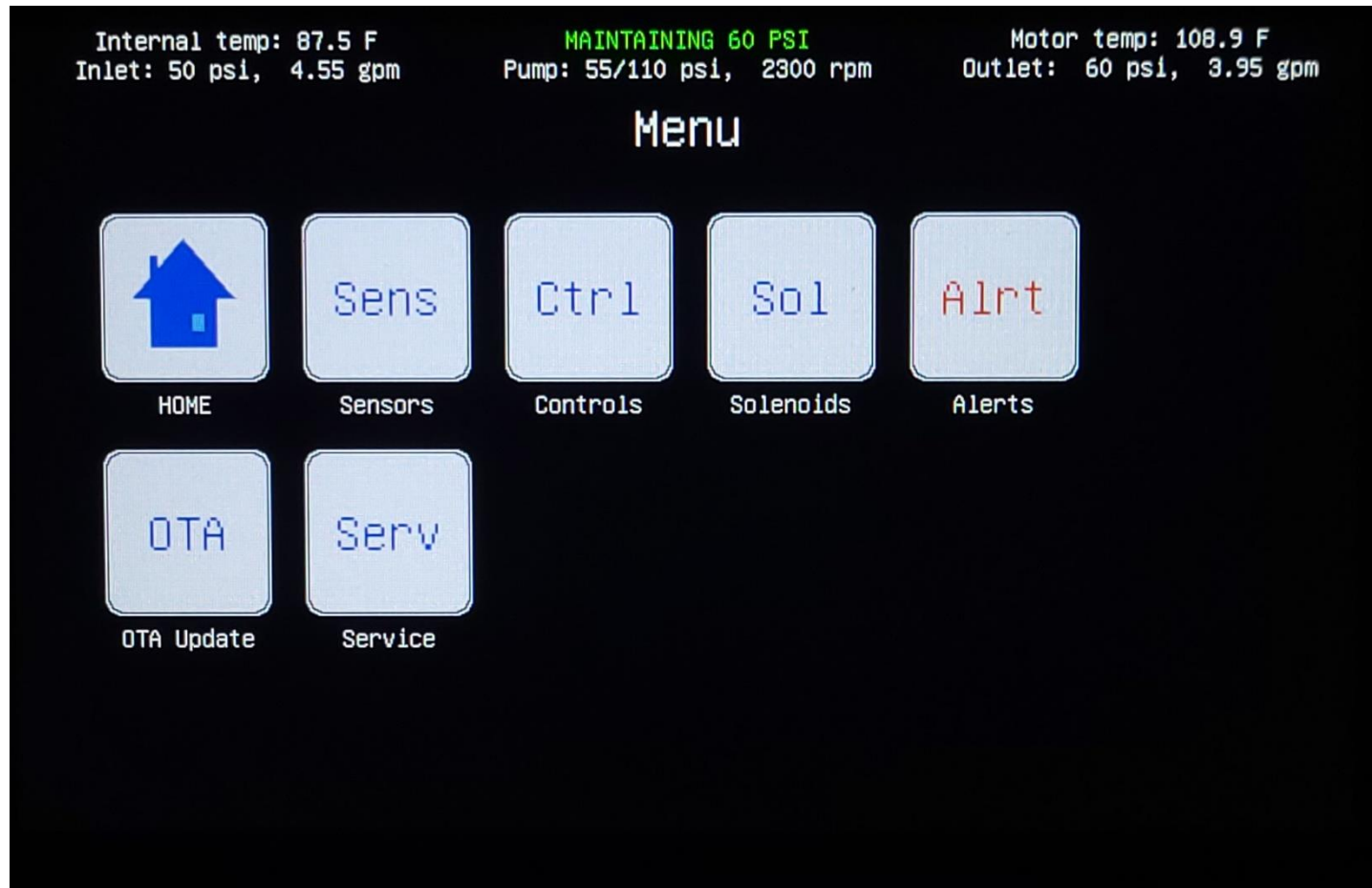
The top banner is universal across all screens and shows detailed operating data for the system.

Menu Screen

The menu screen is navigation hub which provides access to all sub-screens.



From the home screen, select menu.



The sensors, controls, and solenoids screens primarily used during maintenance & service.

Auto-Control Settings

To provide the user with the most flexibility to meet outlet demand, the module can be set to maintain either outlet pressure, outlet flow or a hybrid of pressure and flow.



From the home screen, select auto.

Maintain Pressure

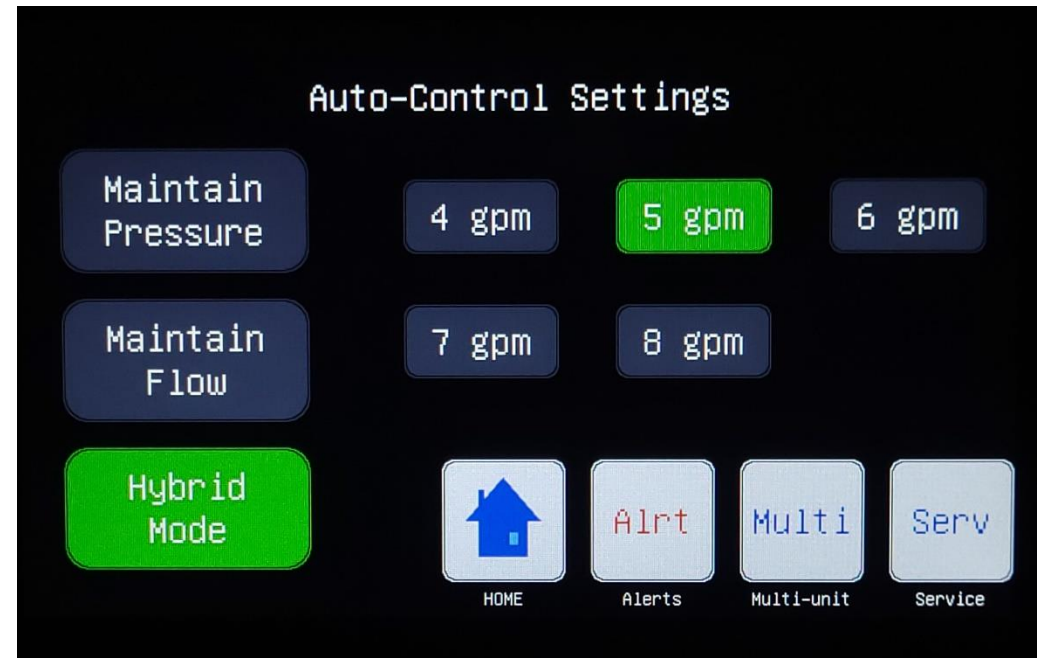
- Automatically maintain outlet pressure from 65 to 50 psi based on the outlet flow rate.

Maintain Flow

- Select and maintain the desired outlet flow rate when the outlet pressure is < 35 psi.

Hybrid Mode

- Select and maintain the desired outlet flow rate when the outlet pressure is < 35 psi.
- Automatically maintain outlet pressure from 65 to 50 psi based on the outlet flow rate when the outlet pressure is > 35 psi.



