



THE UNIT MUST BE INSTALLED BY A COMPETENT ELECTRICIAN OR ELECTRICAL ENGINEER. FAILURE TO COMPLY WITH THESE INSTRUCTIONS COULD INVALIDATE THE CONTROLLER WARRANTY.

**ALWAYS DISCONNECT THE MAINS SUPPLY BEFORE OPENING UNIT.**  
**ALWAYS DISCONNECT THE MAINS SUPPLY BEFORE CONNECTED THE PUMP.**

Set up the system carefully. Follow these instructions very closely, paying close attention to all warnings and diagrams.

The S3 is fused at 5A. Always fit the correct 5A quick blow mains fuse. The S3 can control pumps up to 1000VA (1000W). DO NOT USE THE S3 WITH PUMPS GREATER THAN 1000VA.

The S3 and pump mains socket are supplied in a waterproof enclosure. The mains plug is NOT WATERPROOF. Do not plug the mains plug into a socket that could become wet during operation, failure to do so will result in damage to the unit.

Ensure the 230Vac pump mains socket enclosure is closed tightly before turning the controller on. This will prevent the connection getting splashed or wet during use, failure to do so will result in damage to the unit.

Specification	Value
Mains Supply Voltage	90 - 260 Vac
Pump Voltage	90 - 260 Vac
Fuse Rating	5A Quick Blow
Maximum Pump Power	1000VA
Enclosure Material	ABS
Water Resistance	IP65
Dimensions	240 x 160 x 90 (mm)
Working Temperature	0 to 40 Deg C

**DISCLAIMER**  
THE MANUFACTURER RESERVES THE RIGHT TO MAKE CHANGES TO ANY PRODUCT HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. THE MANUFACTURER DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN.

For more information and videos on how to use Spring controllers please visit: [www.springltd.co/videos](http://www.springltd.co/videos)

Thank you for buying an S3 Static RO Controller. This is an advanced pump controller solution for your system and should give you complete control over water production.

Follow this manual carefully. It explains in detail how to connect and operate the pump controller. Most connections are shown on the system diagram, however further details are provided throughout the rest of the manual. Complete ALL wiring connections BEFORE connecting the unit to the mains supply. Ensure the controller, sensors and cables are firmly fixed in place before using your controller.

The S3 controls the filling side of your water tank (inlet and pure water production). The controller has a number of other advanced features to increase ease of use and report on the operational status of the system.

Filling

The controller opens the solenoid valve to fill the water tank until the high level float switch activates. This is a one time operation and will stop once the tank is full. The controller will automatically flush your RO membrane on a regular basis to keep it at optimum performance and to increase its service life.

The controller can be configured to stop filling if the TDS is too high. This can be set to either after the RO membrane (due to an RO failure) or after the DI vessel (if resin is spent). It will also shutdown the fill if mains water pressure is too low.

The controller has a flowmeter to measure the amount of water used, this can also indicate the filter life.

