

Automated Control Panel User Guide



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Rainman Technology Pty Ltd
49 Orchard Road
Brookvale, NSW 2100
Australia

www.rainmandesal.com

support@rainmandesal.com

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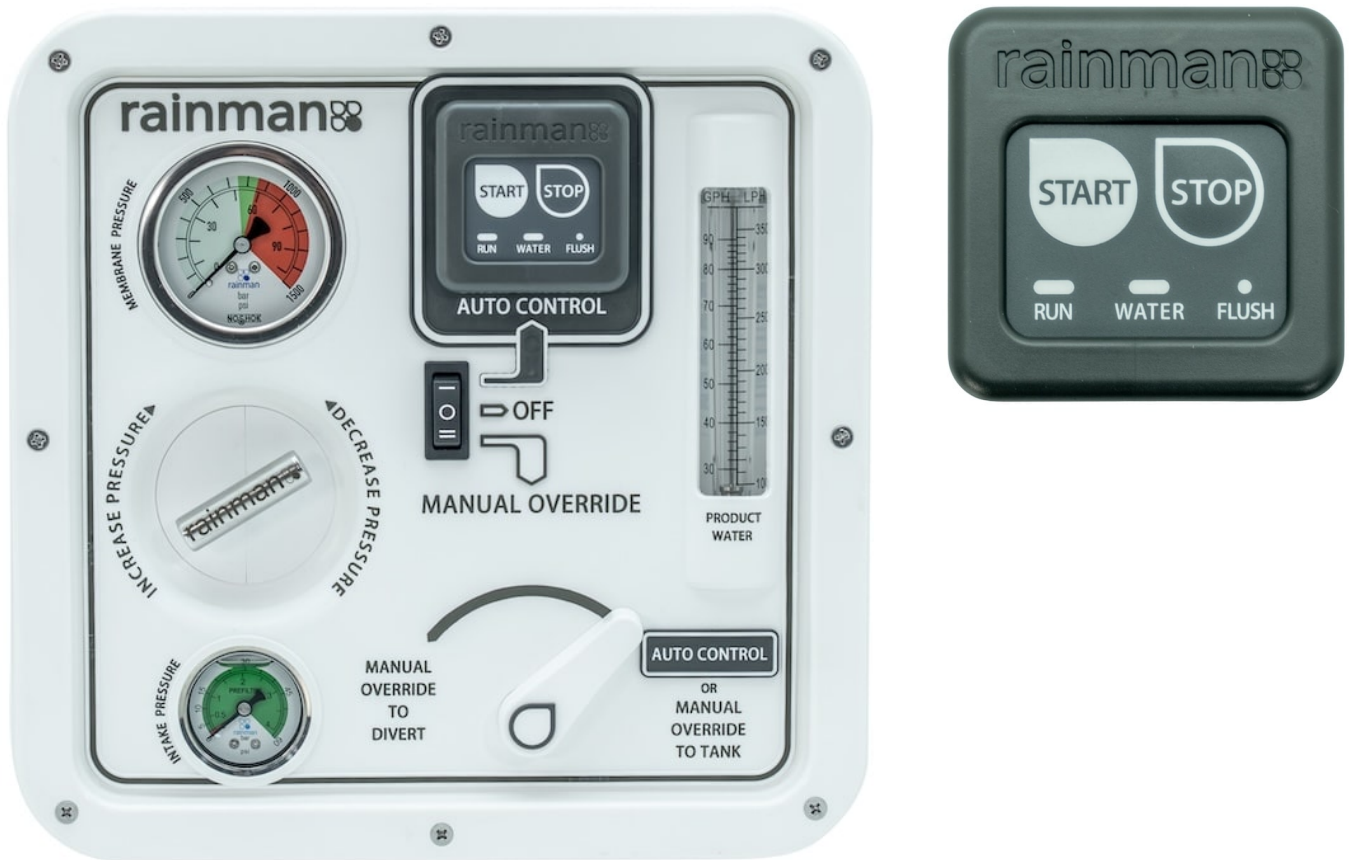
Introduction

The Rainman fully automated control panel provides the maximum amount of convenience in operating any AC electric Rainman watermaker. It offers push button remote control and bluetooth connected phone/tablet app for monitoring and control of the system. This includes pressure control, full tank sensor, timer functions, brackish water algorithms and autoflush.

The system can be used for either brand new Rainman installations, retrofitting existing installs, or upgrading an existing manual control panel. It can be incorporated into a framed watermaker, added to a modular system, or even installed into a modified portable Rainman.

This guide supplements the general operation and installation manuals. It is highly recommended that you study this entire manual before planning and executing your auto control panel installation.

The main panel and the remote micropanel is made of durable injection moulded UV resistant, ASA acrylic.



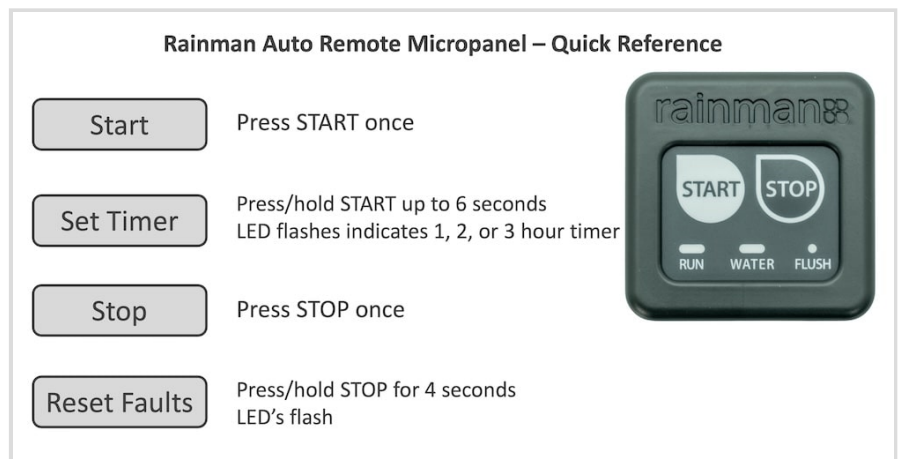
Operation

Micropanel – Buttons

The system will have two identical micropanels. One is on the main control panel and one is a wired remote micropanel for controlling the system away from the watermaker.

Quick Reference Operation

Four main operations can be performed from a micropanel.



Make Water

Press the START button once to begin making water.

The pressure supply unit will start immediately. Then the pressure will slowly build up to either 55 bar (800 psi) or the correct flow rate if in fresh or brackish water. Once adequate water quality is achieved, the solenoid divert valve will direct water into your tank.

Shut Down

Press STOP button once to perform orderly shutdown of the Rainman.

The solenoid divert valve will direct product water to waste. Then the pressure will slowly decrease and the pressure supply unit will switch off when pressure is almost zero. After a short wait, the autoflush solenoid cycle will begin. After the autoflush cycle completes, the flush timer will set for seven days. If the watermaker has not run within those seven days, the system will automatically flush and reset the timer for another seven days.

Set Run Timer

The timer can be set from the micropanel for one, two or three hours operation. Press and hold the START button for a few seconds. After two seconds, the LED's will flash once. Release the START button after this flash to set timer for one hour. Similarly, release after four seconds (two flashes) for a two hour timer set, or after six seconds (three flashes) for three hour timer set.

The Rainman will start up and then shutdown after the timer is complete, followed by normal autoflush procedure.

Reset Faults

If the system has gone into a fault condition, resolve the underlying issue causing the fault. You can then press and hold the STOP button for four seconds. The LED's will flash and then the fault condition will be reset. The system is ready to operate again.

Micropanel – LED Status

The micropanel has three LED's that are used for normal operation system status or indicating various fault conditions. Below is a reference of sequences and their meaning. The RUN and WATER indicators are tricolour LED's that can be red, amber, or green, while the FLUSH LED is only blue.

Run Water Flush

			System off
			Ready to operate
			Making water – Divert
			Making water – Tank
			Shutting Down
			Fresh water flushing

✓ Expand for LED Warning and Fault Sequences

Quick Reference Card

A pdf of the quick reference operations can be downloaded for offline reference.

 **Quick Reference Card – Auto Control Panel(0.2MB)**

Phone / Tablet App

The system can be controlled and monitored by a phone / tablet app. Download the app from your iOS/Android app store, searching for “RainmanDesal”. The app will be used to connect to the watermaker and configure the automation to your system. See the installation section below for this.