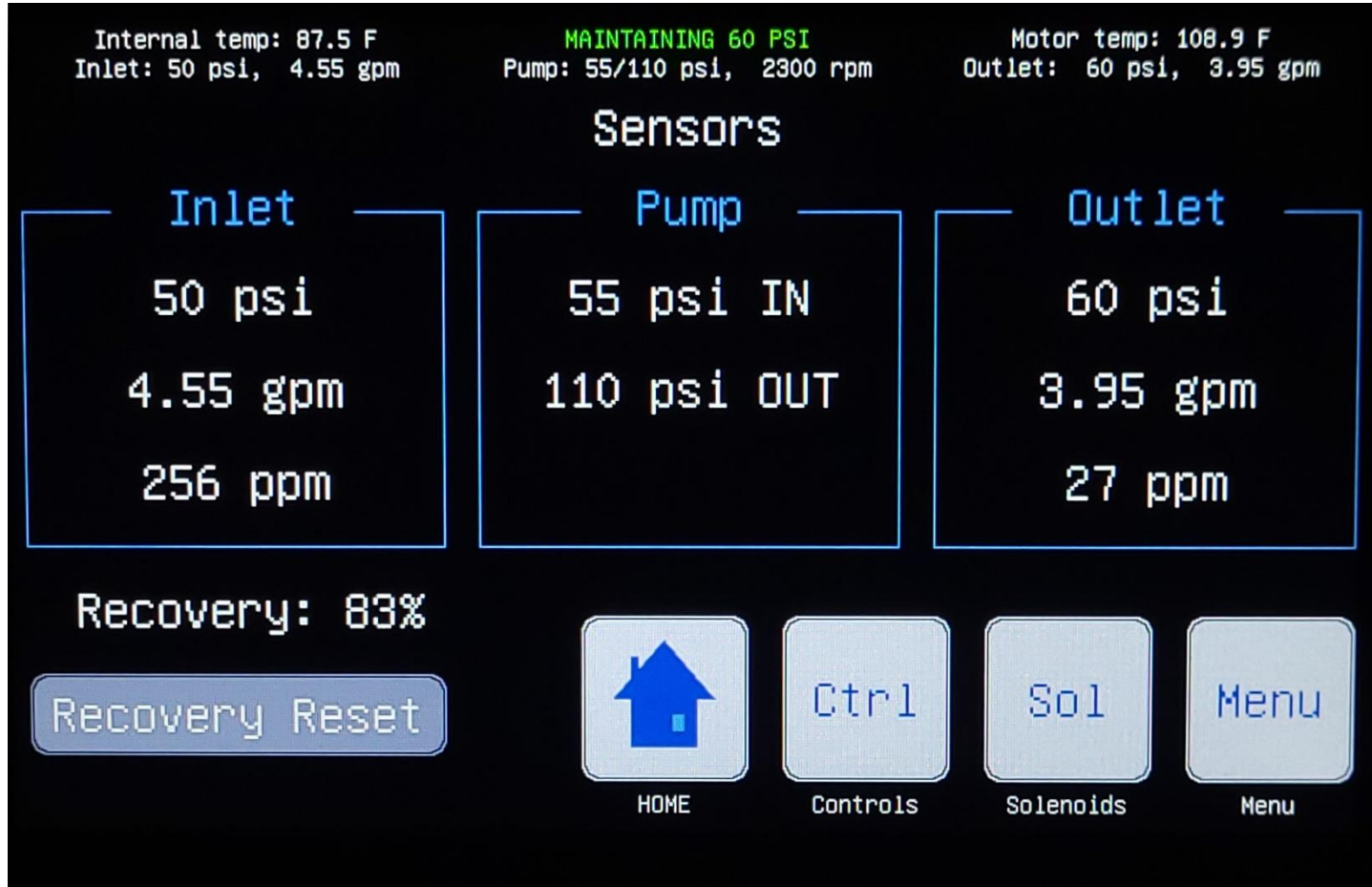
Hybrid mode is typically used for commercial applications.

Sensors Screen

The sensors screen provides detailed operational data for all the system sensors.



From the home screen, select sensors.



Recovery rate is a cumulative average since the last recovery reset. TDS readings are set to a default value of 100 after a reboot (power cycle) or software upgrade. TDS sensors require 90 seconds of continuous operation before providing a dynamic reading.

Controls Screen

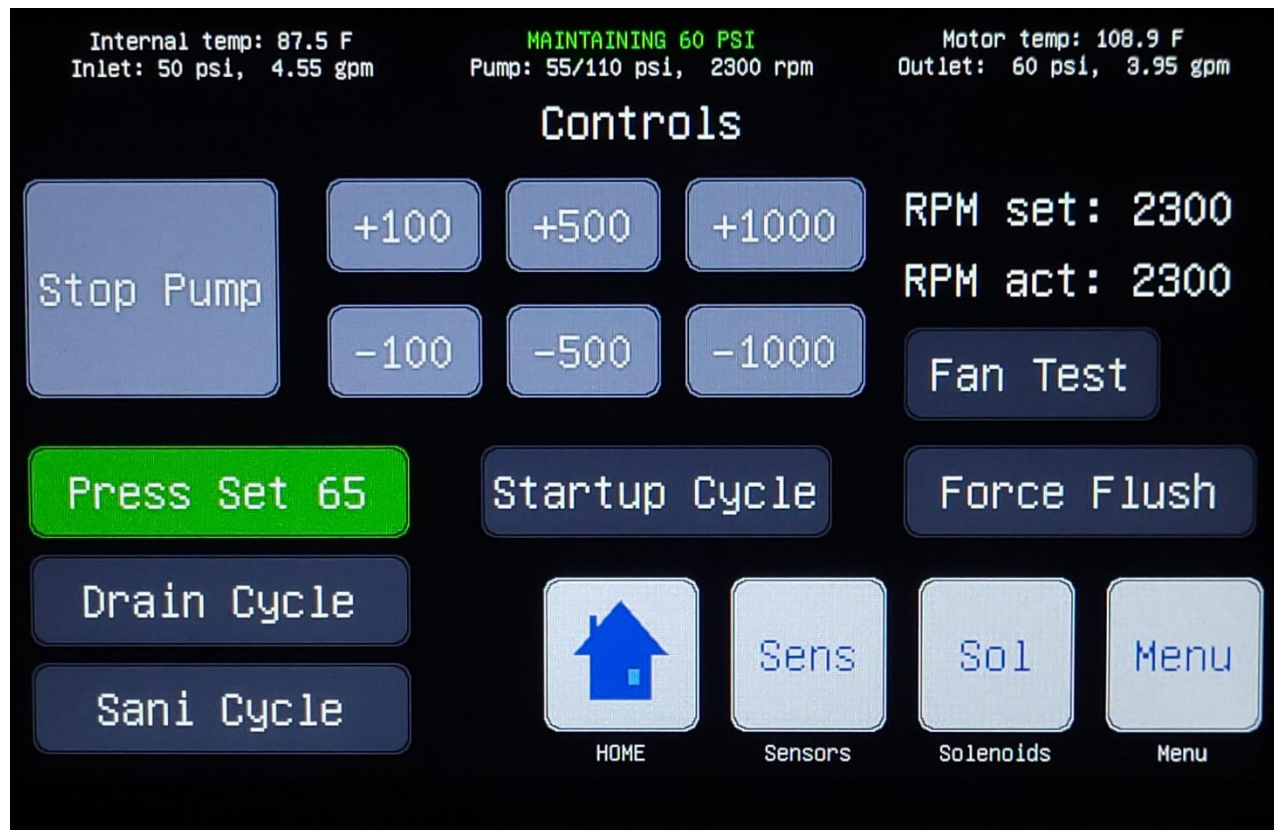
The controls screen provides manual/automatic pump control and allows the user to perform a drain cycle, sanitization (sani) cycle, forced (idle) flush, fan test, or start-up cycle.



From the home screen, select controls.



Only a qualified technician should operate the pump in manual mode.



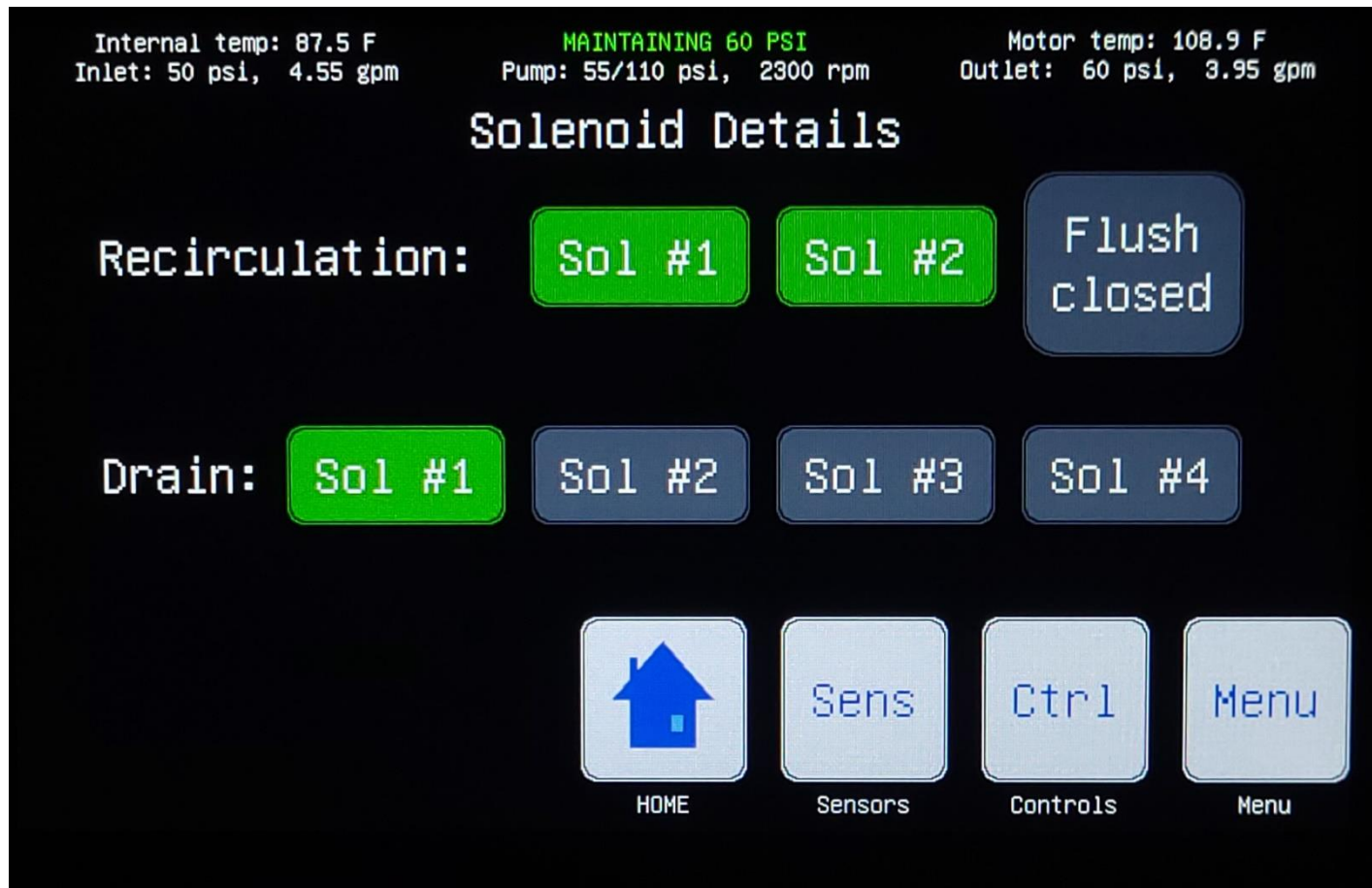
There is a 30 second delay to pump start-up after a system reset. During that delay, the controls screen offers the user the option to cancel automatic mode which will prevent the pump from starting.

