## Operating Warnings

V11

Adjust your flow settings carefully. Repeated false dead-end detection indicates that the Cal 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 Cal value (clockwise is 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.

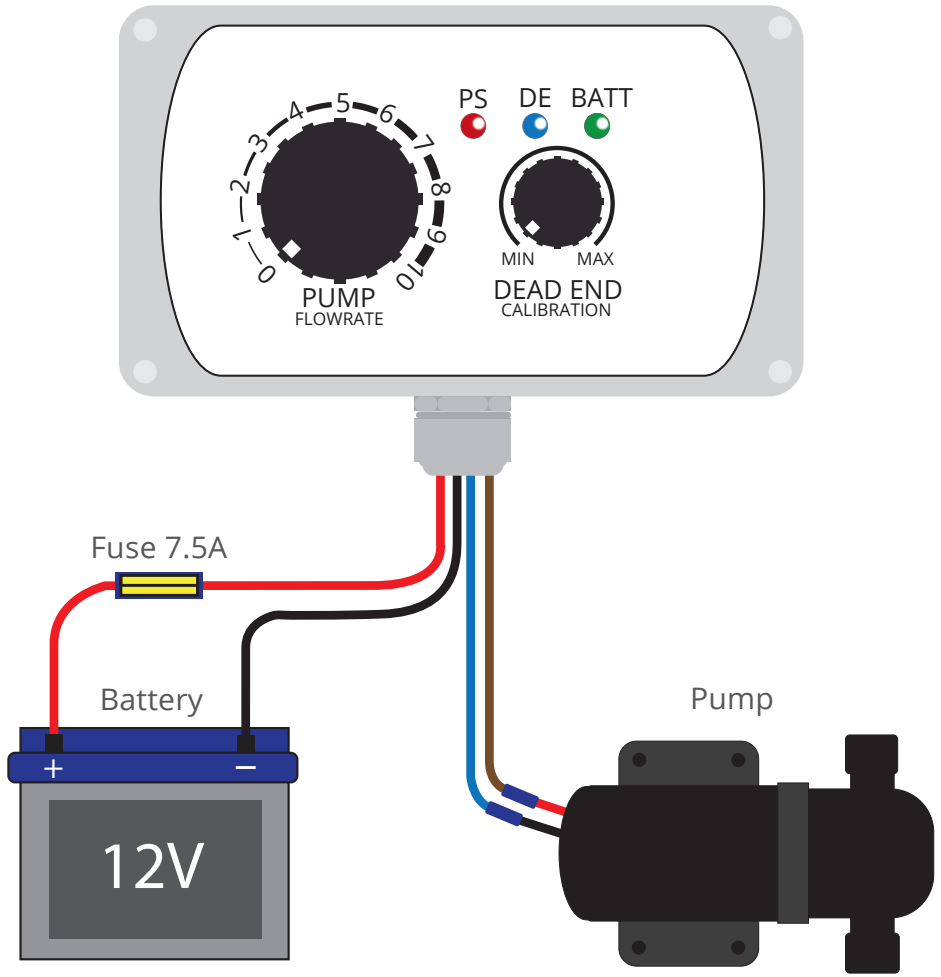
| Specification | Value |
|---|---|
| Supply Voltage | 11 - 15 VDC |
| Maximum Current | 10A |
| Typical Drive Current | 4-5A |
| Enclosure Material | ABS |
| Water Resistance | IP65 |
| Dimensions | 115 x 65 x 40 (mm) |
| Working Temperature | 0 to 40 Deg C |



For more information and videos on how to use Spring controllers please visit: www.springltd.co/videos

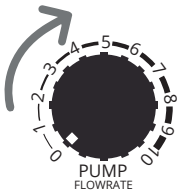







Connect the pump controller in accordance with this diagram.
NOTE: only fit the fuse once all connections are made.

**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.**




Connect your hose and brush to the pump.

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


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

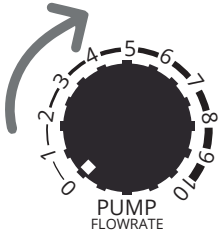

Slowly turn the DEAD END CALIBRATION dial back down (anti-clockwise) until the water flow stops. The DE LED will illuminate.


Turn the DEAD END CALIBRATION dial back up (clockwise) a little until the water flow re-starts and remains constant.

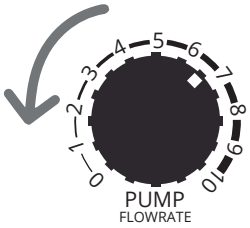
The controller should now be calibrated to your system and we would expect the dial to point between 12 and 2 O'Clock. However this is system dependent.

**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. This saves wear on the pressure switch and resumes pump operation (and working) far more quickly when the flow is started at the pole again (e.g. pole valve opened, hose kink removed or pole reconnected).**






Increase




Decrease

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

Note: the higher the 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 the restriction (e.g. 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 (e.g. hose kink) to resume pumping. |
| BATT LED | If LED is ON battery voltage is ok. If the LED is flashing battery voltage is 11.0V or less. The controller will shutdown the pump to protect your battery if the voltage falls below 10.5V. Note: permanent damage to your battery cells can occur below 10.5V. |