While it is not mandatory to use the app for control and monitoring of your system on a day to day basis, it will be helpful in that more information can be relayed to the user than the three LED’s in the wired micropanel. We recommend staying familiar with the app to monitor the healthy operation of the watermaker.

Control

This screen is used to control the operation of the watermaker.

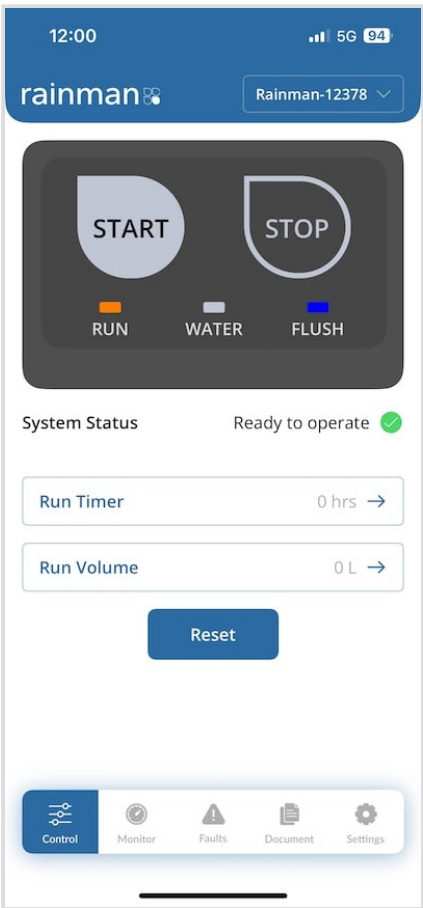
Start watermaker – Press the START button on the Control screen. The watermaker will run indefinitely.

Set run timer – Use “Run Timer” selection to choose 1, 2, or 3 hours, then press START button. The watermaker will start up and the “System Status” will show the time remaining until automatic shutdown.

Set water volume to make – Use “Run Volume” slider to choose the number of litres / gallons to be made, then press START button. The watermaker will start up and the “System Status” will show the number of litres / gallons remaining until automatic shutdown.

If the tank float switch is connected, a full tank will override any of the above functions and shut the system down.

Stop watermaker – Press the STOP button on the Control screen. The watermaker will perform an orderly shutdown, followed by fresh water autoflush.



Monitor

All key operating parameters can be monitored with the app. This data is important not only for understanding the operation of the system, but also in case troubleshooting is required.

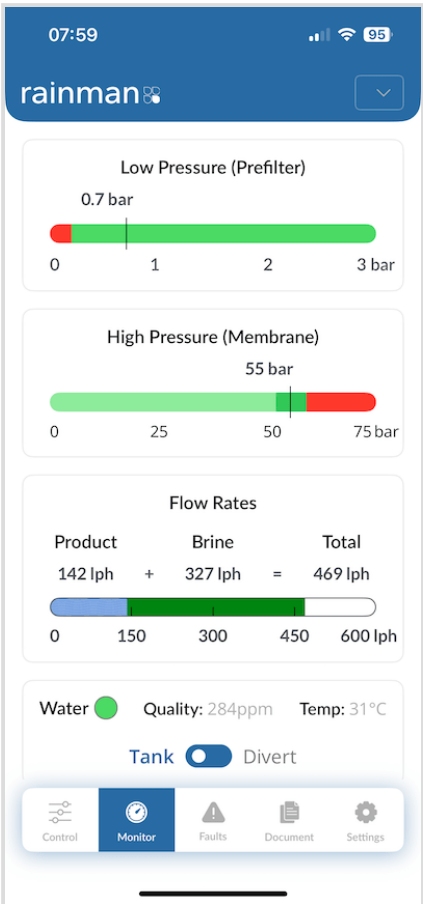
Low pressure (prefilter) – Pressure between the prefilter and the high pressure pump. Normally an indicator of when the prefilter requires replacement.

High pressure (membrane) – Pressure at the membrane. In normal seawater operations, this should be 55 bar (800 psi), but may be lower in fresh, brackish, or extremely warm water.

Flow rates – Stacked bar graph showing both the product water and brine waste water flow rates.

Water – Virtual LED that mirrors the WATER LED on the micropanel. Also a quality figure of total dissolved solids (TDS) in parts per million (ppm) and a water temperature value.

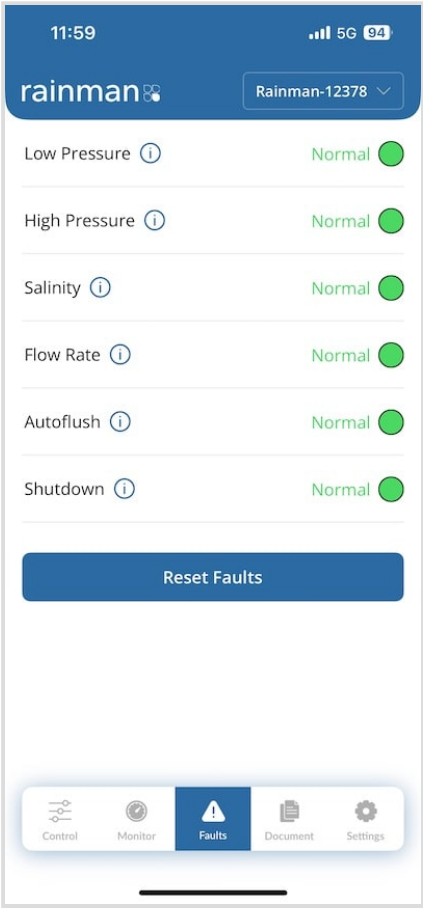
Tank / Divert – Indicates status of the diverter valve. When system is starting up or shutting down, product water will be diverted overboard. During operation and when product water quality is good, diverter valve will route water into the tank.



Faults

General health of the watermaker operation can be viewed at a glance on this page. Green indicates the system is performing as expected. If a fault occurs, this page gives an immediate indication of which parameter needs attention and the related severity.

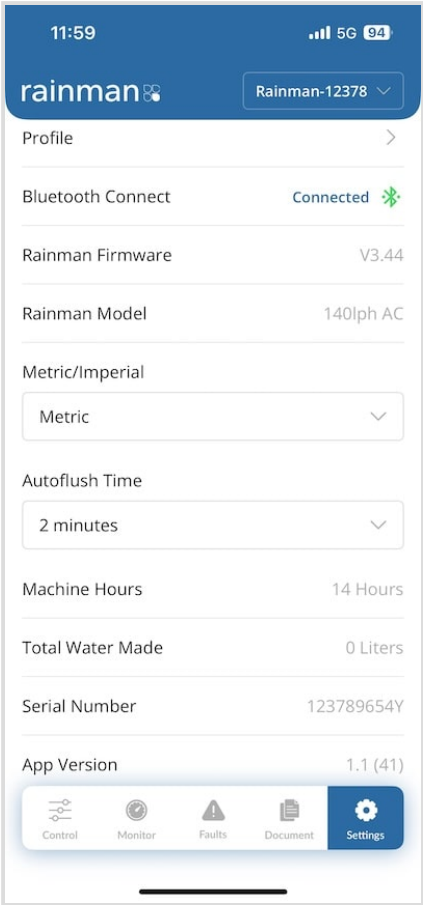
See the next section for detailed descriptions of each fault.



Settings

The settings page will display configuration data about the watermaker and the app, whether or not the bluetooth system is connected via the bluetooth link. It will display the accumulated hours and total water made since installation.

Choice can be made for metric/imperial figures and setting the autoflush cycle time.



Fault Descriptions

Certain items may trigger a system fault. Below are the faults that may occur in the system, what triggers it, and how the system responds. Most of these are easily managed by the user via our [online troubleshooting guide](#).

Salinity Fault

Product water salinity does not measure below 800ppm TDS (water quality LED does not get to green or amber colour) within five minutes of operation. Orderly system shutdown.

Usually related to insufficient total flow rate, but can be due to membrane due for replacement or cleaning.



Low Pressure Fault

Low pressure at the prefilter does not stay above 0.2 bar while making water. System shutdown.

Usually indicates that a prefilter or impeller may require changing.