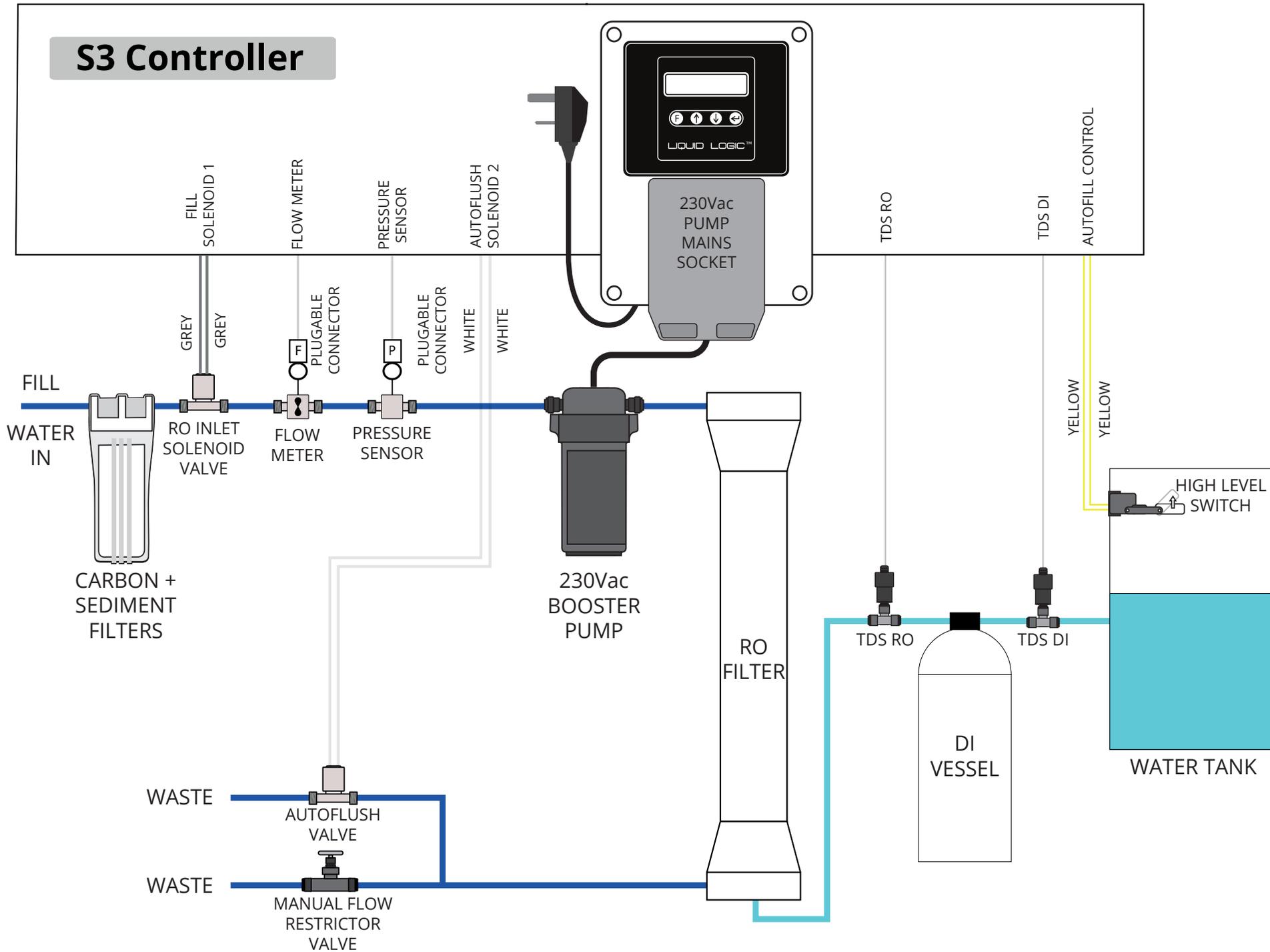
The controller also incorporates a pressure sensor which allows the controller to report on the state of the carbon and sediment filters. The addition of a pressure sensor also allows the controller to shut down the pump in the event of mains water failure.

