

Dwyer RMA-2-SSV

Dwyer® Rate-Master® Flowmeter RMA-2-SSV User Manual

Model: RMA-2-SSV

1. PRODUCT OVERVIEW

The Dwyer Rate-Master Flowmeter series offers direct reading precision flowmeters designed for general use. These instruments feature direct reading scales, eliminating the need for conversions, and are constructed with a tough, clear, shatter-proof polycarbonate plastic body. The design ensures accurate and repeatable readings, making them suitable for various applications involving compatible gases and liquids.

The flowmeter's scales are made of brushed aluminum, coated with epoxy, and include graduations on both sides of the indicating tube for enhanced visibility. Integral flow guides stabilize the float, preventing erratic movement. The single-piece plastic body is mounted to a stainless steel backbone, which incorporates pipe thread inserts to absorb piping torque during installation.

2. KEY FEATURES

- **Direct Reading Scales:** Eliminates the need for troublesome conversions, providing immediate flow rate readings.
- **Durable Construction:** Injection-molded, clear, shatter-proof polycarbonate plastic body with a stainless steel backbone for robust performance.
- **Stable Float Operation:** Special integral flow guides ensure the float remains stable, preventing hunting or wandering.
- **Versatile Mounting:** Can be neatly through-panel mounted or surface mounted using tapped holes in the backbone.
- **Wide Compatibility:** Suitable for use with compatible gases and liquids.
- **High Visibility:** Float is highly visible against a white background, and scales are clearly marked.

3. SPECIFICATIONS

Parameter	Value
Model Number	RMA-2-SSV

Parameter	Value
Accuracy	4% (Full Scale)
Flow Range	0.1 - 1 SCFH air
Process Connection	1/8" female NPT
Pressure Limit	100 psi (6.9 bar)
Temperature Limit	130°F (54°C)
Service	Compatible gases and liquids
Body Material	Polycarbonate (PC)
Valve Type	Stainless Steel (SS) Valve
Product Dimensions	8 x 8 x 4 inches
Weight	4 ounces

4. INSTALLATION AND SETUP

The Dwyer Rate-Master Flowmeter is designed for flexible installation, supporting both through-panel and surface mounting. All necessary mounting hardware, along with detailed installation and operating instructions, are included with the unit.

4.1 Mounting Options

1. **Through-Panel Mounting:**

For a flush appearance, the flowmeter can be mounted through a panel cutout. The bezel automatically positions the instrument at the correct depth. Ensure the panel cutout dimensions match the specifications provided in the included instructions.

2. **Surface Mounting:**

The unit can be surface mounted on a panel using the tapped holes in the stainless steel backbone. Alternatively, surface mounted units can be held in place by the piping connections themselves, provided they offer sufficient support.

4.2 Piping Connections

The flowmeter features 1/8" female NPT process connections. When connecting piping, ensure proper sealing to prevent leaks. The stainless steel backbone is designed to absorb piping torque, protecting the polycarbonate body from stress. Use appropriate thread sealant and avoid overtightening connections.