Solenoids Screen

The solenoids screen provides a visual indication of which valves are open/closed during automatic operation while also providing the user with manual control of each solenoid when the system is in manual mode.



From the home screen, select menu, then solenoids.



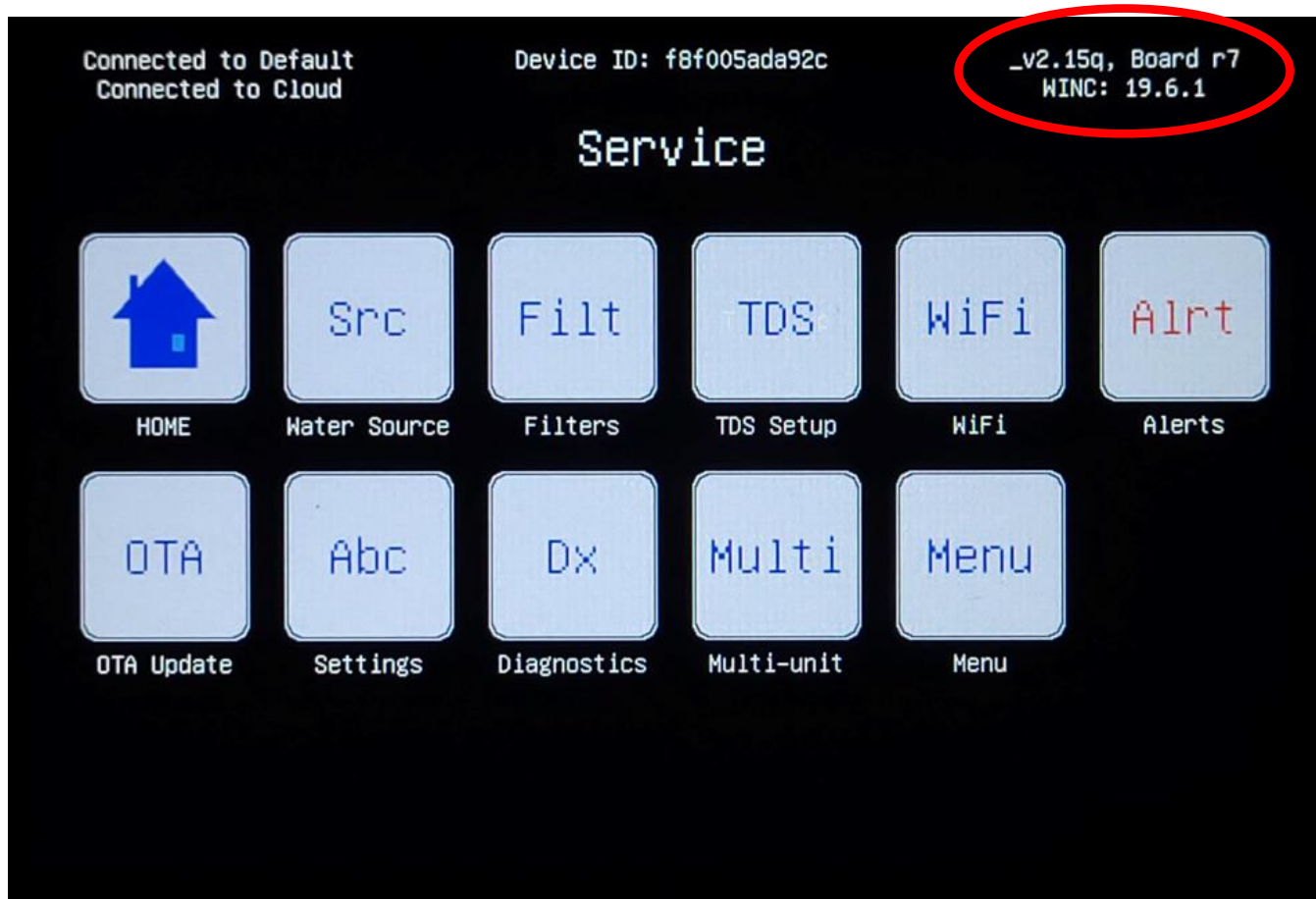
The system can only be placed into manual mode from the controls screen. A button highlighted in green indicates the valve is open.

Service Screen

The service screen provides access to advanced system settings.



From the home screen, select menu, then service.



The service screen is typically only used during installation and/or service & maintenance. The current software and control board versions are listed in the upper right corner.

Water Source Settings

Select the appropriate water source characteristics based on the **pre-installation water testing**. Filter capacities for the unit will be automatically calculated based on these user inputs.



From the home screen, select menu, then service, then water source.

Chlorine Configuration

Internal temp: 87.5 F **MAINTAINING 60 PSI** Motor temp: 108.9 F
Inlet: 50 psi, 4.55 gpm Pump: 55/110 psi, 2300 rpm Outlet: 60 psi, 3.95 gpm

Water Source

pH: 5.0-6.0 **6.0-6.8** 6.8 +

Hardness: 0 - 15 **15+**

Iron: 0-1 **1+** **VOC ON**

Treatment: **Chlorine** Chloramine

Conc: 0-2 ppm **2-4 ppm**

Serv
Service

Chloramine Configuration

Internal temp: 87.5 F **MAINTAINING 60 PSI** Motor temp: 108.9 F
Inlet: 50 psi, 4.55 gpm Pump: 55/110 psi, 2300 rpm Outlet: 60 psi, 3.95 gpm

Water Source

pH: 5.0-6.0 **6.0-6.8** 6.8 +

Hardness: 0 - 15 **15+**

Iron: 0-1 **1+** **VOC ON**

Treatment: Chlorine **Chloramine**

Conc: **<1** 1-1.5 1.5-2 2-3 3-4

Serv
Service



User has the option to enable filter capacity alerts for Volatile Organic Compounds (VOCs).

Filters Screen

The filter capacities are automatically calculated based on the water source settings. The element capacity is a fixed value based on the number of elements in the system.



From the home screen, select menu, then service, then filters.

Max Gallons

- Maximum filter capacity, in gallons, for each stage.

Total Used

- Total gallons through each stage.

