

MPC-8 CALIBRATE ROTO FLOW METER

Beginning December 1, 2004, All Spectra Watermakers with MPC Controllers shipped with a Rotoflow meter in place of the stroke sensor previously used. Both the stroke sensor and rotoflow meter are used to calculate the product flow and for the SYSTEM STALLED alarm. The Roto flow meter is a flow meter using a magnetic rotor in the product piping. The faster the water flows the faster the rotor spins, much the same as modern knot meters. It is installed in the product line between the membrane outlet and the diversion valve. The MPC will calculate the Gallons (liters) per minute product flow by counting the magnetic pulses from the rotor and applying a Mathematical Constant. If the flow rate drops below approx. 1 GPH (12LPH) the MPC will alarm SYSTEM STALLED.

The Roto flow meter can be retrofitted to older units in place of the Stroke Sensor if desired. The MPC printed circuit board will remain the same but the EEPROM micro chip may need to be updated. Consult your dealer for details. The rotoflow meter connects to the same terminals on the PCB that the stroke sensor used, labeled: STROKE SENSORS, "P" (DC+), "S" (Signal), and "G" (Ground). Red goes to "P" Brown to "S" and Black to "G". The small plastic jumper which is stored on one of the "G/M JP2" prongs must be moved to both of the "Calibrate JP1" prongs so that they are jumped together. Find this jumper by unplugging the ten pin green connector for the pressure switches.

The Roto Flow meter can be calibrated as follows:

MPC-3000: Connect your computer to the PCB using a nine pin connector. Using the Spectra 1.08 Software, available online, make sure that the "Rotor Flow Meter" box is checked. Click "Write". A number will appear in the "Displacement" Box This is the Constant used to calculate the flow. The default Constant is 13578. With the watermaker making water, run the product flow into a measured container and using a timer, determine the actual flow rate. If the flow rate shown on the computer does not match the measured flow, change the constant in the "displacement" box. The up/down buttons change the number by 500 each time they are clicked. Increasing the constant increases the display reading. You have to click "write" for the change to take effect. The display reading is heavily damped so it takes a while for the reading to change. Always check all the parameters in the programming window before closing it to make sure nothing has been changed unintentionally.

MPC-5000: The meter can be calibrated from the display using the program mode, or with a computer as shown for the MPC-3000. To program from the display see the instructions in the owners manual or MPC-5000 field service manual.

If it is suspected that the rotor flow meter has failed or there is a problem in the wiring the rotor flow meter output can be checked with a voltmeter. The output of the meter is an AC square wave frequency. This will show between the "S" and "G" terminals as a voltage around 2.5 volts DC and will also register as an AC voltage. The DC reading will be lower with lower flow and higher with higher flow.

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