High Pressure Fault

High pressure at the membrane can not reach 55 bar (800 psi) or the maximum flow rate for your model of Rainman within two minutes. Orderly system shutdown.

Usually indicates a blockage upstream of the lift pump.



Flow Rate Fault

Brine flow rate does not reach a minimum of 0.5 litres per minute within 5 seconds after startup. System shutdown.

“Low flow warning” occurs when total flow rate is slightly lower than desired for the system over three minutes, but not critical. System continues to operate as normal.

“Low flow fault” occurs when total flow rate is below critical level for the system over three minutes. Orderly system shutdown.



Shutdown Fault

During orderly shutdown process, pressure fails to get below 5 bar within one minute. Pressure supply unit powered off.



Autoflush Fault

Brine flow rate is below 1 litre per minute for more than 30 seconds while flush cycle is active. Discontinue flush cycle.

May indicate vessel's fresh water pump failed or blocked.



HP Sensor Fault

Controller is not recognising high pressure sensor.

May indicate failed sensor or disconnected wire.



Manual Override

In the unlikely event of an electronics, sensor, or actuator failure, the system has a full manual override capability. This allows you to control the watermaker using the manual pressure control valve, analogue pressure gauges and flow metre. It disables all components connected to the main logic board, including salinity metre and autoflush capability. When in manual override mode, no LED's will be active.

Although it is quite possible the manual override will never be required, it is recommended to use this mode every few months to ensure electrical switch and manual divert valve doesn't stick. It also helps retain skills in the event manual override is ever required.

Auto Panel Manual Override Quick Reference

Make Water

- 1 Ensure valve is set to "MANUAL OVERRIDE TO DIVERT"
- 2 Power switch to "MANUAL OVERRIDE"
- 3 Slowly "INCREASE PRESSURE" to
 - A) 55 bar/800psi or B) Max rated flow, whichever is lower
- 4 If you can test the water on "DIVERT" with hand tester, wait for acceptable TDS level. Otherwise, run system for two minutes.
- 5 Shift valve from "DIVERT" to "TANK"

Note: Change prefilter/impeller if "INTAKE PRESSURE" stays in red

Power Down

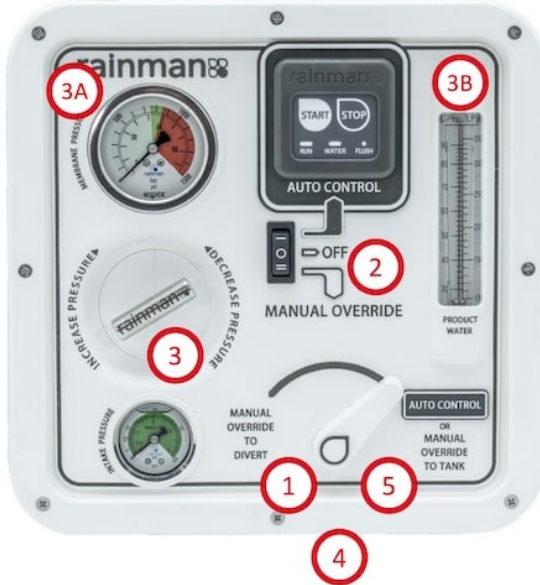
- 5 Shift valve from "TANK" to "DIVERT"
- 3 Slowly "DECREASE PRESSURE" to zero
- 2 Switch to "OFF"

Note: There is no autoflush function when in MANUAL OVERRIDE. Use system every two days or manually flush/pickle the system. For long term storage, pickle the system and set switch to "OFF". Read operations manual for full details.

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Installation Overview

There are three components to installing the Rainman control panel.

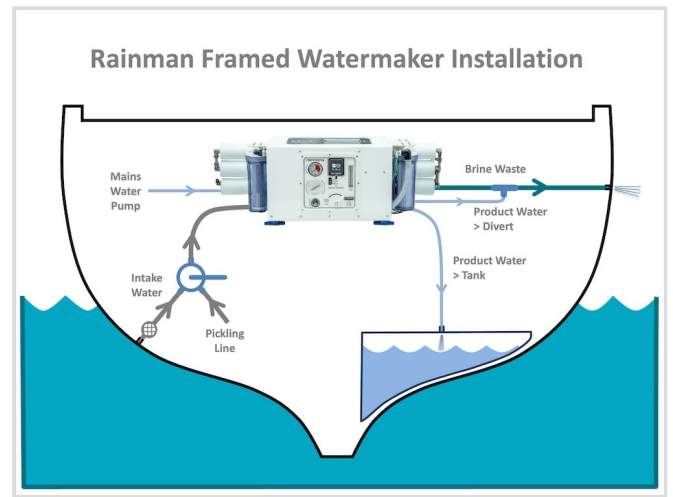
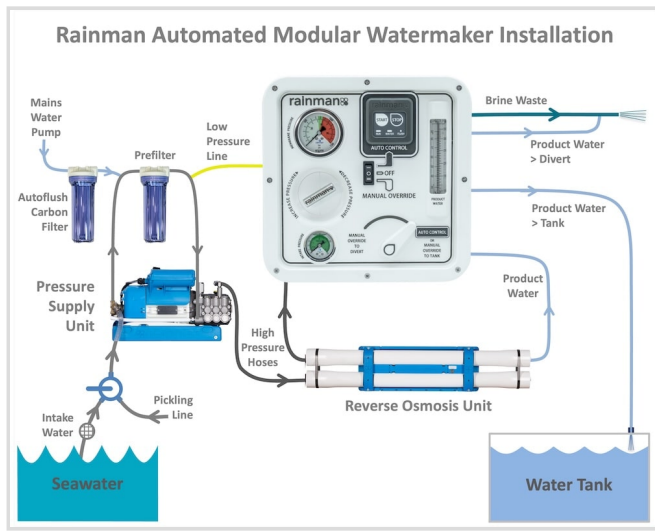
Physical installation – The panel can be flush mounted into a wall or used with the included enclosure box as a standalone control unit.

Plumbing Connections – Seven total plumbing lines are required for the installation of the modular system. One high pressure hose, a brine waste line, three product water hoses, a fresh water flush hose to your boat's pump, and a line to the prefilter.

Electrical Connections – Five connections are required to configure the panel, including 12VDC supply, the wired remote micropanel, two solenoid valves, and the relay signal to operate the main watermaker pump/motor. Three other optional connections exist that may be used to enhance operations, as described in wiring section below.

Since every boat and installation can be different, the installation items below are not in a specific sequence. Installer should read through this entire guide to plan the installation, then decide on logistics and sequencing of the installation tasks.

The diagrams show the plumbing connections for the control panel, in either the Modular or Framed configurations.