Gallons Left

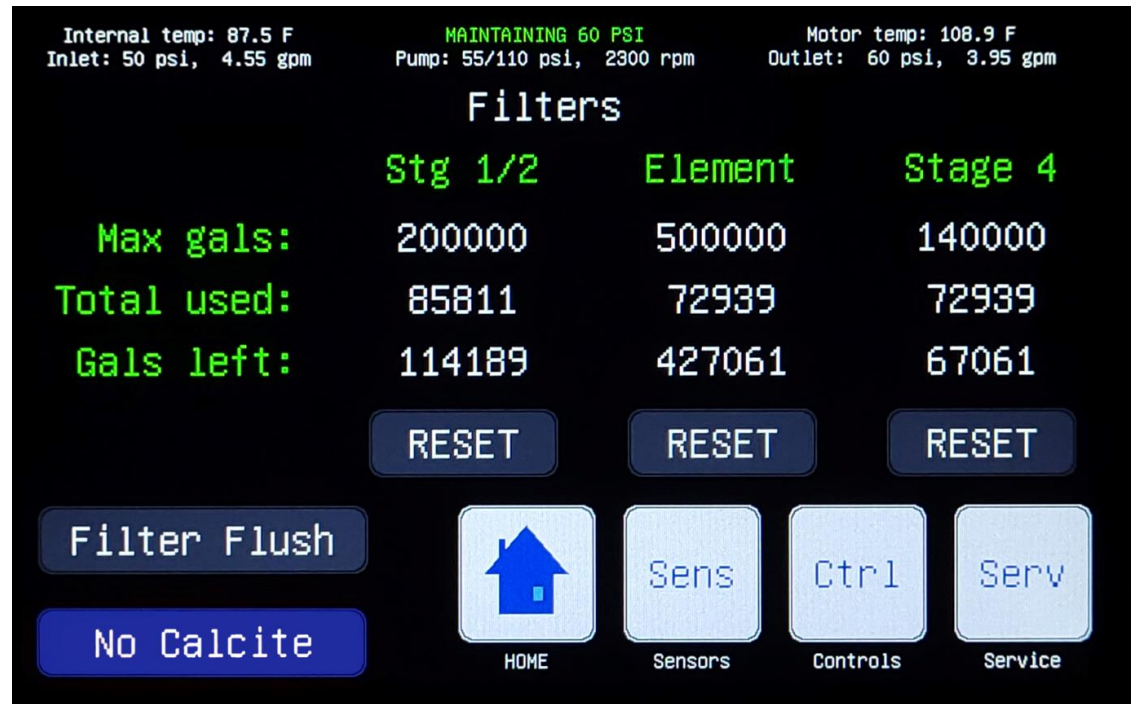
- Total gallons remaining for each stage.

Filter Flush

- A filter flush is performed when replacing filters during routine maintenance.

No Calcite

- For applications that do not require calcite filters. When activated, button will turn red, and the Stage 4 column is removed.



Filter capacity should be reset upon filter replacement by selecting the appropriate reset button for each stage. See the service manual (P/N 8920) for more details.

Filter Capacity

Filter capacity, or 'filter life', is a function of the inlet water characteristics. The filter capacity is calculated using the value which relates to most limiting characteristic of the inlet water. For example, if the inlet water has a hardness of 12 mg/L and an iron content of 1.6 ppm, the stage 1&2 capacity would be set at 100,000 gallons.

Hardness (mg/L)	Stage 1&2 Capacity (gallons)	Stage 4 Capacity (gallons)
0 – 15	200,000	Not Applicable
15 +	100,000	Not Applicable
Chlorine (ppm)	Stage 1&2 Capacity (gallons)	Stage 4 Capacity (gallons)
0 – 2	200,000	Not Applicable
2 – 4	125,000	Not Applicable
Chloramine (ppm)	Stage 1&2 Capacity (gallons)	Stage 4 Capacity (gallons)
0.5 – 1	180,000	Not Applicable
1 – 1.5	120,000	Not Applicable
1.5 - 2	90,000	Not Applicable
2 – 3	60,000	Not Applicable
3 – 4	45,000	Not Applicable
Iron (ppm)	Stage 1&2 Capacity (gallons)	Stage 4 Capacity (gallons)
0 – 1	200,000	Not Applicable
1 +	100,000	Not Applicable
pH	Stage 1&2 Capacity (gallons)	Stage 4 Capacity (gallons)
6.8 +	Not Applicable	140,000
6.0 – 6.8	Not Applicable	100,000
5.0 – 6.0	Not Applicable	60,000



Filter capacities for Stage 1&2 relate to inlet water, while the capacity for Stage 4 is related to outlet water.

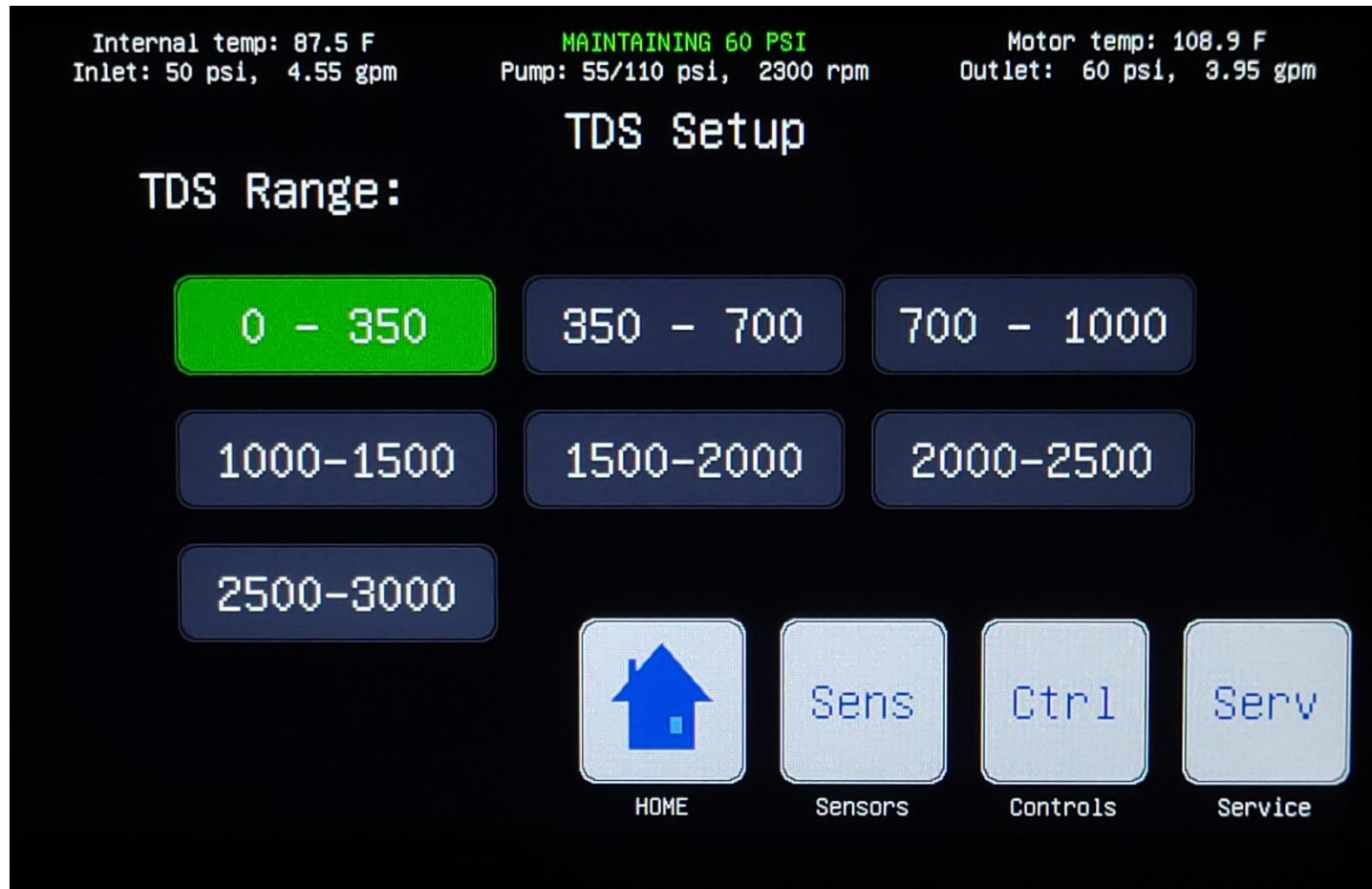
Inlet water usage will always be higher than outlet water produced. The difference between inlet and outlet water is related to the rejection rate, which is based on inlet water characteristics and user selected recovery rate.

TDS Settings

Set the TDS range based on the results of the pre-installation water testing.



From the home screen, select menu, then service, then TDS settings.



Model 2 screen shown. Model 2R maximum TDS range is 1000-1500.

Once the TDS range is set, the inlet TDS value will not go below the indicated minimum value of the range.

Basic System Settings

The system has various settings which are based on the individual application, customer preferences, and the relevant market.



From the home screen, select menu, then service, then settings.

Operating Amps

- Maximum current load (draw) for the system, based on the electrical supply circuit.

Recovery Mode

- High – increased recovery rate during operation.
- Standard – standard recovery rate during operation.

Display Units

- Imperial or metric depending on market.

Flush Interval

- Sets the frequency of the dormant flush to occur every hour or every four hours.



High Recovery is not available for inlet water with hardness above 15 mg/L or Iron above 1 ppm.

System Diagnostics

The diagnostics screen displays cumulative counts of any faults related to the various line items. This screen is typically used for service and/or troubleshooting.



From the home screen, select menu, then service, then diagnostics.

