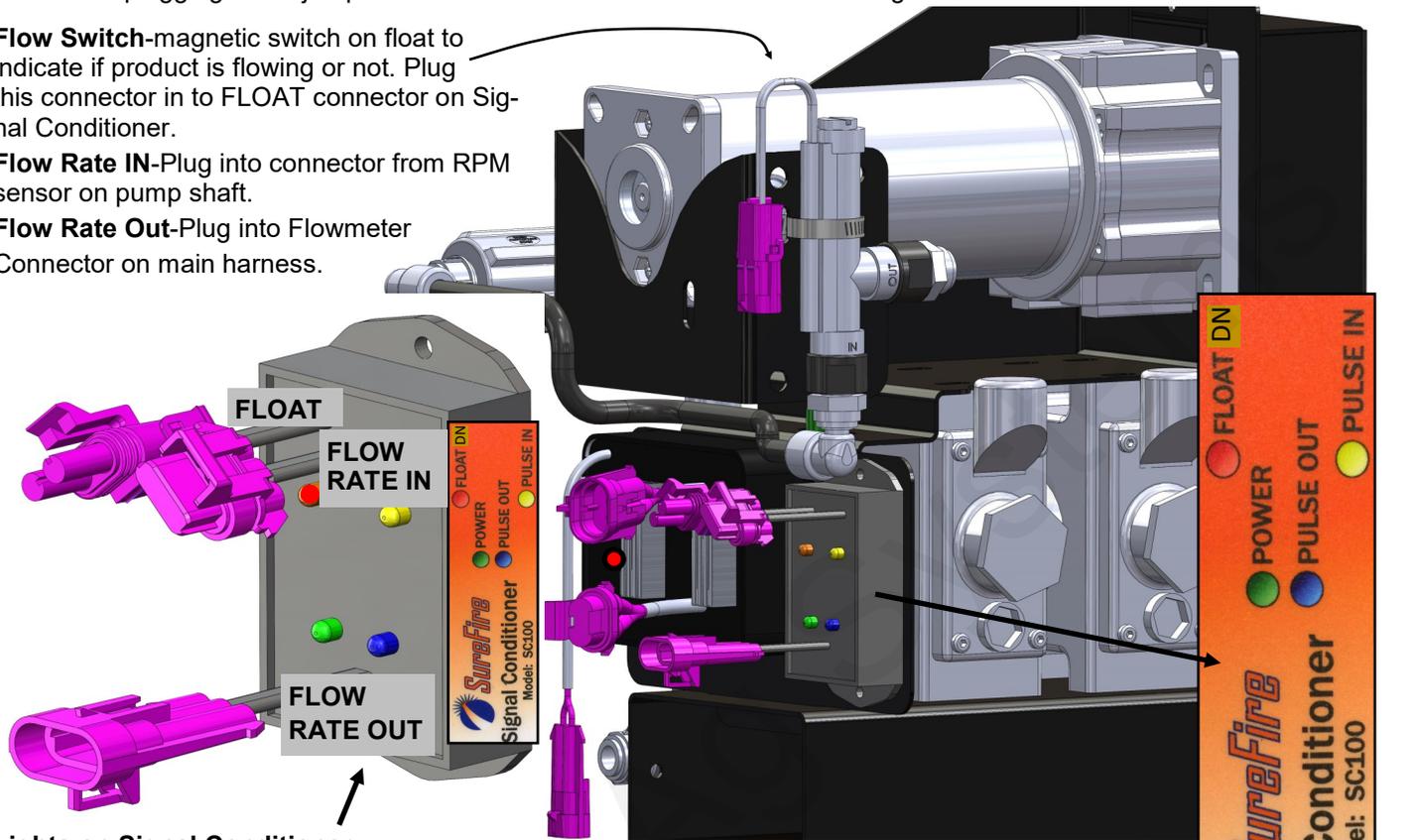


The flowmeter on the Spartan is a pump RPM sensor that is calibrated to convert the pump RPM to flow measured in oz/min. To be certain that liquid is actually flowing, a flow switch with a floating magnetic switch is in the flow line. If the tank is empty, the float will go down, telling the controller that there is no flow. If the flow switch malfunctions and tells the controller there is no flow when there is flow, you can run the system without the flow switch by unplugging the flow switch and plugging in the jumper connector to the Float connection on the Signal Conditioner.

**Flow Switch**-magnetic switch on float to indicate if product is flowing or not. Plug this connector in to FLOAT connector on Signal Conditioner.