Understanding The System

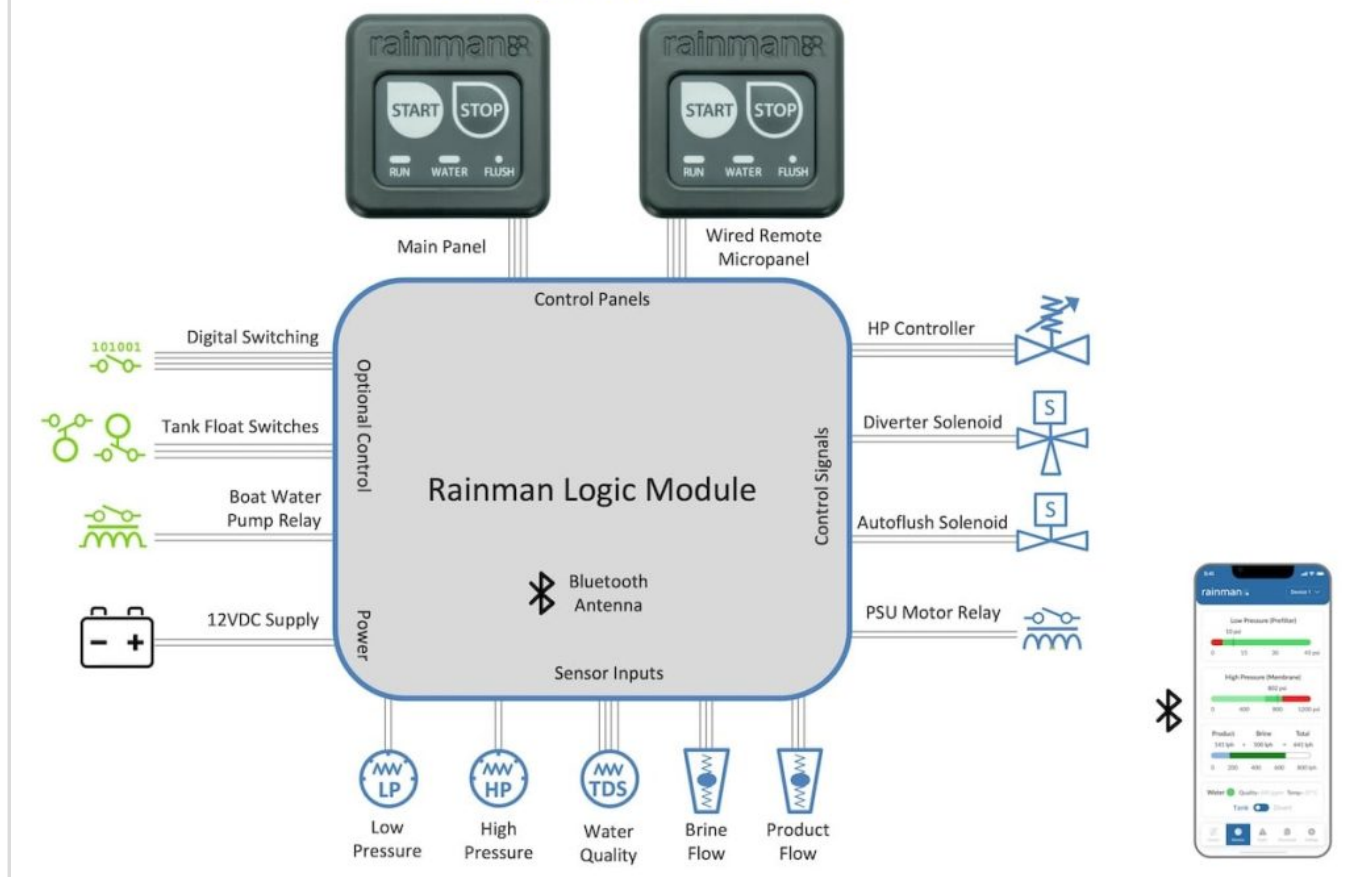
System Architecture

To install and operate the automated Rainman watermaker, it is important to understand the overall architecture of the system. The main circuit board is the “brains” of the system. Requests are received from the operator via the wired micropannels, bluetooth connected app, the remote digital switching connections. Five digital sensors provide all the information required to control the watermaker. Information from these sensors is processed and used to control the three actuators and relay that control the physical watermaker components. Three optional control signals are included to further enhance capabilities and improve the user experience.

Electrical Schematic

Blue - Control Panel Devices

Green - Optional Owner Provided Devices



Sensors

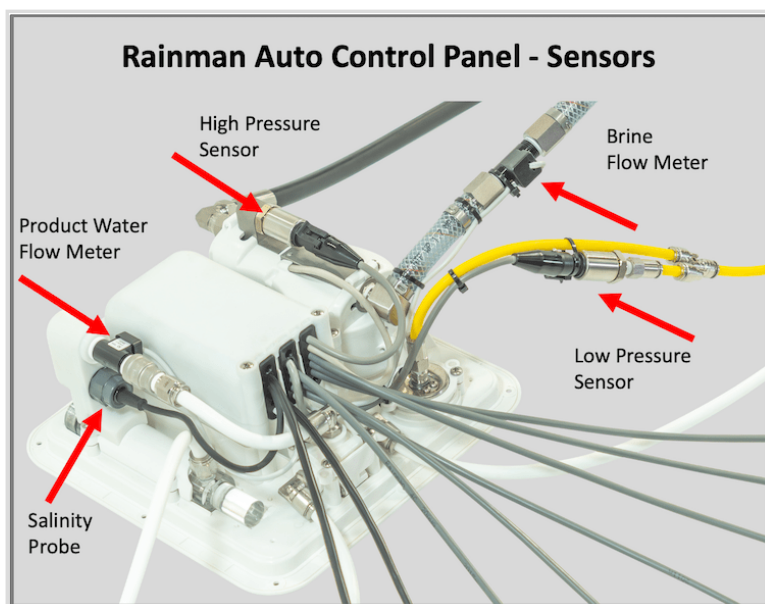
The five sensors used by the system are physically located on or near the rear of the main panel. They are preinstalled at the factory.

High Pressure Sensor – Measures static pressure at the reverse osmosis membrane. Required for pressure control of the watermaker.

Low Pressure Sensor – Measured static pressure between the prefilter and the high pressure pump. Required to ensure the high pressure pump has sufficient flow to avoid cavitation.

Salinity Probe – Measures conductivity as a proxy for salinity. Used to ensure satisfactory water quality.

Product Water Flow Meter – Measures the fresh water flow. In brackish or fresh water, this will replace the pressure for control of the watermaker.

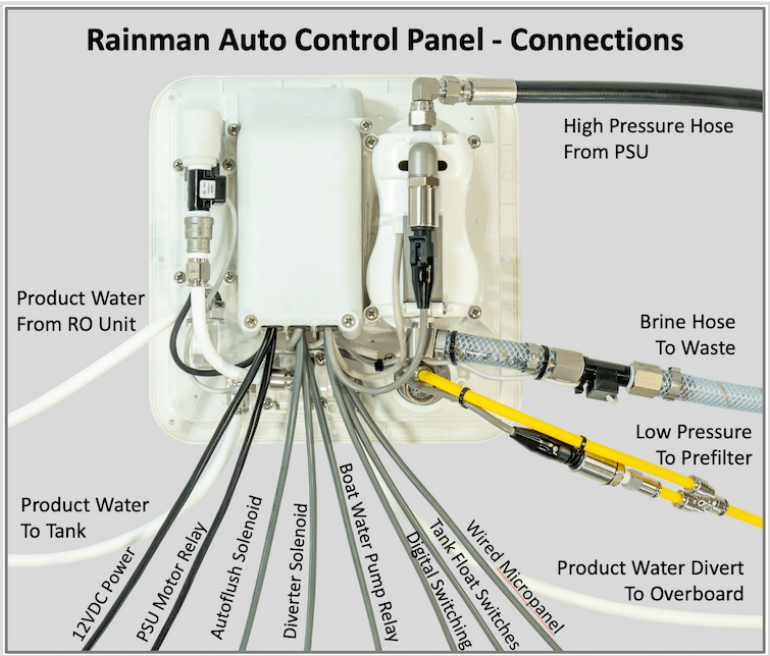


Brine Flow Meter – Not used in controlling the watermaker, but of great use to calculate total system flow in any troubleshooting situations.

External Connections

Several external plumbing or electrical connections are required to install the auto control panel. All of these connections are required for a modular installation, but many of them are internal for a framed system.

Note that the cables colours and size of the brine waste hose may be different to the photo on the right. All cables will be clearly marked upon receiving the system.



Cable and Hose Extensions

The system is shipped with a variety of cables and hoses to support mounting various components away from the main panel. Most of these are physically attached to the panel, but some are extensions for running wires or cutting hoses to fit.

Several of the items are only required for modular system installations. Framed units will have much of the plumbing and wiring integrated into the watermaker.

Note that most of the plumbing lines required are shipped with the main watermaker, including product water hose, brine waste hose, and the high pressure line.

Description	Modular System	Framed System
12VDC Supply	0.5m / 1.5ft	0.5m / 1.5ft
Remote Micropanel Extension	15m / 50ft	15m / 50ft
PSU Relay Signal	5m / 16ft	NA – Internal
Autoflush Solenoid	5m / 16ft	NA – Internal
Divert Valve Solenoid	1.0m / 3ft	NA – Internal
Boat Pump Relay Signal	0.5m / 1.5ft	0.5m / 1.5ft
Digital Switching Signals	0.5m / 1.5ft	0.5m / 1.5ft
Tank Switch Signals	0.5m / 1.5ft	0.5m / 1.5ft
Bluetooth Extension	5m / 16ft	5m / 16ft
Fresh Water Flush Hose	2m / 6ft	NA – Internal
Low Pressure Hose	5m / 16ft	NA – Internal

Physical Installation

A few principles apply to any of the three installation options in this section.

