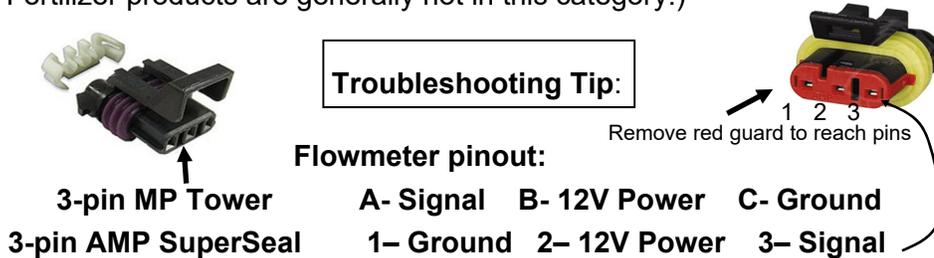


SurePoint Electromagnetic Flowmeter

Flowmeter—The standard flowmeter for a SurePoint liquid system is the SurePoint electromagnetic flowmeter. These flowmeters have no moving parts. The liquid is measured as it flows through the inner tube between two electrodes. These flowmeters are very accurate and do not need to be recalibrated as the density or viscosity of the product changes. (Note: There are a few chemicals that have very low electrical conductivity that the electromagnetic flowmeter will not measure. Fertilizer products are generally not in this category.)



1. **Check for constant 12 V power on the harness that connects to the flowmeter.** (Need power and ground wire— **B & C (1&2)**— Constant 12-13 V-check with voltmeter) Should have 4-5 volts between Signal and Ground.
2. Must get pulse signal from flowmeter back to controller. **Do a Tap Test.**
 - A. Set the flow calibration in the display to 1.
 - B. Hold one end of a wire on Pin A (3). Tap other end of wire repeatedly on Pin C (1). Does a flow register on the display?
 - C. Reset the flow cal on the display when finished with the tap test.
4. If either #1 or #2 above fails, go the next harness connection closer to the controller. Check for voltage there or do a tap test there to locate the harness where the problem is.
5. If a bad harness is found, do a continuity check on the wires in that harness to determine which wire is bad.

Other flowmeter care:

Do not power wash the flowmeter. High pressure spray directed at the back edge of the faceplate or at the wire connector may allow water into the flowmeter electronics.

Before doing any arc welding on the implement, unplug the cable to the flowmeter, or damage to the flowmeter may result.

Beginning in late 2016, SurePoint flowmeters have a black body with an orange label. This is the same electromagnetic flowmeter as before, but with a 3-pin AMP SuperSeal connector on the side of the flowmeter.

Flowmeter Model (Blue or Orange)	Flow Cal Pulses per gallon	Commander II Flow Cal	FPT Size	Hose Barb In kit
*0.08-1.6 GPM	22710	45420	3/4"	3/4"
0.13 - 2.6 GPM	3000	6000	3/4"	3/4"
0.3-5.0 GPM	3000	6000	3/4"	3/4"
0-6 –13 GPM	2000	4000	3/4"	1"
1.3 - 26 GPM	2000	4000	1"	1"
2.6 - 53 GPM	2000	4000	1 1/4"	1 1/2"

*Some flowmeters will not accept a 5-digit Flow Cal, so the 22710 pls/gal must be entered as 177 pls/fl oz (22710 / 128 = 177)

Calibrating the Flowmeter

Typically, the SurePoint flowmeter measures very accurately with the standard flow cal setting. There are times when it may be appropriate to adjust the flow cal for better accuracy.

Catch Test

The SurePoint flowmeter will measure with less than 1% error (as low as 0.5%). A catch test needs to be done very carefully to get results that are good enough for this level of accuracy.

1. Use accurate measuring containers.
2. Catch the product from several rows, the more the better. Larger samples will give better accuracy than smaller samples.
3. Time the test closely. The longer the test runs, the better the accuracy will be.
4. Run the system in a manual mode. Compare the amount caught with the volume indicated by the display.
5. Adjust the flow cal as indicated.

Increase the flow cal number if not enough product is actually being applied.

Decrease the flow cal number if too much product is actually being applied.

Example: The original flow cal number is 3000 pulses/gal. (See formula below)

Display reads 3.6 gallons. Catch test volume caught was 3.3 gallons.

$$3.6 / 3.3 \times 3000 = 3273 \text{ (new flow cal)}$$

Field Verification

Always verify the flow cal setting by comparing the amount actually applied in the field (from weigh tickets or accurate tank measurement) with the amount shown on the display. Adjust the flow cal as needed to get less than 1% difference between the actual amount applied and the amount shown on the display.

Formula to Adjust Flow Cal Number

$$\text{(Volume shown on display)} / \text{(Volume actually applied)} \times \text{flow cal number in display} = \text{new flow cal}$$

Example: Display shows 727 gallons was applied. Tank measurement (or weigh ticket) shows 750 gallons was actually applied. Flow cal number in display was 3000.

$$727 / 750 \times 3000 = 2908 \text{ (new flow cal number to set in display)}$$

(Any adjustments to the flow cal number will only be as accurate as the measurements used in figuring it.)