**Flow Rate IN**-Plug into connector from RPM sensor on pump shaft.

**Flow Rate Out**-Plug into Flowmeter Connector on main harness.



**Lights on Signal Conditioner:**

**Normal operating mode:** Green and Blue steady on. Yellow pulsing quickly.

Green-Steady ON-is receiving power from flowmeter connector on harness.

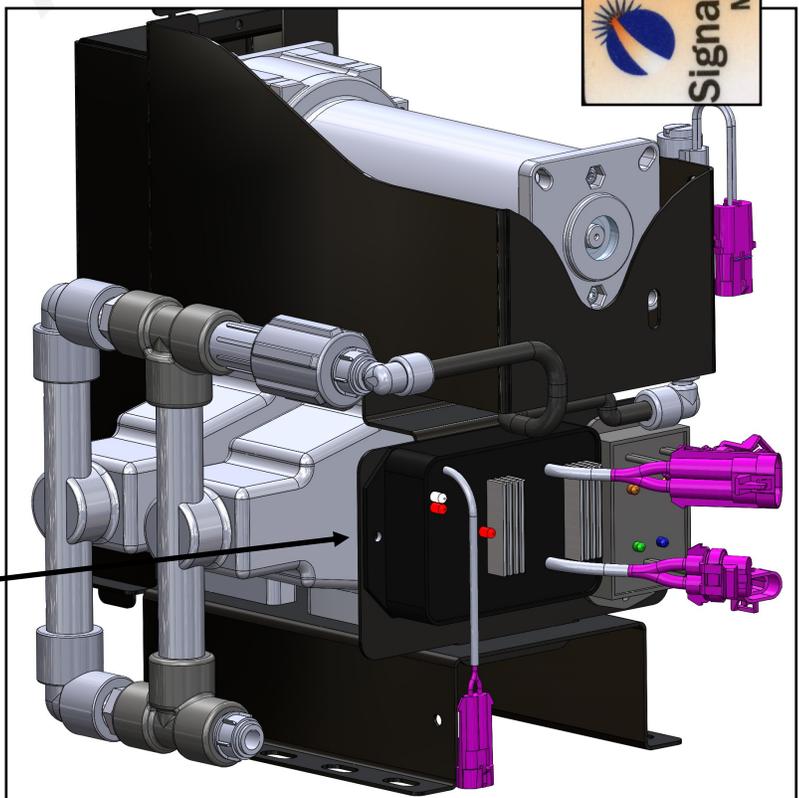
Blue- should be ON when system is running. Indicates Signal Conditioner is sending out pulses to controller.

Yellow-Quick pulses while system is running indicates it is receiving pulses from the RPM sensor on the pump shaft.

Red-should be OFF. Red light ON indicates that float is down or is malfunctioning if fluid is flowing. Red light ON means no pulses are being sent to the controller. (When Red light first comes ON, pulses will be sent for about 10 seconds). To bypass the float (Flow Switch) unplug Flow Switch connector from Float connector on Signal Conditioner, and plug jumper into Float connector. Red light should go out.

**Lights on EPD module:**

Red light by fins-steady blink (once per second) indicates power from battery. When system is running, this light goes steady red, and red light in corner turns on (maybe not as bright) indicating PWM signal.