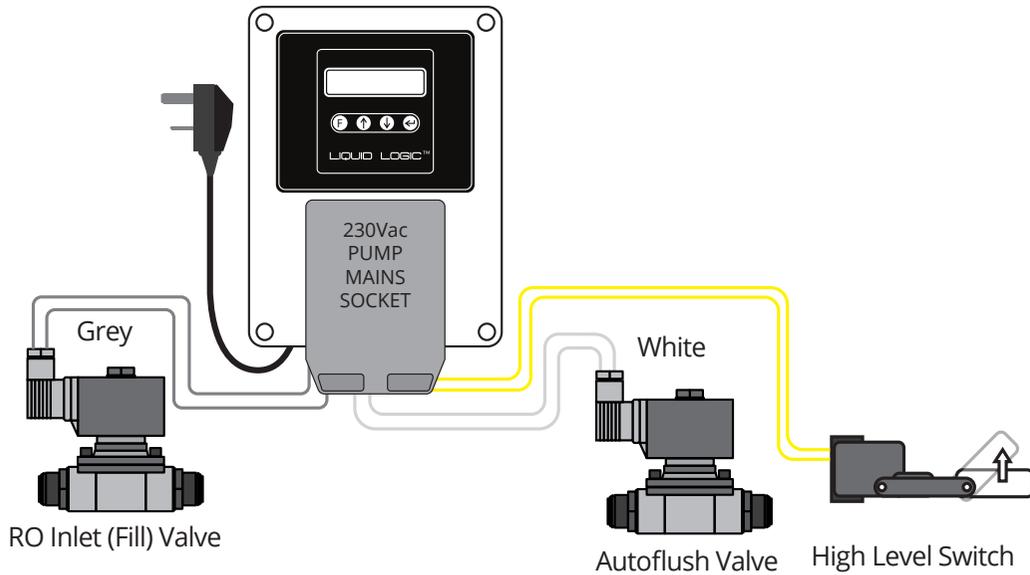
Fitting

The S3 is supplied already wired. There is no need to disconnect any wires. Follow these instructions carefully and refer to the system diagram.

IT IS RECOMMENDED THAT THE S3 IS FITTED AGAINST A WALL OR SIMILAR VERTICAL SURFACE.

1. Ensure the S3 is NOT PLUGGED INTO THE MAINS SUPPLY.
2. Remove the top cover by loosening the four corner screws. Remove top cover by folding to the right.
3. Screw unit to the wall or vertical surface through the four ready drilled holes in the back box corners.
5. Carefully replace the top cover and tighten the four corner screw.





Connect the pump controller following this diagram. Use only wire from the middle gland. NOTE: only fit the fuse once all connections are made.

To start filling the tank simply press the 'F' (Fill) button briefly. This will activate the RO inlet solenoid valve, allowing water to fill the tank, until the float switch detects that the tank is full.

**F**

System  
Fill - Autoflush



System  
Filling

When fill is started the system will open the Autoflush valve for 5 mins (in every hour) to clean RO.

The Autoflush valve will then close when flushing has finished and controller will continue to fill via the RO inlet valve. After flushing the booster pump will turn on if 'boost on flush' is 'off'.

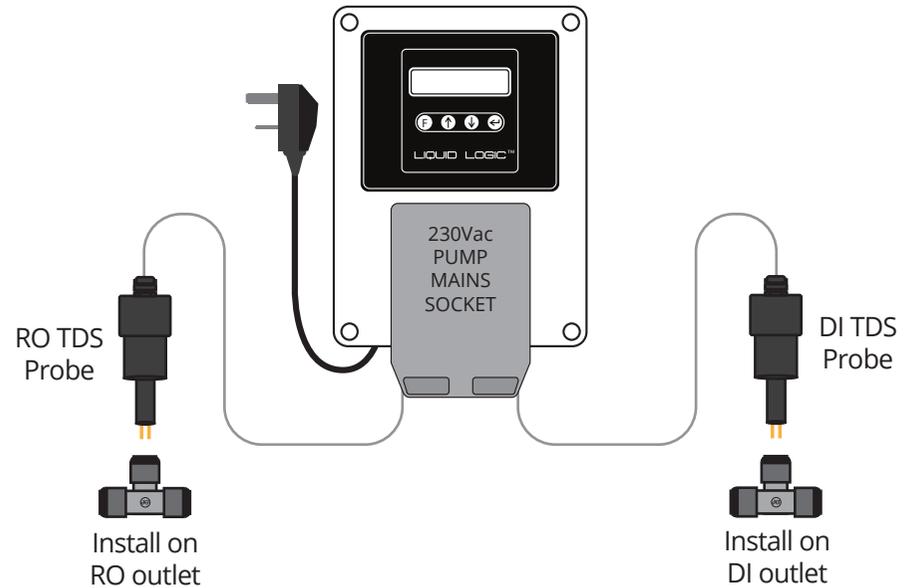
System  
Full

**F**

When the tank water level rises sufficiently to activate the level switch, filling is stopped. All valves are closed.

To manually stop the tank filling, (if 'On Demand' is 'Off') press the 'F' (Fill) button again briefly. The display will remove the 'Fill' message.

NOTE 1: The solenoid valve will be turned off if the unit detects a loss of mains water pressure (below 10 PSI).