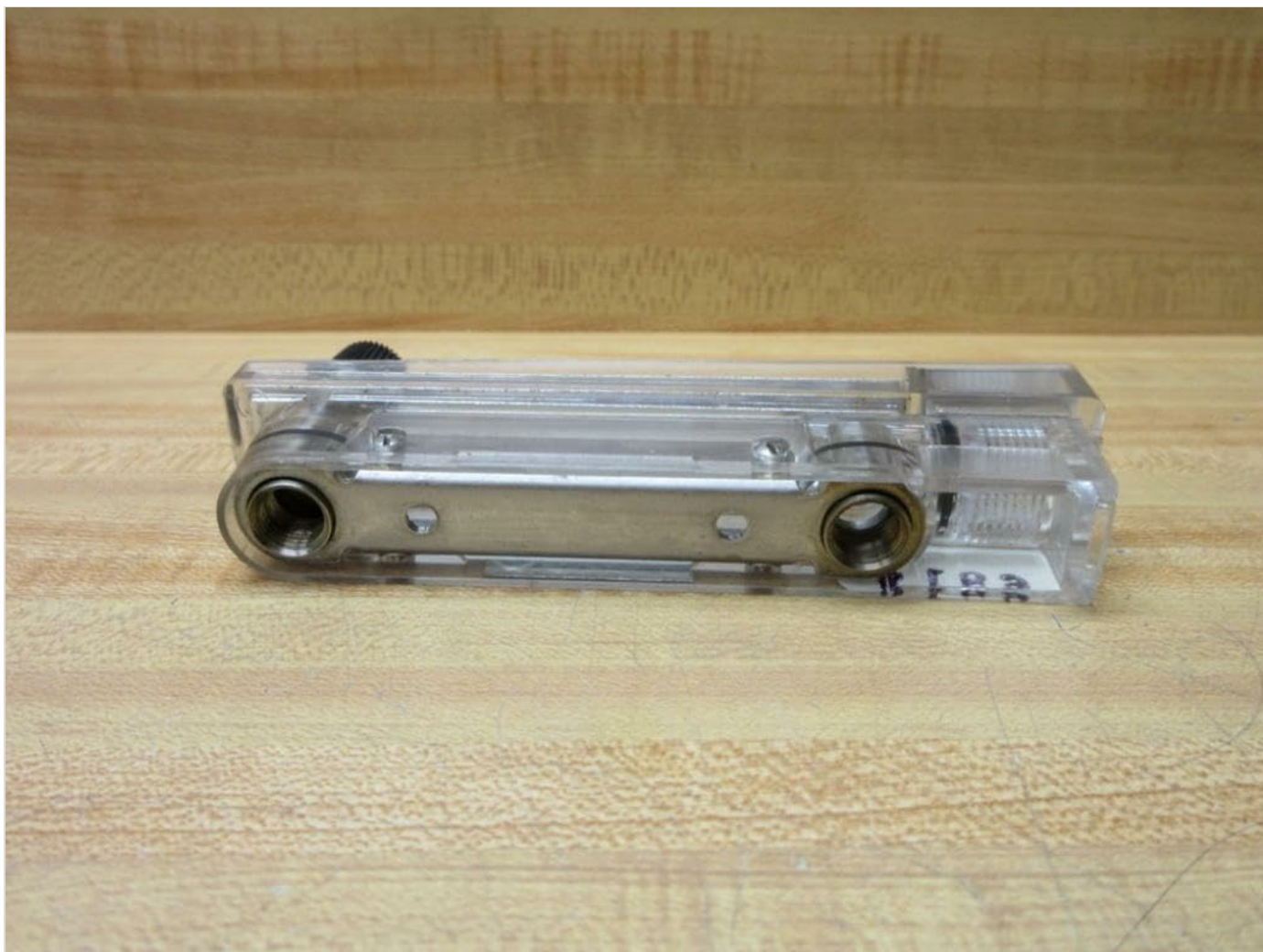


Figure 1: Bottom view of the flowmeter showing the 1/8" female NPT process connections. These connections are integrated into the stainless steel backbone for durability and torque absorption.

5. OPERATING INSTRUCTIONS

The Dwyer Rate-Master Flowmeter provides direct readings of flow rates for compatible gases and liquids. Follow these general guidelines for operation:

1. **Ensure Proper Installation:** Before operation, verify that the flowmeter is securely installed and all piping connections are leak-free.
2. **System Compatibility:** Confirm that the fluid being measured is compatible with the flowmeter's materials (polycarbonate body, stainless steel valve). Refer to the specifications for temperature and pressure limits.
3. **Flow Direction:** Ensure the fluid flows in the correct direction as indicated on the flowmeter (if applicable, typically from bottom to top for vertical flowmeters).
4. **Reading the Scale:** The flow rate is indicated by the position of the float against the brushed aluminum scale. Read the value at the center of the float's widest point. The scales are graduated on both sides for clarity.
5. **Adjusting Flow (if applicable):** If your model includes a stainless steel valve (SSV), use the knob to adjust the flow rate as needed. Turn clockwise to decrease flow and counter-clockwise to increase flow.



Figure 2: Front view of the Dwyer Rate-Master Flowmeter, highlighting the SCFH AIR scale and the integrated adjustment knob for precise flow control.



Figure 3: The Dwyer Rate-Master Flowmeter (RMA-2-SSV) shown alongside a small, possibly protective or accessory component. This image provides a general perspective of the product.

6. MAINTENANCE

The Dwyer Rate-Master Flowmeter is designed for minimal maintenance. However, regular checks can ensure optimal performance and longevity.

- **Cleaning:** Periodically clean the exterior of the flowmeter with a soft, damp cloth. Avoid using abrasive cleaners or solvents that could damage the polycarbonate body or scale markings.
- **Inspection:** Regularly inspect the flowmeter for any signs of damage, cracks in the body, or leaks at the connections. Ensure the scale remains clear and readable.
- **Float Movement:** Verify that the float moves freely within the tube without sticking or excessive friction. If the float movement is impeded, it may indicate contamination or damage.
- **Storage:** If the flowmeter is to be stored for an extended period, ensure it is clean and dry. Store in a cool, dry place away from direct sunlight and extreme temperatures.



Figure 4: Side view of the flowmeter, showing the product label with "CAT. NO. RMA-2-SSV" and manufacturer details. This label is important for identification and maintenance records.

7. TROUBLESHOOTING

This section provides solutions to common issues encountered with the Dwyer Rate-Master Flowmeter.

Problem	Possible Cause & Solution
No Flow Indication	◦ No fluid flow: Verify that the fluid supply is active and valves upstream are open. ◦ Blocked line/filter: Check for blockages in the piping or clogged filters upstream of the flowmeter. ◦ Incorrect installation: Ensure the flowmeter is installed correctly and in the proper flow direction.

Problem	Possible Cause & Solution
Inaccurate Readings	◦ Contamination: Debris or buildup inside the flow tube can affect float movement. Consider cleaning the unit if safe to do so, or consult manufacturer. ◦ Incorrect fluid: Ensure the flowmeter is being used with the specified fluid type (e.g., air for SCFH air models). ◦ Pressure/Temperature outside limits: Operating conditions outside the specified pressure (100 psi) or temperature (130°F) limits can affect accuracy. ◦ Float sticking: Inspect the float for damage or foreign material causing it to stick.
Leaks at Connections	◦ Improper sealing: Ensure thread sealant (e.g., PTFE tape) is properly applied to NPT connections. ◦ Loose connections: Gently tighten connections, being careful not to overtighten and damage the threads or body. ◦ Damaged threads: Inspect the threads on both the flowmeter and piping for damage.

8. WARRANTY AND SUPPORT

For specific warranty information and technical support, please refer to the documentation provided with your purchase or contact Dwyer Instruments, Inc. directly. Contact details can typically be found on the manufacturer's official website or on the product packaging.

Manufacturer: Dwyer Instruments, Inc.

Website: www.dwyer-inst.com (This is a general placeholder, please verify the official website for support)

ASK A QUESTION ABOUT THIS MANUAL

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Example: How do I reset this device or fix this error?

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