1. The main panel will only be rarely accessed, so it is best to install it near the physical watermaker. This contrasts with our manual operated control panel that is designed to be the primary interface.
2. Don't mount the control panel above any electrical equipment.
3. Although the acrylic control panel is UV resistant, it should not be mounted where it is in regular direct sunlight.
4. The control panel should not be exposed to water spray.
5. Try to position the panel so all plumbing and wiring come from underneath to minimise water ingress.
6. Run all plumbing and cabling lines before doing any cutting.

Main Control Panel

Enclosure Box Mount

The simplest method of installing the main control panel of a modular system is to use the enclosure box. This avoids the need for cutouts in a wall. It can then be glued or screwed to another surface as required. Dimensions of the enclosure box are 280mm x 280mm x 185mm (11" x 11" x 7.3").

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



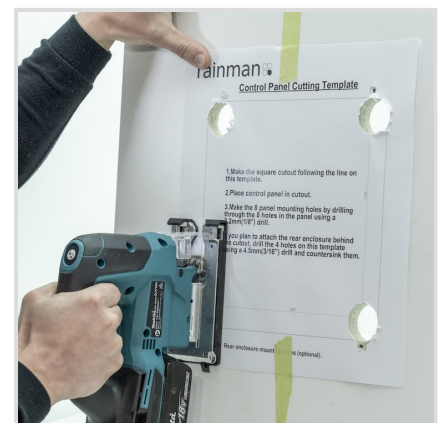
Flush Mount

Many will prefer the neatness of a flush mount installation of the main control panel. If choosing this method, the panel is 280mm x 280mm (11") square. The cutout needs to be 250mm x 250mm (9.9") square. Depth behind the panel is 185mm (7.3"), but can be reduced by 30mm (1.2") if using the optional spacer as shown in the photo. The included enclosure box can be used behind the wall, or it can be left out of the installation.



Cutout

Use the paper template taped to the wall to guide the cutout. Drill four pilot holes where shown in the template.



Install Spacer

Screw the spacer to the wall using the four larger holes in each corner. Eight smaller holes are for mounting the main panel.

For tighter front fit to the wall, the spacer can be installed behind the wall by fitting it between the back of the wall and front of the enclosure box.

This is an optional step as it is not mandatory to use the enclosure box at all.



Hole Cut

If using the enclosure box, decide where the hoses and wires should exit the box based on the layout behind the wall. Drill a hole (or holes) on the side or rear of the box as desired. Line the edge with the included rubber protection strip to prevent chaffing.



Control Panel Mounting

All the hoses and cables should be connected as per instructions below before executing this step.

The eight holes in the spacer can be used for guide to drill pilot holes for the main panel. The main panel can be slide onto the wall or spacer, securing it with eight screws.



Remote Micropanel

The wired remote micropanel is likely the primary interface to control and monitor the watermaker. It should be installed in a convenient location for regular and easy access.

The micropanel is 60mm x 60mm (2 3/8") square with a short cable in the rear for mounting to a flat surface. It incorporates START and STOP switches as well as three status LED's.

Drill a 38mm (1 1/2") hole in the panel in the desired centre of the micropanel.



Place the micropanel over the hole on the wall to use the four holes as drilling guides. Drill pilot holes for each corner of the micropanel.



Once connected to the micropanel extension cable through the hole, secure the micropanel to the wall with the included screws.

The micropanel has a choice of dark grey or very light grey face plates. Snap one of the face plates over the top of the micropanel to hide the screws.



Diverter Valve

The solenoid diverter valve is set on a small base plate for easy mounting. Choose location near the watermaker and secure valve to a hard surface using the included screws. Orientation of the valve is unimportant, but ensure space is left for product water hoses to connect.

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Fresh Water Flush Filter

The fresh water flush system utilises an activated carbon filter, a solenoid valve, a check valve, and related fittings. Mount the filter housing bracket to a wall so it will remain vertical. The housing lid and related attachment can be physically mounted to the bracket.

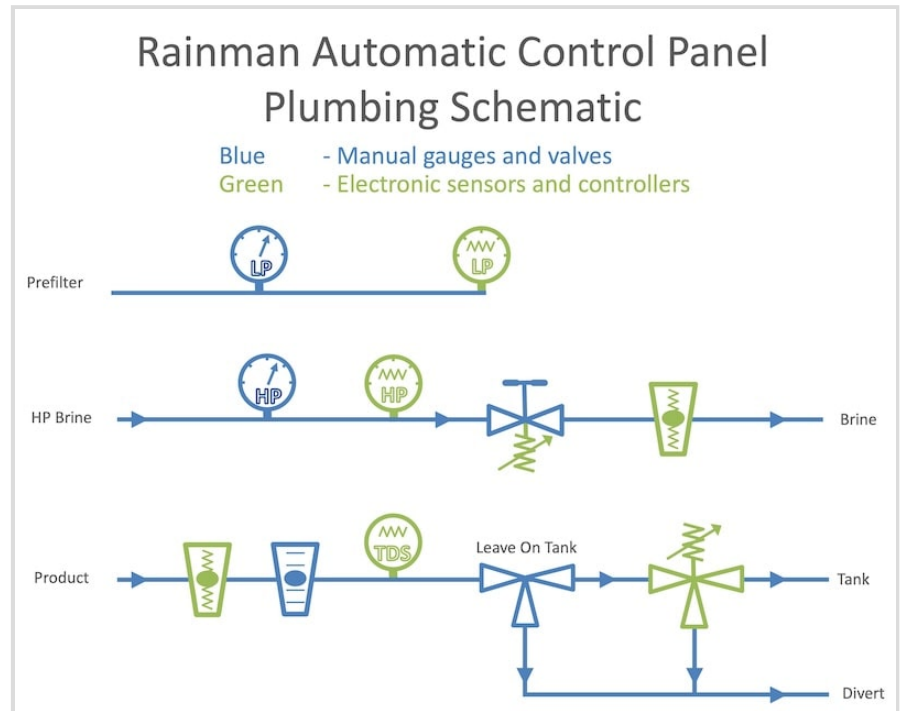
Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Plumbing Connections

A unique aspect of design for the Rainman automated control panel is that it incorporates both analogue and digital measuring and control components, cohabitated in the same physical space. The critical component enabling this design is in integrating the pressure control valve with a hollow shaft brushless DC motor.

All the components in the schematic are physically installed on the main control panel, except for the solenoid diverter valve (green, lower right in diagram). On the modular system, this is installed remotely. On the framed system, it is internal to the system.



High Pressure Hose

The watermaker high pressure hose from the reverse osmosis (RO) unit connects to the control panel via a compression fitting. Begin by positioning the black high pressure hose and making it thumb tight. As this is a compression fitting, plumbing tape is not required.

If installing a 240L-Torrent system, the fittings and hoses will be larger than these photos show.



Adjust the swivel to ensure the high pressure hose is routed at an appropriate angle for the installation. Using two spanners (wrenches), snugly tighten the compression fitting.

16mm, 18mm, and 19mm spanners (wrenches) be useful.

