

Solutions For Valve Oscillation

C50/C100/C101/C140/C180/810/840

Q. Why is my mass flow controller oscillating as it delivers the gas?

A. A controller that is oscillating or not obtaining its full flow can be the result of one or more of the following:

1. Outlet pressure building up, or downstream flow restriction causing the outlet pressure to rise above the specification listed on the label. Remove unnecessary downstream restrictions and confirm the pressure at the outlet fitting of the controller. Compare to the outlet pressure listed on the label.
2. Inlet pressure different than specified on label and certificate – must be measured close to the controller inlet. Sometimes small lines or restrictions reduce the pressure as the gas approaches the inlet fitting, while an upstream pressure gauge reads a higher, misleading value. Confirm inlet pressure and increase until the proper value (within 15%) is obtained.
3. Regulator problems? Sierra recommends double regulation. A tank regulator is much too coarse to obtain a smooth flow and consistent pressure. Install a second, quality regulator.
4. Icing or freezing of the gas supply line causing inadequate flow to the controller.
5. Inadequate power supply to the controller. Verify required voltage and current in literature.
6. Flow orientation different than labeled. Install controller in the horizontal or vertical orientation as labeled.
7. Valve spring tension out of adjustment. This is adjusted as it leaves the factory but the spring and/or adjustment can change over time. Make a valve spring tension adjustment. Consult user's manual or contact Tech Support.
8. Liquid or other contamination inside the controller's sensor tube or Laminar Flow Element. Inspect and blow out with Air, or use a fast-drying alcohol and blow out or purge. Consult Tech Support if necessary.
9. Set point signal not consistent to the controller.
10. Pulsing gas supply pressure or vacuum due to a pulsing supply or vacuum pump.

Sierra Technical Support
1-800-866-0200

j_oswald@sierrainstruments.com
g_russell@sierrainstruments.com

www.sierrainstruments.com
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