Recovery Flush

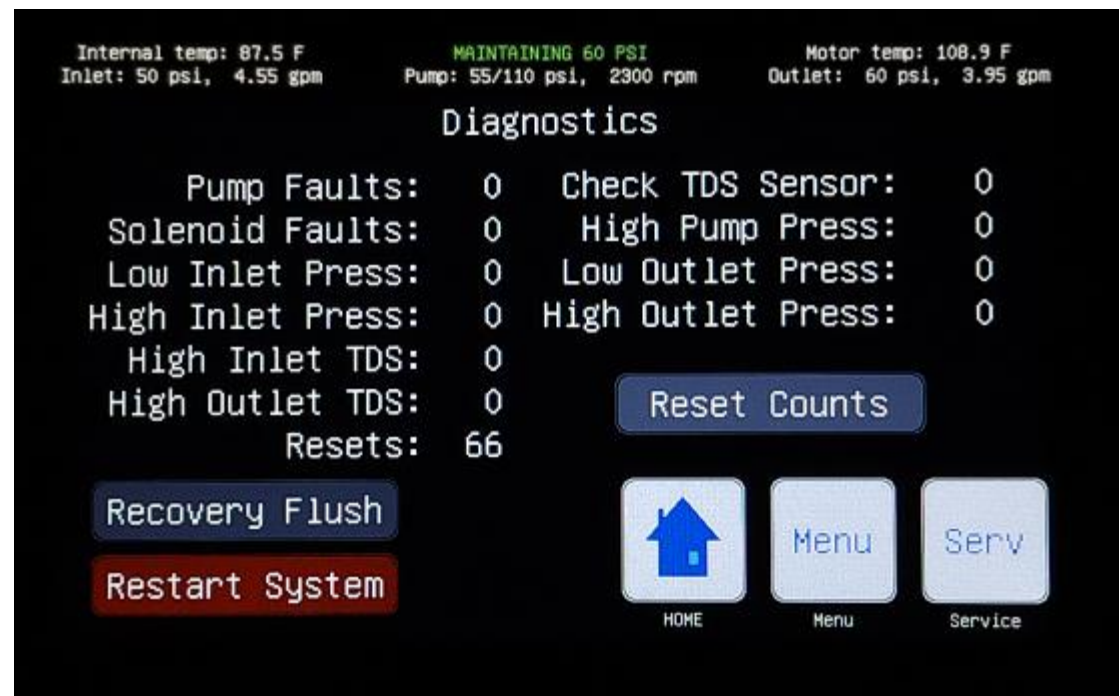
- 5-minute flush to drain for situations that require increased flush time.

Reset Counts

- Reset total fault counts to zero for all line items.

Restart System

- Reboot system manually.



Pressing the 'restart system' button will produce a secondary confirmation window. The user may then select 'cancel' or 'restart'. A restart is not the same as a power cycle. If a power cycle is required, the system must be unplugged from the power source.

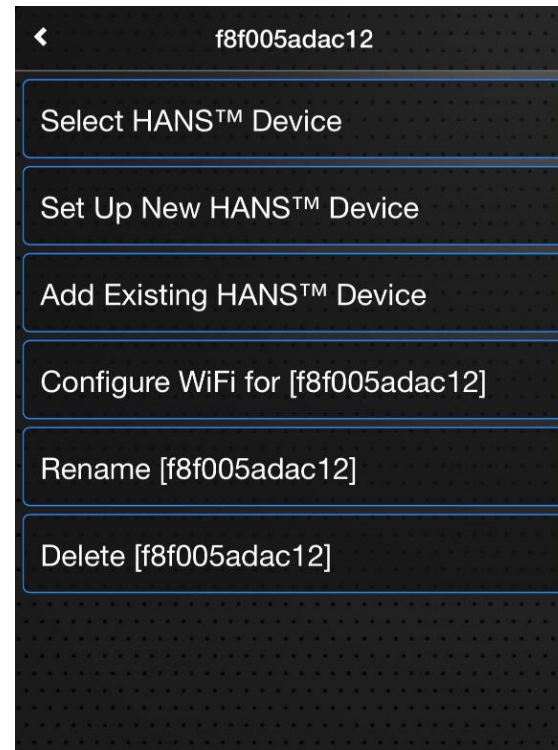
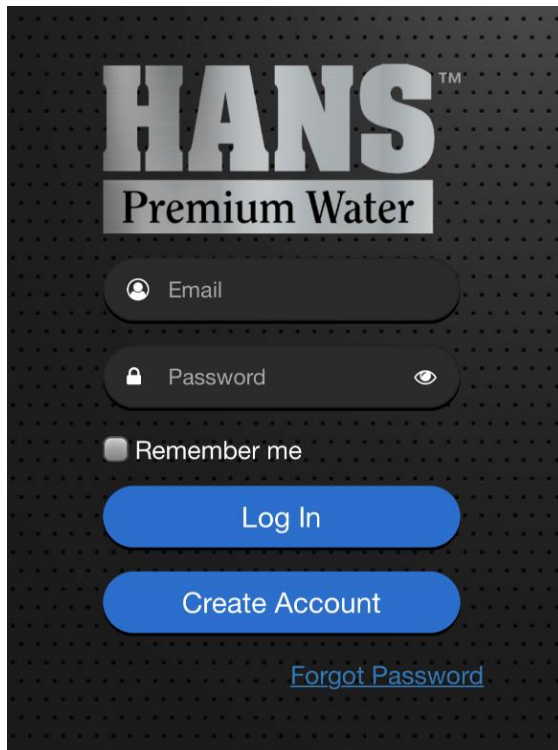
Wi-Fi Set-up

Configure the on-board Wi-Fi capability using the smart phone application.



Download the HANS Premium Water – Model 2 Application for your iOS or Android device.

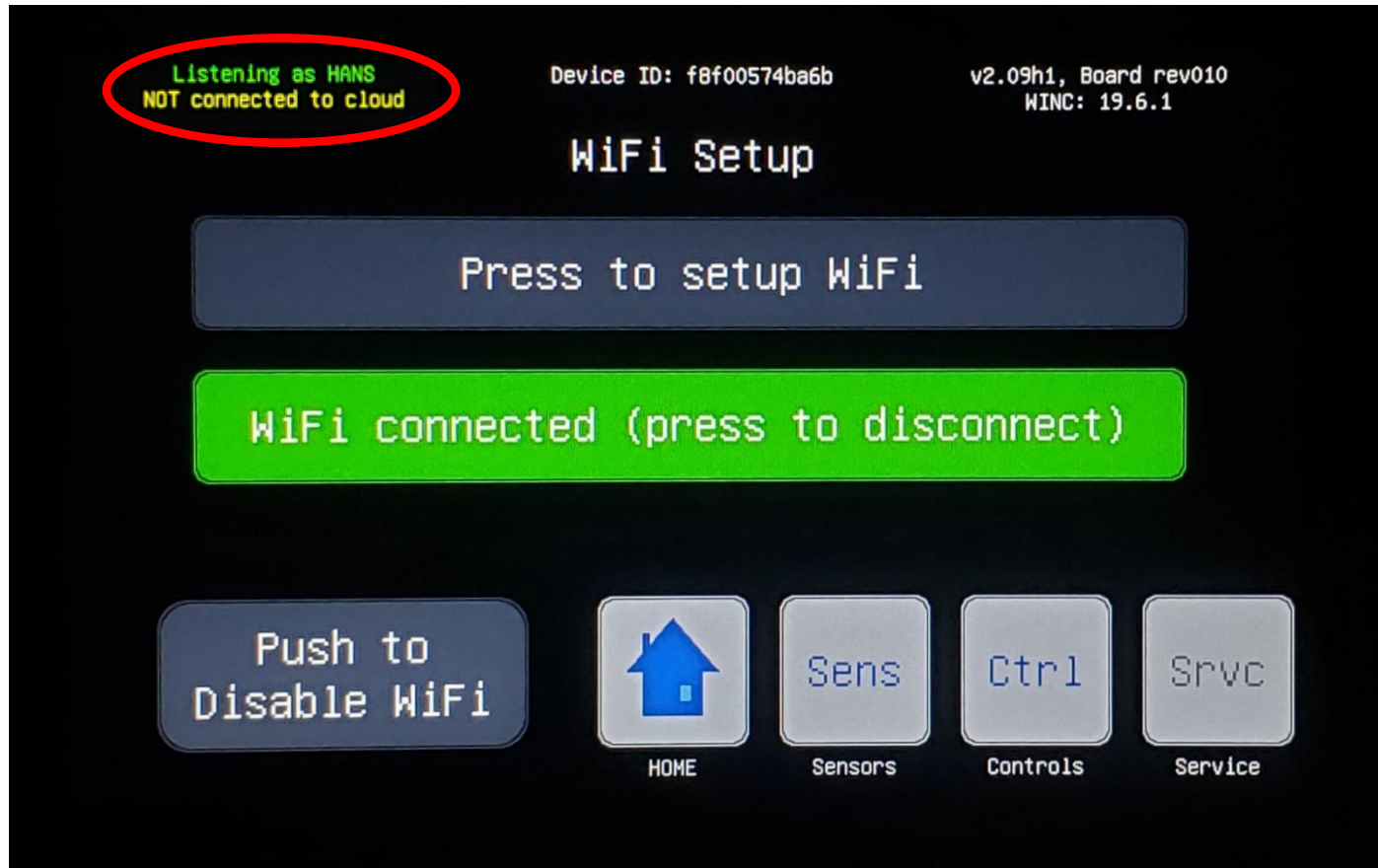
1. If you're a first-time user, create an account.
2. Once logged-in, select 'Set Up New HANS Device'.
3. The app will direct the user to initialize Wi-Fi set-up on the HANS unit.