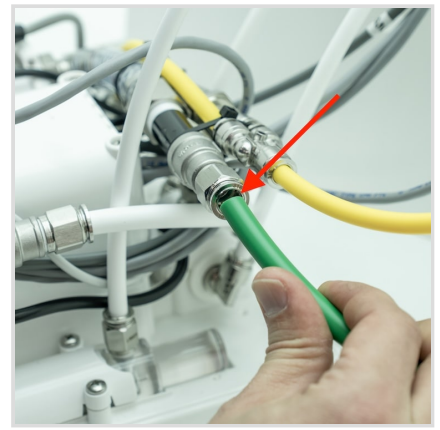


Brine Waste

The brine hose fitting angle can be adjusted accordingly for the

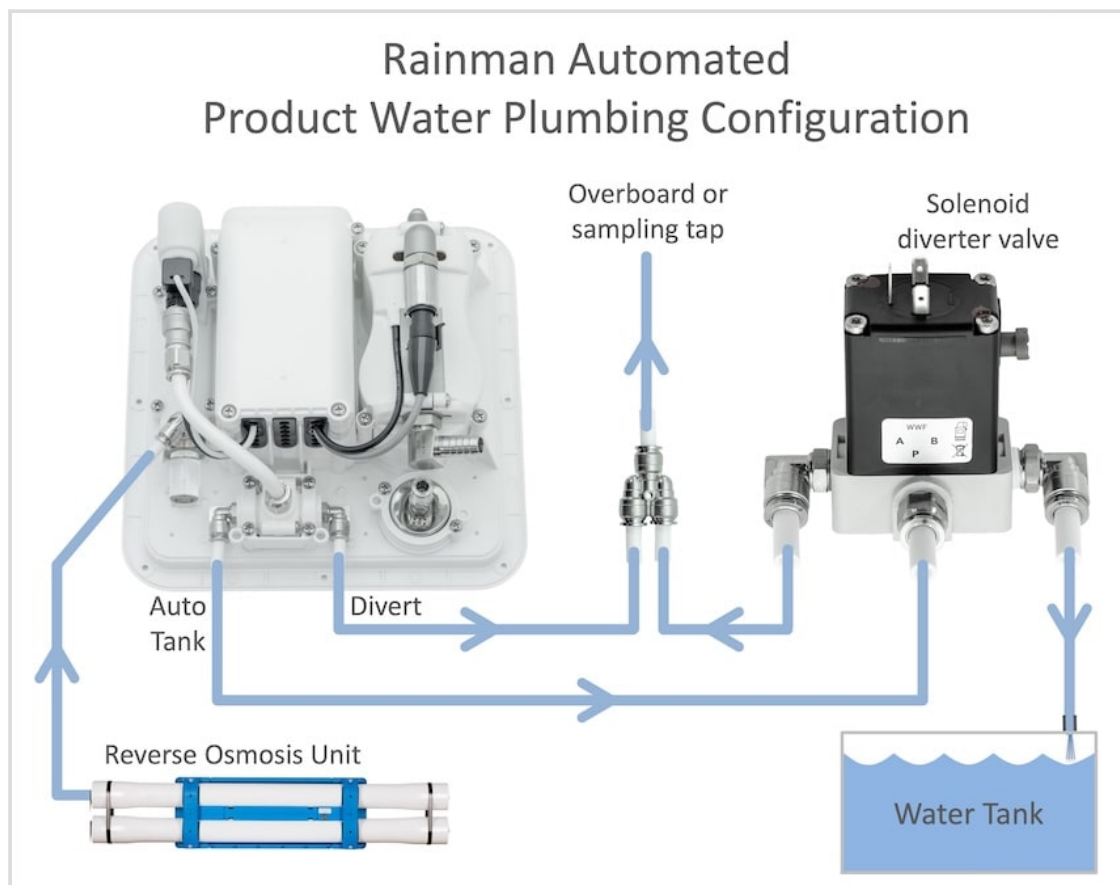
installation using a 22mm spanner / wrench.

Insert the green brine waste hose into the pushfit connector. If this is a 240L Framed Torrent, it will be translucent braided hose to be connected on a hose tail.



Product Water Configuration

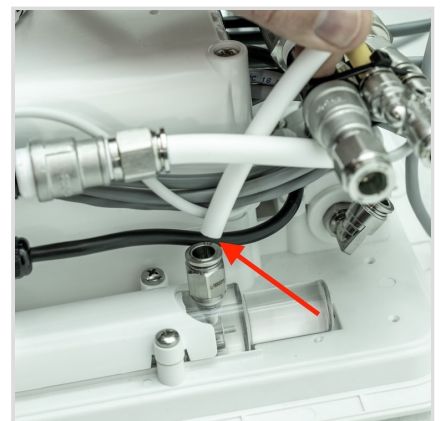
Fresh product water flows from the reverse osmosis (RO) unit through the control panel analogue and digital flow metres, then through the manual diverter valve and finally the solenoid diverter valve.



Product Water Fittings

Product Water From RO Unit

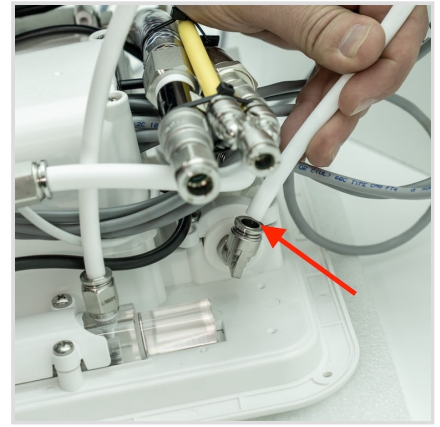
Insert the white product water hose into the pushfit connector at the base of the analogue flow metre.



Product Water From Manual Diverter Valve To Solenoid Diverter Valve

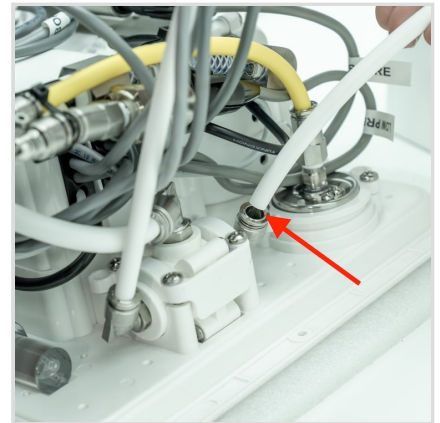
Insert the white product water hose from the "P" port of the solenoid diverter valve into the "tank" side pushfit connector, nearest the analogue flow metre.

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Product Water From Manual Diverter Valve To Overboard

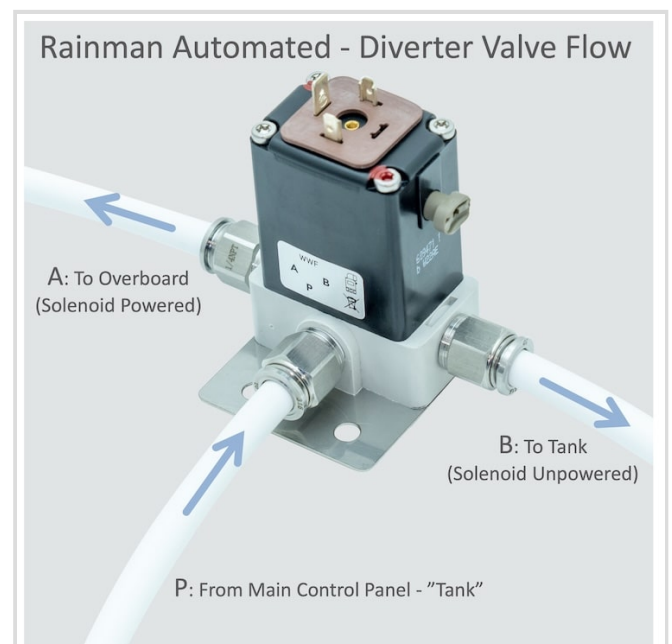
Insert the white product water hose going to waste into the "divert" side pushfit connector, nearest the small analogue low pressure gauge.



Diverter Valve

Insert the white product water hose sections into the pushfit connections on the diverter valve. Route the hoses to / from locations labeled in the photo.

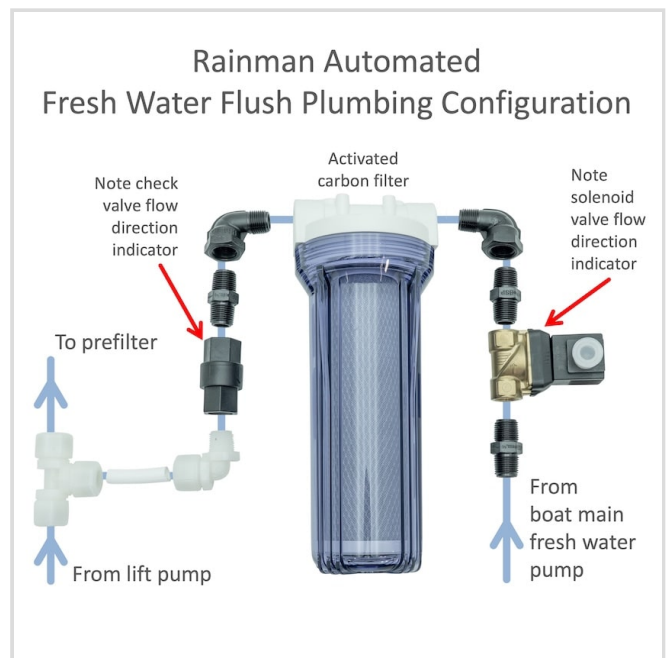
Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Fresh Water Flush Assembly

The fresh water flush assembly is shipped with a number of components, which should be assembled and plumbed as per the image. Both the solenoid valve and the check valve are directional and should be observed when assembling the system. Ensure the solenoid valve is installed between the boat's fresh water system and the activated carbon filter. The check valve is after the activated carbon filter to ensure water doesn't backflow into the filter. The tee fitting should be between the lift pump and main prefilter.