**Take care when handling TDS probes. Do not damage gold plated contacts as this will affect TDS accuracy.**  
**Ensure gold plated contacts are clean before use. Clean with ISOPROPANOL alcohol (IPA) and a soft cloth.**  
**Dirty contacts will affect TDS accuracy, clean with IPA if readings appear to deviate over time.**

For the TDS probes in John Guest 1/2" equal tee pieces (not supplied) as shown on the diagram.

We recommend RO TDS probe to be fitted after the RO (reverse osmosis) filter. You can then check the RO is working correctly. If you see these values rising over time it could indicate a problem with the RO.

We recommend DI TDS probe be fitted after the DI (de-ionising) vessels. You can then check DI vessels are working (and that the resin is not depleted).

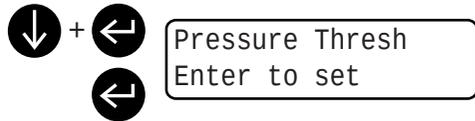
For good cleaning a TDS value below 5ppm after the DI is recommended.

The TDS function provides an indication of the water purity. The TDS values displayed are in ppm (parts per million). The TDS meter has a max reading of 50ppm.

To monitor the current TDS reading press enter repeatedly until it displays the TDS screen.

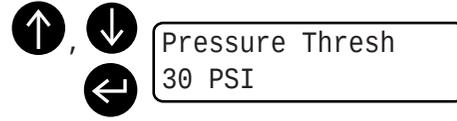


TDS RO	30
TDS DI	1

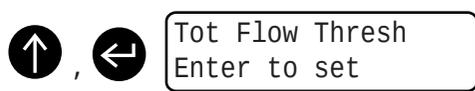


Press the down and enter buttons to access the controller settings menu. 'Pressure Threshold' will be displayed. Press enter to change this item.

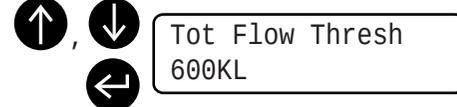
Note: you can adjust this value manually with the up or down button.



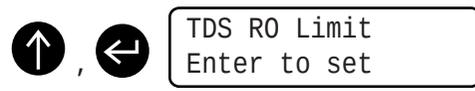
Use up or down button to change. 'Off' disables pressure sensor warnings. 'Cal' calibrates for a new filter, press enter to start calibration. 'Cal' must be set at time of installation of new filter to provide accurate carbon filter warnings. Press enter again to go back to the settings menu



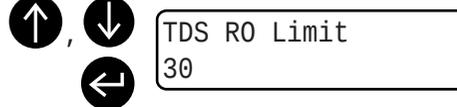
Press up to display the next settings menu item, 'Total Flow Threshold'. This sets the water life warning for the RO Press enter to set this value e.g. 600KL



Use up or down button to set the total water use which will give a warning when reached. Press enter again to go back to the settings menu.



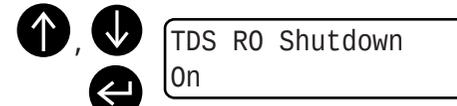
Press up to display the next settings menu item, 'TDS RO Limit'. TDS readings over this value from the RO will display a warning and if shutdown enabled stop the fill. Press enter to change this value.



Use the up or down button to set. 'Off' disables TDS control. Set from 1-50 TDS. Press enter to go back to the settings menu.



Press up to display the next settings menu item, 'TDS RO Shutdown'. 'On' will stop the fill if the TDS level is above the limit value. 'Off' disables this function. Press enter to change this setting.



Use the up or down button to change between on or off. Press enter to go back to the settings menu.



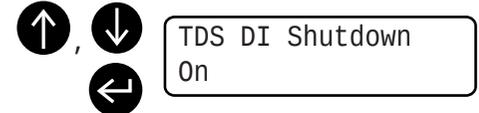
Press up to display the next settings menu item, 'TDS DI Limit'. TDS readings over this value from the DI will display a warning and if shutdown enabled stop the fill. Press enter to change this value.