Wi-Fi Set-up (continued)

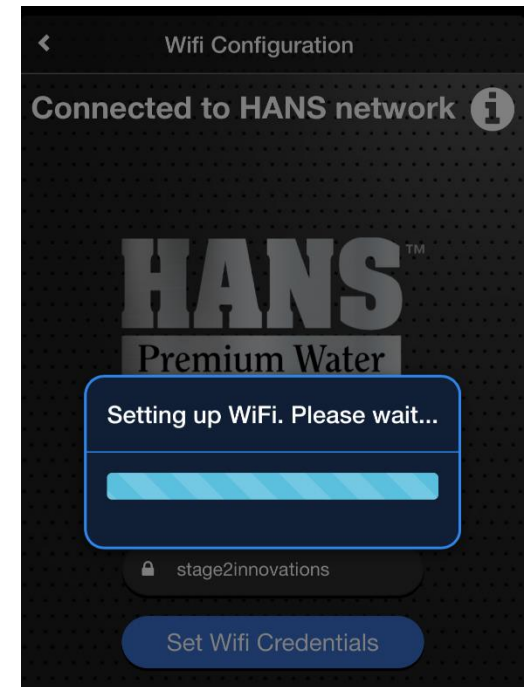
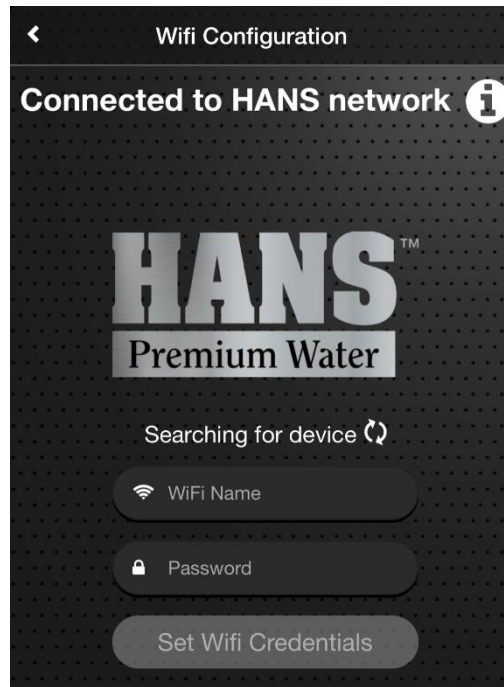
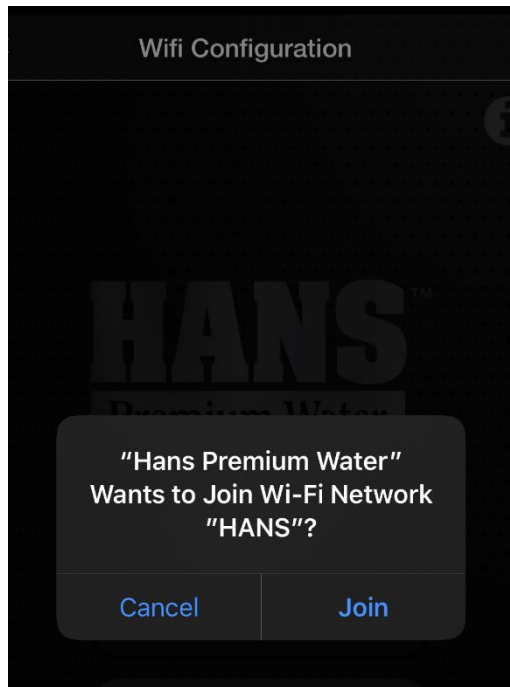


4. From the home screen of the HANS unit, select menu, then service, then 'Press to setup Wi-Fi'.
5. With the Wi-Fi Set-up initialized, the upper left corner of the screen will show 'Listening as HANS'



Wi-Fi Set-up (continued)

6. Join the 'HANS' Wi-Fi Network
7. Enter the Wi-Fi router name and password.
8. Verify connection to router and to cloud in the upper left corner of the HANS unit screen.



If properly connected to the router and cloud, the upper left corner of the screen will read:

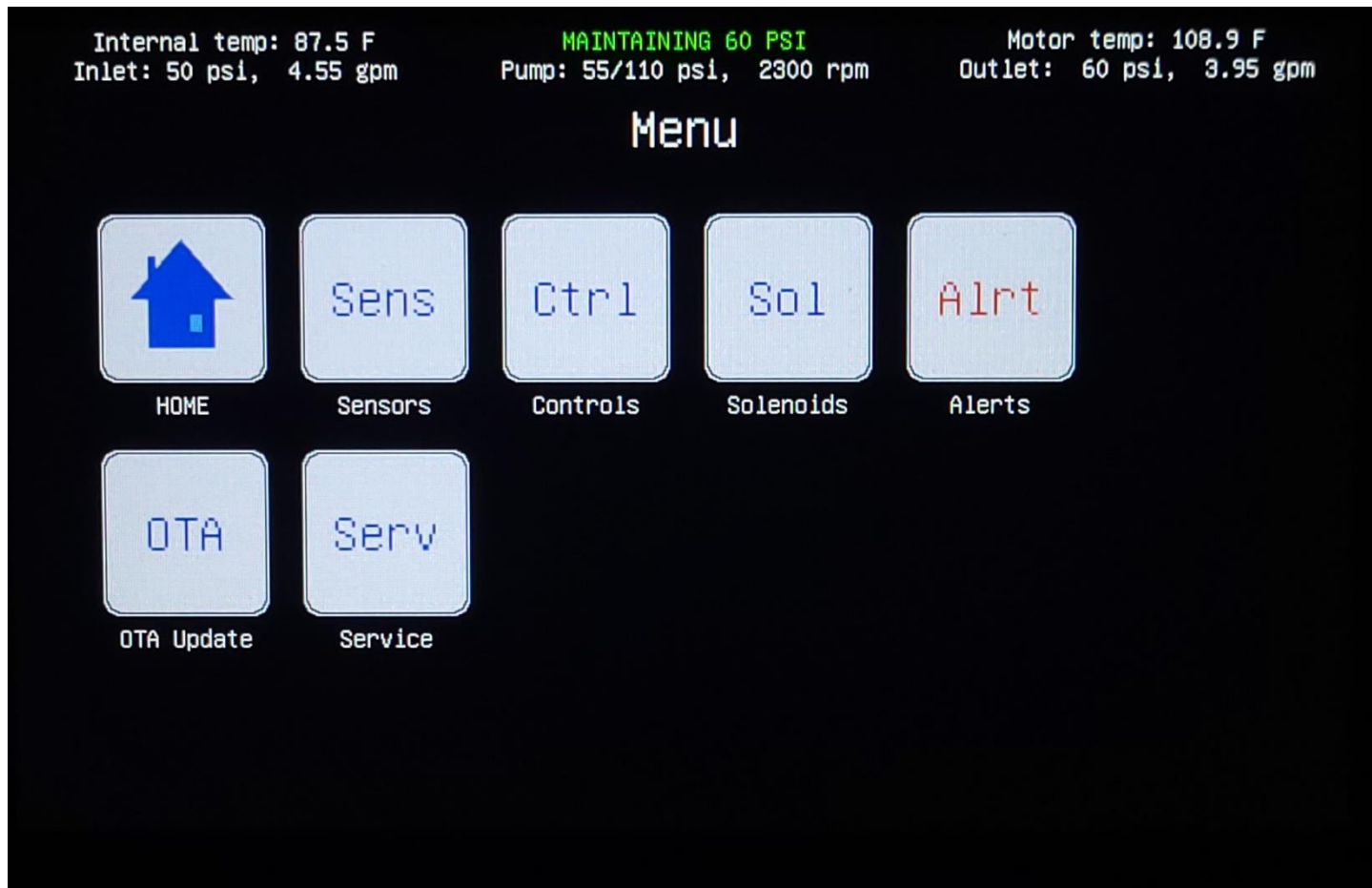
'Connected to router_name'
'Connected to cloud'

Software Updates

When connected to Wi-Fi and the cloud, the system can automatically download and install software updates with the push of a button.



