Operating Warnings

Adjust your flow settings carefully. Repeated false dead-end detection indicates that the DEAD END Calibration value should be increased (clockwise is 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 Calibration value (clockwise is less sensitive).

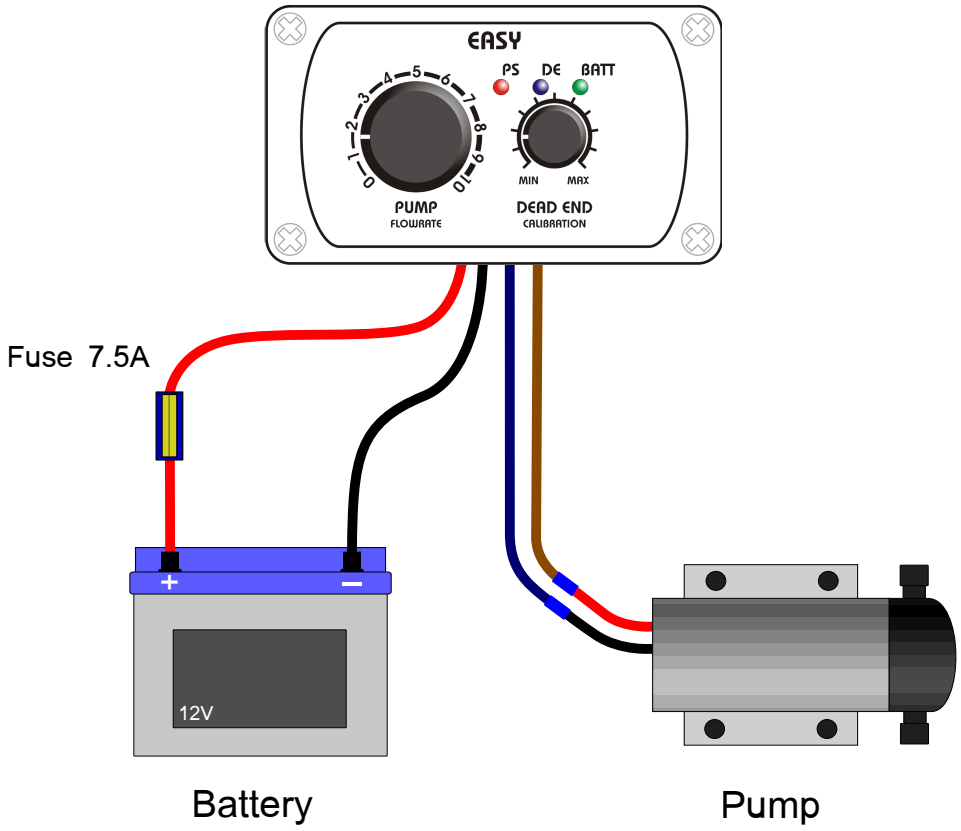
Do not set the Calibration value too high. Setting it higher than necessary places extra strain on both the pump and the controller in a dead end situation. This can result in damage to both the pump and your controller.

Specification	Value
Supply Voltage	11 - 14 VDC
Maximum Current	10A
Typical Drive Current	4-5A
Voltmeter Accuracy	+/- 100mV
Enclosure Material	ABS
Water Resistance	IP65
Dimensions	115 x 65 x 40(mm)
Working Temperature	0 to 40 C

V11 Analog Pump Controller - Quick Start

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 - Calibration

Connect your hose and brush to the pump.

Turn on the controller by turning the PUMP FLOWRATE knob clockwise - water needs to be flowing to the brush.

Turn the DEAD END CALIBRATION knob to maximum (fully clockwise). Let the flow of water start.

Slowly turn the DEAD END CALIBRATION back down (anti-clockwise) until the water flow stops. The DE LED will illuminate.

Turn the DEAD END CALIBRATION back up (clockwise) a little until the water flow re-starts

The controller should now be calibrated to your system and we would expect the knob to point to between 12 and 2 O Clock. However this is system dependent.

Step 3. Use

To adjust the water flow simply turn the PUMP FLOWRATE knob up (clockwise) to increase the flow and turn down (anti-clockwise) to reduce the flow.

Note: The higher your water flow the harder the pump is working (drawing a higher current). Higher current draw will reduce working time per battery charge.

LED	Description
PS LED 	If LED is ON then Pressure switch has been activated or motor disconnected. If activated by a flow restriction in your system then remove restriction (eg. hose kink) to reset the pump pressure switch and resume pumping
DE LED 	If LED is ON then a dead end has been detected. If this is not the case, try increasing the Cal value. In dead end the controller will stop the water flow. If activated by a flow restriction in your system then remove the restriction (eg. hose kink) to resume pumping
BATT LED 	If LED is ON battery voltage is ok. If LED is flashing battery voltage is 11.0V or less. The controller will shutdown the pump to protect your battery if the voltage falls to 10.5V or less. Note: Permanent damage to your battery cells can occur below 10.5V

Note: In a properly calibrated system, DE will be detected by the controller long before PS (pressure switch) is activated by the pump - due to a restriction. Thus saving wear on the pressure switch and resuming pump operation (and hence work) far more quickly when the window cleaner starts flow at the pole again (eg. stop valve opened, hose kink removed or pole reconnected).