



## Operating Warnings

Adjust your flow settings carefully. Repeated false dead-end detection indicates that the Cal value should be increased (less sensitive).

For absolute safety always wire through the pump pressure switch. (The pressure switch can be bypassed if absolutely necessary - the unit will protect itself under normal conditions.)

This is a WATER PUMP controller: it will not work with air in the system. Always prime your system before starting work. If air in the system causes false dead-end detection, increase Cal value (less sensitive).

Do not set the Cal value too high. Setting it higher than necessary places extra strain on both the pump and the controller in a dead end situation. This can result in damage to both the pump and your controller.

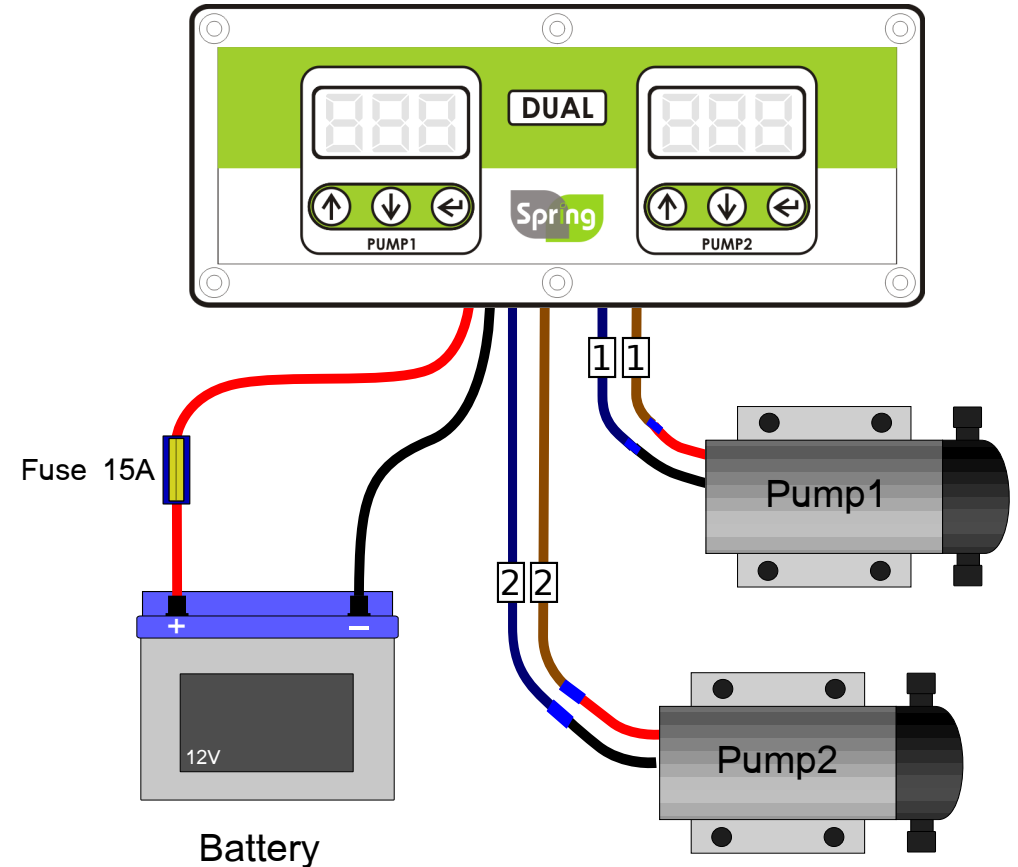
Specification	Value
Supply Voltage	11 - 14 VDC
Maximum Current	15A
Typical Drive Current	7-9A
Voltmeter Accuracy	+/- 100mV
Enclosure Material	ABS
Water Resistance	IP65
Dimensions	195 x 80 x 55(mm)
Working Temperature	0 to 40 Deg C

\* Your battery is at risk of permanent damage if you disable low battery cutoff and continue to use your controller for long periods when the battery voltage has fallen below +10.5V

DISCLAIMER  
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## Step 1. Wiring

Connect the pump controller following this diagram.  
NOTE only fit the fuse once all connections are made.



Make sure correct fuse is fitted inline. Failure to do so will result in damage to the unit.

Observe correct battery polarity. Failure to do so will result in damage to the unit.

### Step 2. Set Up - AutoCal

Connect your hose and brush to the pump.

Turn on the controller by pressing the up or down button. Keep the button held until the display lights up.

Press up until the display shows 30.



Press and hold up and enter to go into calibration.



Press down to select AutoCal, then enter to start.



After several moments the calculated Cal value will be displayed and the controller is ready to use.

Press enter to exit calibration.



The Cal value can be adjusted manually by following these steps and adjusting the Cal value using up and down, instead of using AutoCal.

To enable or disable the low battery cutoff (when battery is below 10.5V) on PUMP1 buttons:



### Step 3. Use

Press up or down to set a suitable flow of water.



Press enter (PUMP1 only) to display the current battery voltage.



Press enter again to return to the current flow rate.



To turn the controller off, press and hold enter.

Message	Description
888	An error has occurred while using AutoCal. This will happen when the motor is not connected or the enter button has been pressed to cancel it.
885	Pressure switch activated or motor disconnected.
88E	A dead end has been detected. If this is not the case, try increasing the Cal value.
88E	This message will start to flash when the battery is low (<11.0V). If battery is below 10.5V the pump will be disabled to protect the battery. (Unless low battery cutoff is disabled*)