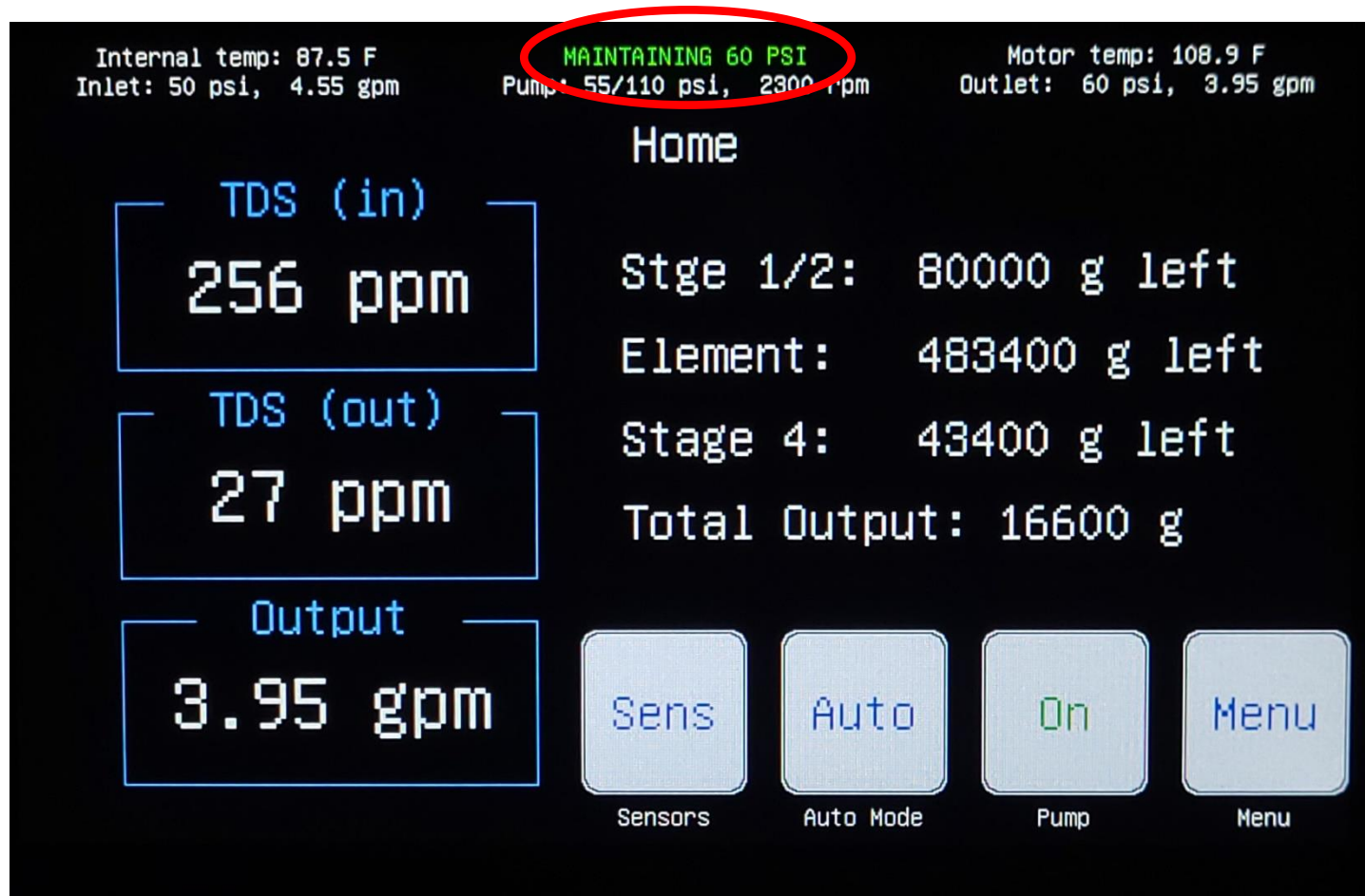
From the home screen, select menu, then OTA Update.



OTA is an acronym for over-the-air. Pressing the OTA button will produce a secondary confirmation window. The user may then select 'cancel' or 'upgrade'.

Operational States

The system has several operational states based on inputs, user selections, or system faults. The operational state is displayed at the center of the screen banner.



The top banner is universal across all screens and shows detailed operating data for the system.

Operational States (continued)

The following table lists all the operational states, along with a brief description of each.

Operational State	Description
24-Hour Flush	<p>A 24-hour flush occurs once the system has been in an idle state (no outlet flow) for twenty-four (24) consecutive hours.</p> <p>This is an automatic operation which does not require any additional action.</p>
Dormant Flush	<p>A dormant flush occurs once the system has been in an idle state (no outlet flow) for one (1) or four (4) consecutive hours, based on the system settings.</p> <p>This is an automatic operation which does not require any additional action.</p>
Drain Cycle	<p>The drain cycle opens all drain valves along with the flush valve and is used to drain the system during service and/or maintenance.</p> <p>This operation is typically performed by a qualified technician</p>
Filter Flush	<p>The filter flush cycle is intended to be used after replacing filters during routine maintenance. It is designed to flush the air from the filters and prepare the system for normal operation.</p> <p>This operation is typically performed by a qualified technician</p>
High Inlet Pressure Dump	<p>A high inlet pressure dump opens the drain valves for 3 seconds in order to relieve excessive (above 85 psi) internal or external pressure.</p> <p>This is an automatic operation which will occur repeatedly if the inlet pressure is above the system specifications.</p>
High Outlet Pressure Shutdown	<p>The high outlet pressure shutdown turns off the pump and opens the drain valves to release excessive internal pressure.</p> <p>This is an automatic operation which will remain in effect until the outlet pressure is below 70 psi.</p>

Operational States (continued)

Operational State	Description
Idle Flush	<p>An idle flush occurs once the system enters an idle state (no outlet flow) following 30 minutes of cumulative operation since the last flush.</p> <p>This is an automatic operation which does not require any additional action.</p>
Low Inlet Pressure Shutdown	<p>A low inlet pressure shutdown occurs when the inlet pressure is below 8 PSI for more than 5 continuous seconds or below 1 PSI for 1 second.</p> <p>This is an automatic operation which will remain in effect until the inlet pressure is above 30 PSI for 20 seconds continuously.</p>
Low Pump-Inlet Pressure Stage 1 - 4	<p>The low pump inlet pressure states occur when the pump inlet pressure drops below the required level for proper operation. There are four (4) stages which limit the pump motor speed to various levels depending on the input pressure. These states allow the unit to continue operating at lower input pressures.</p> <p>This is an automatic operation which will remain in effect until the pump inlet pressure is above 30 PSI.</p>
Maintaining 50 – 65 psi	<p>Maintaining pressure is the default operating state for the system. In this state, the system is maintaining a specific outlet pressure. This pressure is based on the outlet flow rate. For lower outlet flow rates, the maintained pressure is higher.</p> <p>This is an automatic operation and indicates the system is running normally.</p>
Maintaining 4 – 8 gpm	<p>Maintaining flow is an optional operational setting for the system. In this state, the system is maintaining a specific output flow. This is typically used for systems feeding atmospheric tanks.</p> <p>Once the setting is made, this is an automatic operation.</p>
Maintaining (Hybrid)	<p>Maintaining hybrid, or hybrid mode, is an optional operational setting for the system. In this state, the system is maintaining pressure but is flow limited, based on the user selection, when the outlet pressure drops below 35 psi. This is typically used for commercial applications.</p> <p>Once the setting is made, this is an automatic operation.</p>

Operational States (continued)

Operational State	Description
Manual Mode	<p>Manual mode allows the system to be operated manually.</p> <p>This is a manual operation and should only be performed by a qualified technician.</p>
Motor Fault Shutdown	<p>A motor fault shutdown occurs when the system has experienced a critical fault related to the operation of the pump motor.</p> <p>This is an automatic operation which may require a power cycle or evaluation by a qualified technician.</p>
Outlet Over-Pressure	<p>When the system is set to maintain outlet flow and the outlet pressure rises above 35 psi. The system will remain in this state until the outlet pressure drops below the 35-psi threshold.</p>
Outlet TDS Flush	<p>An outlet TDS flush occurs when the outlet TDS is > 25% of the inlet TDS or the outlet TDS is > 500 ppm. The flush will continue until the outlet TDS is < 20% of the inlet TDS or the outlet TDS is < 500 ppm.</p>
Running Flush	<p>A running flush occurs when the system has been continuously operating (continuous pump on) for more than 30 to 60 minutes, depending on the inlet water TDS.</p> <p>This is an automatic operation which does not require any additional action.</p>
Start-up Cycle	<p>The start-up cycle is an automatic operation used during initial start-up only.</p> <p>This operation should only be performed by a qualified technician.</p>
Sani-Cycle	<p>The sani-cycle is a manual operation used only during full system sanitization.</p> <p>This operation should only be performed by a qualified technician.</p>

Warnings / Alerts

The alerts screen displays any active alerts or warnings.



From the home screen, select menu, then alerts.



The banner for the alerts screen is unique in that it displays Wi-Fi connectivity, device ID, and electronic hardware information.