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Low Pressure Gauge To Prefilter

The yellow hose is a static pressure line that connects the analogue and digital low pressure gauge to monitor the pressure between the prefilter and high pressure pump. If this pressure drops too low, it indicates insufficient flow to the high pressure pump and may cause cavitation.

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Electrical Connections

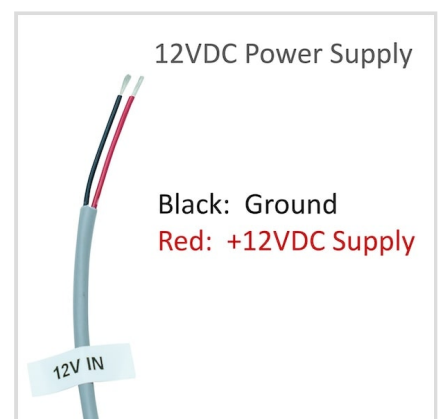
The auto control panel in the modular configuration has a number of electrical connections. A unique connector is provided to simplify all the control panel to Rainman components. This includes the remote micropanel, relay signal to the pressure supply unit, divert valve and autoflush valve. The 12VDC power and all optional connections are shipped with heat shrink over the end of the wire cables.

All of the control panel to Rainman component connections are internal on the framed systems. It is only required to wire in the 12VDC control panel power supply and any optional connections for the framed units.

12VDC Power Supply

The control panel requires a constant 12VDC power supply to remain in standby or active mode. The range should be between 10.5VDC and 13.6VDC. While the actuators and pressure controller are active during startup and shutdown, it can draw up to 7 amps for very short periods of time. Most of the time, it is only a very small draw for the electronics. A slow blow 4 amp fuse for the circuit is recommended.

Unlike the Rainman manual panel, this supply is not able to run on 24VDC. If 24VDC input is required, Rainman offers an optional DC to DC converter.



Remote Micropanel

The system utilises two identical micropanels. One is on the main control panel and the other is to be wired remotely at a convenient location. In order to simplify running cables, an extension lead is provided with convenient connections.



Pressure Supply Unit Relay

A relay is built in to the capacitor box of the pressure supply unit (PSU). This allows the low voltage control panel to control the main watermaker. A triangular Deutsch plug is utilised to ensure ease of connection.

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Diverter Valve

The Burkert solenoid diverter valve has a Burkert specific plug for power.

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Fresh Water Flush Valve

The Burkert solenoid fresh water flush valve has a Burkert specific plug for power.

Framed System Note - This step is not required for a framed system installation as the connection is internal to the unit.



Bluetooth Antenna

The system has an external Bluetooth 5 antenna attached to the back housing. This will most likely provide sufficient range for reliable communication with the app.

However, should a remote location for the antenna be required, an extension cable is provided for you to move the antenna somewhere remote, away from the machinery of the watermaker and/ or engine room.

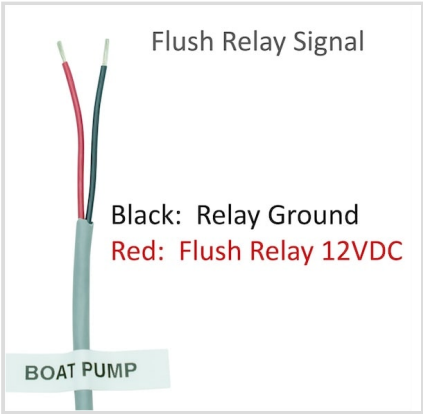
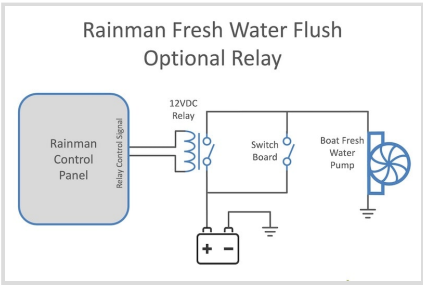


Optional – Boat Pump Relay Signal

The fresh water flush function requires use of the boat’s house pump for supply water under normal pressure to push through the unpressurised watermaker. It may be undesirable to leave the boat’s fresh water supply pressurised while away for the week. In this situation a dedicated relay can be wired to have the Rainman control panel switch on the boat’s pump only during the fresh water flush cycle. This way the boat’s plumbing is not under pressure when away from the vessel.

The signal is 12VDC and the relay is provided by the owner. This is a highly simplified conceptual schematic and if used, should be configured by a qualified electrician. Be careful to ensure the boat’s fresh water plumbing system is not being serviced when the watermaker fresh water flush system is initiated.

Since this is an optional feature, the system is shipped with this cable unterminated. It has small piece of heat shrink over the end and can be left orphaned if not in use.



Optional – Digital Switching

The system provides a remote digital switching capability.

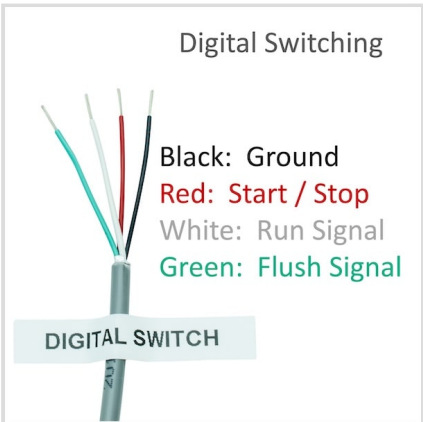
Start Watermaker – Momentarily connect black and red wires when system is stopped. This is functionally similar to pressing the START button on the micropanel.

Stop Watermaker – Momentarily connect black and red wires when system is running. This is functionally similar to pressing the STOP button on the micropanel.

Status Signals – The two wires each have either 0V or 12V signal on them, indicating system status as per the adjacent table.

Since this is an optional feature, the system is shipped with this cable unterminated. It has small piece of heat shrink over the end and can be left orphaned if not in use.

White	Green	Status
0V	0V	Stopped
12V	0V	Running
0V	12V	Flushing
12V	12V	Fault



Optional – Tank Level Switches

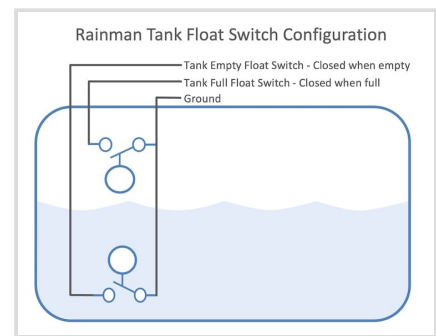
The system can be configured to stop or start with analogue tank float switches, provided by the user. Alternatively, these connections may be used

in a digital switching application to simulate switch closing.

Tank Full – The switch should be normally open and closed when the tank is full. When the tank is full for ten seconds, the system will perform an orderly shutdown and trigger an autoflush. The ten seconds prevents temporary slosh from boat movement triggering a shutdown.

Tank Empty – The switch should normally be open and closed when the tank is empty. When the tank is empty, the system will start until the tank full switch is closed. This feature only works when the system has been shutdown from the tank full switch above. We highly recommend users NOT use this option on a boat to prevent starting watermaker at an undesirable time.

Since this is an optional feature, the system is shipped with this cable unterminated. It has small piece of heat shrink over the end and can be left orphaned if not in use.



Initial Configuration of System

Rainman uses a single logic board to operate all the automated systems. This means the firmware accommodates all the various flow rates for the different Rainman systems. If adding the automation to a modular unit or as an aftermarket upgrade, the system will require configuration to the particular watermaker model. If installing a framed unit, this step may not be required. The phone app connects to the system via bluetooth and will be used for configuration purposes. Download the app by searching "RainmanDesal" on the Android or iOS app stores.