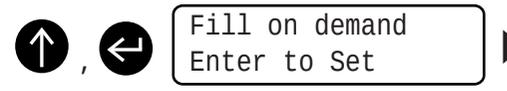
Use the up or down button to set. 'Off' disables TDS control. Set from 1-10 TDS. Press enter to go back to the settings menu.



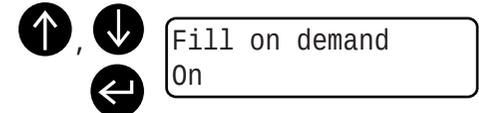
Press up to display the next settings menu item, 'TDS DI Shutdown'. 'On' will stop the fill if the TDS level is above the limit value. 'Off' disables this function. Press enter to change this setting.



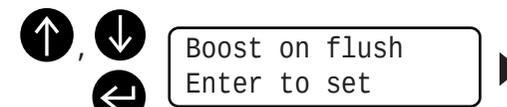
Use the up or down button to change between on or off. Press enter to go back to the settings menu.



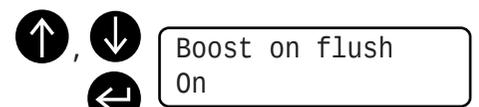
Press up to display the next settings menu item, 'Fill on demand'. Press enter to change this value.



Use the up or down button to set. 'On' will set to Fill on demand (refills every time the level switch drops). 'Off' will set to One time fill (stops when the level switch activates/lifts). Press enter to go back to the settings menu.



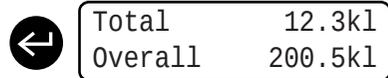
Press up/down to scroll through the settings menu until you reach the menu item 'Boost on flush' press enter to change the Booster pump socket setting.



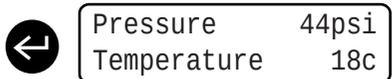
Use the up/down button to change. 'On' Enables the booster pump when system is autoflushing. 'Off' Disables the booster pump when system is autoflushing.



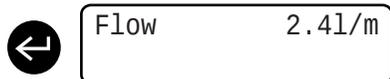
Press enter to display current TDS values after the RO and after the DI.



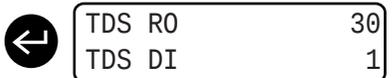
Press enter again to display: Total water used since last pre-filter change and zeroing of counter. Overall amount of water used since install.



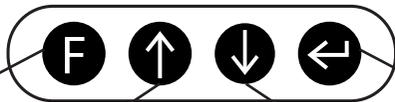
Press enter again to display: Pressure of mains water in PSI. Temperature of water to hose (degrees C)



Press enter again to display: Flow in litres per minute.



Press enter again to return to TDS values.



Start / Stop Filling

Increase a value or go up to next menu item

Decrease a value or go down to next menu item

Enter / Set a value or scroll to next display item

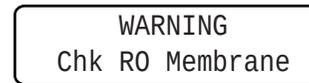
The S3 has a number of warning messages for when something goes wrong in the system, these are designed to help with trouble shooting.



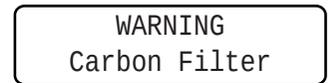
This message during a fill suggests that the mains water has been disconnected.



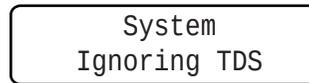
This message indicates that the pressure sensor has been disconnected or has failed.



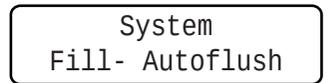
This message is displayed when the amount of water that has flowed goes over the Total Flow Threshold. Check the RO membrane.



The pressure has dropped below the value set in Pressure Threshold, indicating a blocked carbon or sediment filter.



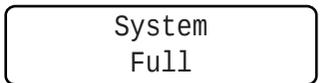
This message is displayed when the system is flushing and shortly after the system has completed flushing.



This message is displayed when the system is flushing.



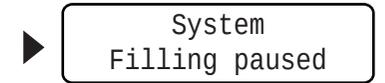
This message is displayed when the system is filling.



This message is displayed when the system is full.



This message is displayed when the the TDS exceeds the set limit.



This message is displayed when the system is paused by the TDS exceeding the limit and the TDS Shutdown is 'On'.