Warnings / Alerts (continued)

The following table lists the possible warnings / alerts that may appear and provides a description / potential solution. The top left corner of the universal banner on the display screen will read **'Check alerts'** when there is an active alert present. The message will remain on the banner and the alert will remain on the alerts screen until the condition no longer exists. *To view details of any active warning or alert(s), go to the **Alerts ('Alert')** screen.*

These warnings / alerts will also be pushed to the HANS Premium Water – Model 2 mobile app. at various intervals to remind the user of any active alert states.

Warning / Alert	Alert Message	Description / Solution
Brown out power fault	Brown-out power fault. Perform power cycle.	A brown-out, or interruption in the power supplied to the system, has caused a fault. Unplug the system the power source, wait 60 seconds, then reconnect the system to power.
Disconnected from cloud	Disconnected from cloud	The system has lost connection with the cloud. Often this is due to a temporary interruption in the WiFi network. If the problem persists, check the modem and/or router to confirm a reliable connection to the internet.
Drain valve fault	Check drain solenoid #1-4.	The system has detected a fault in one of the drain solenoids. Check the drain solenoid indicated to ensure it is functioning properly.
Ebox over-temp shutdown	E-box over-temp shutdown.	The system has detected an elevated temperature in the electronics box (e-box). The system will automatically resume operation when temperature has normalized.
Element 10% life remaining	Element has <10% life remaining.	This message serves as a reminder to schedule your regular system maintenance.
Element expired	Elements have EXPIRED. Replace Elements!	Using an expired element affects the overall cleanliness of the output water. Please service the RO element right away to keep your water as clean as possible.

Warnings / Alerts (continued)

Warning / Alert	Alert Message	Description / Solution
High inlet pressure	Water inlet pressure is too high.	Check the inlet water supply (water being fed to the system) and make sure the pressure is not over 60 psi. If the inlet pressure is above 60 psi, a pressure regulating valve (PRV) will need to be installed. If you have a well, check for proper pressure in the well tank, make sure that the well pump pressure switch is properly suited for this application (i.e. 40-60 psi).
High inlet TDS	Elevated Inlet TDS.	The system is not designed to handle inlet water TDS above 3000 (1500 TDS for Model 2R). Confirm that the inlet water TDS is below 3000. If so, replace the inlet TDS sensor and confirm the inlet water TDS settings under the service screen.
High outlet pressure	Outlet pressure too high. Pump will be start when pressure <70 psi.	The system is designed to prevent over-pressurization by prevent pump operation when the outlet pressure is above 80 psi.
High output TDS	Elevated Outlet TDS.	Outlet TDS is above 500 or the outlet TDS is greater than 25% of the inlet TDS. If the outlet TDS is above this threshold the system with continue to operate but in an active alert state.
High pump pressure shutdown	High pump pressure shutdown.	The pressure from the pump is too high, and the pump has now shut off. Check to make sure that your Stage 3 element is not blocked.
Low inlet pressure shutdown	Water inlet pressure is too low.	Check the inlet water supply (water being fed to the system) and make sure any necessary valves leading to the system are open. Make sure the inlet water is not leaking. If you have a well, check for proper pressure in the well tank, making sure that the circuit breaker on the well pump is switched on. Ensure water is flowing through the well pump properly. Ensure you have a 40/60 well tank pressure switch. Set the minimum bound of the switch to 45 psi for best performance.
Low outlet pressure	Low outlet pressure. Check outlet pressure sensor.	A low outlet pressure shutdown will occur when the outlet pressure reads 0 psi. The unit will automatically shut down and remain in this state until outlet pressure is restored for a minimum of 30 seconds. This may be caused by a failure in the outlet pressure sensor or an issue downstream from the unit.

Warnings / Alerts (continued)

Warning / Alert	Alert Message	Description / Solution
Low pump inlet pressure shutdown	Low pump inlet pressure shutdown.	The pressure at the inlet to the pump is too low and the system has shutdown. Check the Stage 1&2 filters to ensure there is no blockage. Replace Stage 1&2 filters, if necessary.
Low outlet pressure	Low outlet pressure. Check outlet pressure sensor.	A low outlet pressure shutdown will occur when the outlet pressure reads 0 psi. The unit will automatically shut down and remain in this state until outlet pressure is restored for a minimum of 30 seconds. This may be caused by a failure in the outlet pressure sensor or an issue downstream from the unit.
Motor over-temp shutdown	Pump motor is over temp. In shutdown.	The pump motor has over-heated, check to make sure the motor fans are plugged in and operating properly. Ensure that nothing is blocking the vents in the side panels.
Motor thermistor fault	Motor thermistor fault, RPMs limited. Contact Service.	The pump motor thermistor has a fault. The pump speed will be limited to 2,800 RPMs and system performance may be reduced. Contact service to determine if the pump needs to be replaced.
Outlet pressure sensor fault	Outlet pressure sensor fault. Check sensor.	The outlet pressure sensor is not providing a reading. Check the wire harness connection to the sensor. Replace the sensor, if necessary.
Pump motor controller shutdown	Pump motor controller fault. In shutdown.	The pump motor controller is not responding. Perform a power cycle by unplugging the unit from the wall, wait 60 seconds, then plug the unit back in. If this does not resolve the issue, replace the e-box.
Pump speed fault shutdown	Pump speed fault. In shutdown.	The pump speed is not as expected. Perform a power cycle by unplugging the unit from the power source, wait 60 seconds, then reconnect the system to power. If this does not resolve the issue, replace the pump.
Solenoid driver fault	Solenoid driver fault.	There is an issue with the internal solenoid driver. . Perform a power cycle by unplugging the unit from the power source, wait 60 seconds, then reconnect the system to power. If this does not resolve the issue, replace the e-box.

Warnings / Alerts (continued)

Warning / Alert	Alert Message	Description / Solution
Stage 1&2 10% life remaining	Stage 1/2 filters have <10% life remaining. Replace soon!	This message serves as a reminder to schedule your regular system maintenance.
Stage 1&2 expired	Stage 1/2 filters have EXPIRED - Replace filters!	Using an expired filters affects the overall cleanliness of the output water and can damage the Elements. Please replace the Stage 1 & 2 filters right away to keep your water as clean as possible.
Stage 1&2 pressure drop	Elevated Pressure Drop - Check Stage 1 & 2 filters.	The system will continue to operate normally, however, the pressure drop across Stage 1&2 is higher than expected. This may indicate a blockage or premature fouling of the filters. Check the Stage 1&2 filters. Replace the Stage 1&2 filters, if necessary.
Stage 4 10% percent remaining	Stage 4 filter has <10% life remaining. Replace soon!	This message serves as a reminder to schedule your regular system maintenance.
Stage 4 expired	Stage 4 filter has EXPIRED - Replace filter!	Using an expired filter affects the overall acidity of the output water. Please replace the Stage 4 filter right away to keep your water as balanced as possible.
VOC 10% remaining	VOC capacity has 10% remaining	This message serves as a reminder that the system has 10% VOC capacity remaining.
VOC expired	VOC capacity reached	This message serves as a reminder that the system has reached it's VOC capacity. This alert is only active if the 'VOC ON' button is green under the water source settings screen.
Zero rejection mitigation	Zero rejection mitigation – check drain manifold.	The system has detected zero rejection at the previous TDS setting and automatically increased the TDS range to prevent membrane fouling. Check the drain manifold to ensure it is functioning properly, then adjust the TDS range back to the original setting to clear the alert.

Troubleshooting

1. Display screen will not turn on

- ✓ Confirm the power supply is properly connected at the rear of the machine and the base of the e-box.
- ✓ If power supply is properly connected, perform a power cycle by disconnecting the unit from the power supply, wait 30 seconds, and reconnect power. If a power cycle does not fix the issue, replace the e-box (refer to the Service & Maintenance manual P/N 8920).

2. Pump will not run

- ✓ Confirm the pump wire harness is properly connected to the side of the e-box.
- ✓ Confirm the system shows a minimum of 30 psi inlet pressure.
- ✓ If an audible beeping noise is heard from the e-box, perform a system restart (see page 29) . If a system restart does not fix the issue, replace the e-box (refer to the Service & Maintenance manual P/N 8920).

3. Low inlet pressure

- ✓ Confirm inlet water supply has been restored.
- ✓ If pressure is present in the system and the inlet pressure sensor is reading 0 psi, replace the sensor.

4. Wi-Fi will not connect

- ✓ Ensure a strong Wi-Fi signal is present from the router. A range extender may be required in certain areas where the signal may not be reliable.

5. TDS values are not changing

- ✓ TDS sensors require 90 seconds of continuous operation before providing a dynamic reading.
- ✓ If a TDS value is well outside the expected range (based on pre-installation water testing), replace the sensor.

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Model 2 / Model 2R Owner's Manual