Set Up Account

When first opening the app, it will request name, contact information, and a password. This data is stored within the app and not shared.

The first time using the app with a watermaker will require a login. After this first use, login should not be required.

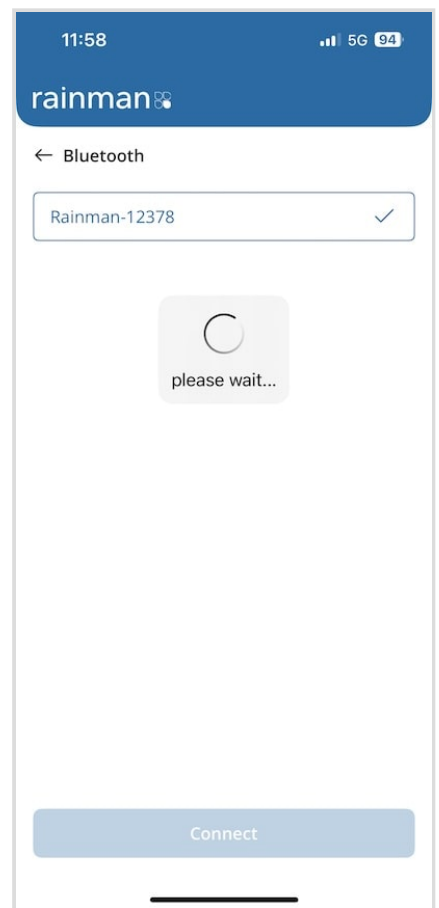
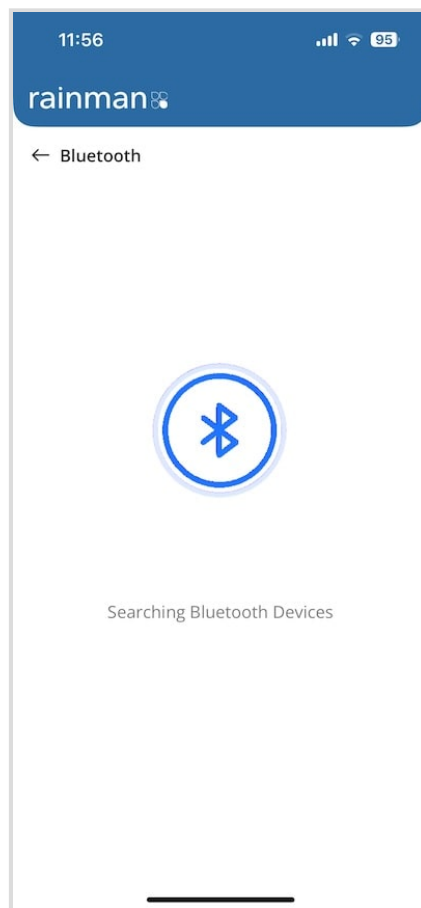
A demo mode is available to gain understanding in how the watermaker operates. It is not required to have a watermaker connected to view demo mode.

The screen shows the 'Sign up' process. At the top, it says 'Sign up' with a back arrow. Below is the heading 'Sign up' and a subtext 'Please enter following details to create account with Rainman'. There are four input fields: 'Please enter your name', 'Enter Mobile Number' (with a flag icon), 'Enter Email Address', and 'Enter Password' (with a strength indicator). Below the password field is a note: 'Password must be minimum 8 chars, with 1 uppercase, 1 lowercase, 1 number, and 1 special character.' There is a 'Confirm Password' field. At the bottom is a blue 'Sign up' button. At the very bottom, a small text line reads: 'By continuing you consent to share details with app and agree to app's Privacy Policy and Terms of Service'.

The screen shows the 'Login' process. At the top, it says 'Login' with a back arrow. Below is the heading 'Welcome' with a hand icon, followed by 'Login to your account' and 'Enter your Email Address to continue'. There are two input fields: 'Enter Email Address' and 'Password' (with a strength indicator). Below the password field is a link 'Forgot Password'. At the bottom is a blue 'Login' button. At the very bottom, there is a blue 'Demo Mode' button.

Bluetooth Connection to Watermaker

The app communicates to the watermaker via Bluetooth 5 protocol. After logging in to the app account, a bluetooth search for a Rainman watermaker will commence. The Bluetooth device format will be in the form of "Rainman-xxxxx", where "xxxxx" is the first five digits of the control panel. The control panel serial number typically begins with "J0...". Select the watermaker.



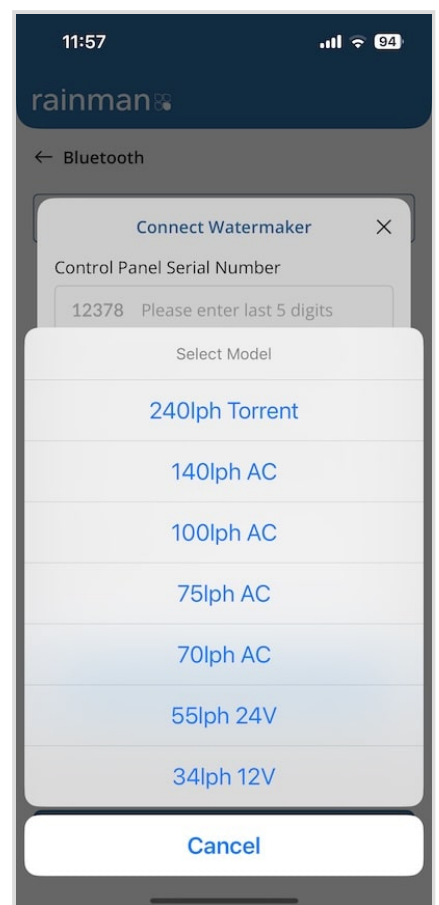
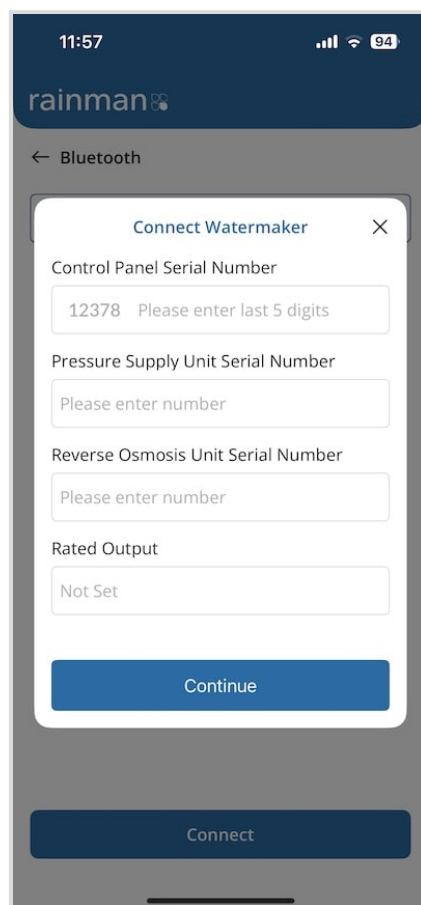
Configure Watermaker

While secure communications are not critical important between the app and the Rainman watermaker, prevention of bystanders taking over control of the watermaker is useful. A very basic level of security is provided in the communication between the app and Rainman watermaker.

After selecting the watermaker above, the connection screen will be presented. The first five digits of the serial number of the selected watermaker are presented in grey. Complete the field with the final five digits of the serial number.

Complete the Pressure Supply Unit Serial Number and Reverse Osmosis Unit Serial Number for completion. These two fields are not required, but useful for future support calls and troubleshooting.

The Rated Output is likely "Not Set". Click this to select the watermaker model. Accuracy in this field is extremely important as it is used for all flow rate calculations of the



watermaker. If the system is a framed unit, this field may be preset.

Confirm Setup of Watermaker

After completing the connection page, go to the Settings page to confirm the Rainman model is correct. Set preference for imperial / metric units.

The fresh water flush (autoflush) cycle time is fixed at seven days, but the duration of the flush can be set. Two minutes is normally sufficient, depending on the strength of the boat's house pump. At least 10 litres (2.5 gallons) of fresh water should be pushed through the system during the fresh water flush cycle. If the amount of water is less than that, increase the flush time accordingly.

The Rainman watermaker is now ready to be operated from either the phone app, micropanel, or digital switching capabilities (if implemented).