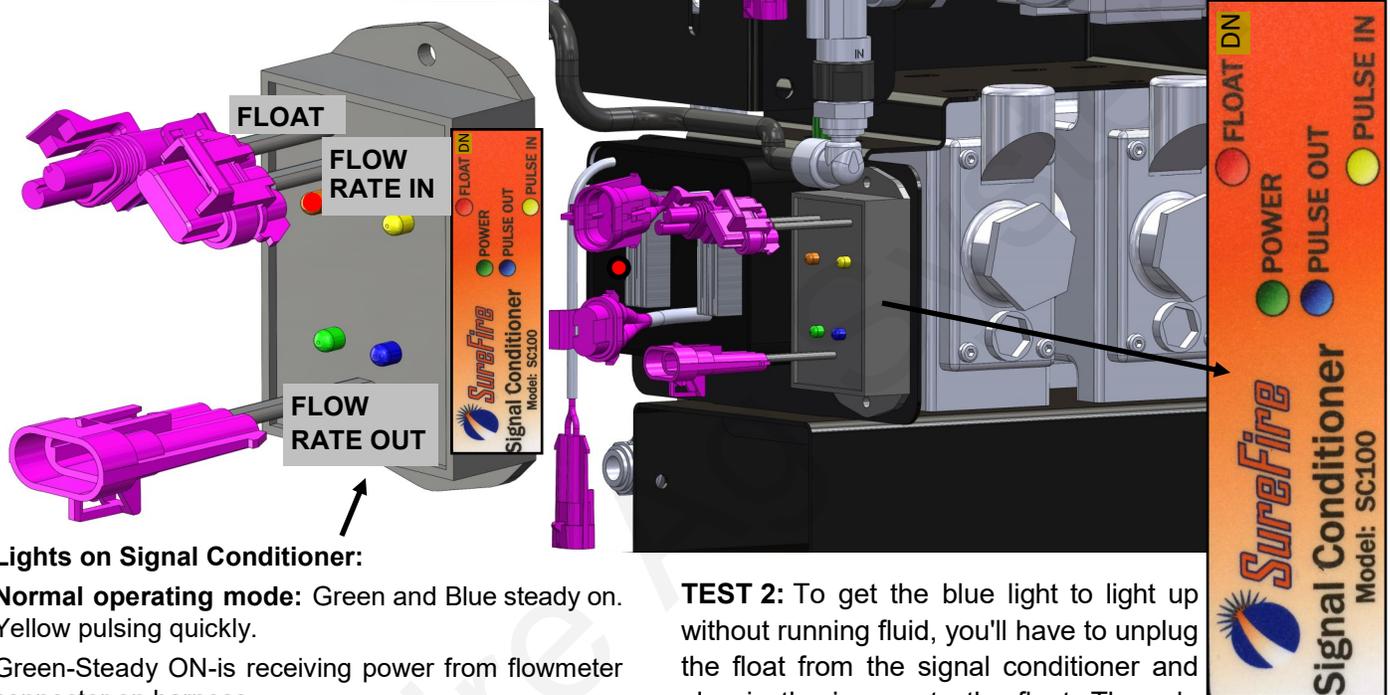
## Spartan Tap Test and Signal Conditioner Lights

### ISSUE: No yellow or blue lights on Signal Conditioner and No flow reading on display

**TEST 1:** Unplug the connector where the cable from the shaft sensor plugs into the signal conditioner (Flow rate in). On that Flow Rate In connector take a short wire and tap repeatedly between the two outside pins. You should get the yellow light to light up. If it doesn't, we probably aren't getting pulses from the shaft sensor.

It could also be a problem with the signal conditioner.

See Test 2 and Test 3.



#### Lights on Signal Conditioner:

**Normal operating mode:** Green and Blue steady on. Yellow pulsing quickly.

Green—Steady ON—is receiving power from flowmeter connector on harness.

Blue— should be ON when system is running. Indicates Signal Conditioner is sending out pulses to controller.

Yellow—Quick pulses while system is running indicates it is receiving pulses from the RPM sensor on the pump shaft.

Red—should be OFF. Red light ON indicates that float is down or is malfunctioning if fluid is flowing. Red light ON means no pulses are being sent to the controller. (When Red light first comes ON, pulses will be sent for about 10 seconds). To bypass the float (Flow Switch) unplug Flow Switch connector from Float connector on Signal Conditioner, and plug jumper into Float connector. Red light should go out.

#### Lights on EPD module:

Red light by fins—steady blink (once per second) indicates power from battery. When system is running, this light goes steady red, and red light in corner turns on (maybe not as bright) indicating PWM signal.

**TEST 2:** To get the blue light to light up without running fluid, you'll have to unplug the float from the signal conditioner and plug in the jumper to the float. Then do that tap test, and it should light up the yellow, showing that the conditioner is receiving pulses, and should light up the blue, to show that the conditioner is sending pulses out.

You should be able to see these pulses in this second test on the display. On Sentinel, look at the Diagnostics Tab for Flowmeter Hz. You have to do quite a bit of tapping to see this. On a Deere display, go to Diagnostics > Readings > Delivery System > Flowmeter Hz. On Trimble and Ag Leader, you can go to Diagnostics and see Flowmeter Pulses.

**TEST 3:** Plug the flowmeter connector on the pump final harness directly into the connector from the shaft sensor. This bypasses the Signal Conditioner and float. When you run the pump, pulses (flow) should register on the display to verify that the shaft sensor is sending out pulses and that the harnessing can get it to the display. Be sure shaft sensor is lined up and close to disc (business card).