

### Gas Flow Transmitters

#### SOLID STATE GAS FLOW TRANSMITTERS

The Alicat Scientific M and V series flowmeters use two of the best-studied physical properties of gases to measure flow: pressure and viscosity. Different pressure measurement, across a laminar flow element, results in a flow meter that is inherently linear. Alicat flow meters measure different pressure within the laminar region, to achieve a turndown of 50:1 typical. Gas units are available with a very wide range of measurement, starting at 500 micro-litres per minute full scale to 1000+ litres per minute full scale in four footprints.



- Full scale ranges from 0.5cm<sup>3</sup>/min to 1000+ L/min
- Response time of 10 milliseconds typical
- Low pressure drop of 10" water column (0.25 mwg) or better
- Turndown ratio of 50:1 typical
- Position insensitive
- Push button tare
- Accuracy of +/- 1% full scale with optional +/- 0.5% full scale

#### M SERIES

The M series "NON-THERMAL" Mass Flowmeters use discrete differential pressure, absolute pressure and temperature sensor measurements within the laminar flow region to determine the mass of flow. The embedded microprocessor provides a software-based STP calculation compensated for pressure and temperature of standard conditions (1 atmosphere 25°Celsius). The M series address the limitations of thermal mass flow technologies, as there is no "Hot Wire" drift. The unit has an adjustable response time starting from 10 milliseconds. The dynamic display shows mass flow, volumetric flow, temperature and absolute pressure simultaneously. With the push button interface, the user can select the primary display, gas of interest (13 standard gases featured), adjust meter response time or tare the meter at zero flow. The optional battery pack makes for a powerful test and calibration tool.

#### V SERIES

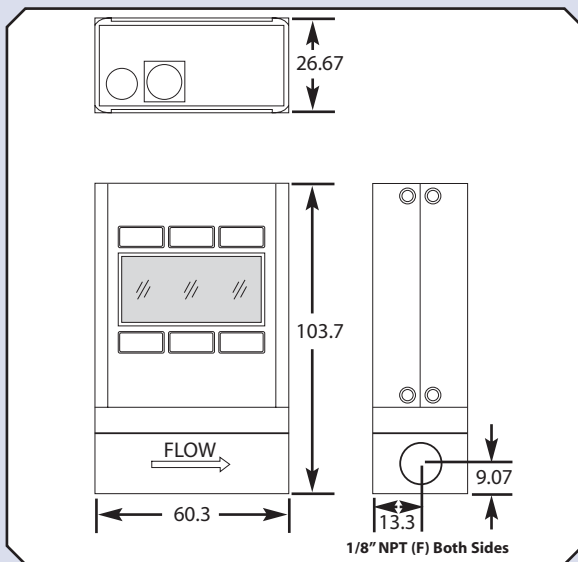
The V series Volumetric Gas Flow are designed for applications venting to atmosphere, with constant backpressure or with little to no backpressure. They do not include absolute pressure or discrete temperature sensors, which makes them an affordable alternative to mass flow meters. As with the M Series, the volumetric flow meters use discrete differential pressure sensor measurements within the laminar flow region to determine flow.

#### OPTIONS

- 13 gas selectability without re-calibration (with display only)
- Special gas blends
- Remote digital displays (RDD)
- Local dynamic digital display (LSPM)
- Customized pressure drop
- Battery pack (creates portable 4 in one test meter)

Specifications Ranges	M	V	Units of Measure	Sample
Accuracy	+/- 1% (0.5% opt)	+/- 1% (0.5% opt)	Full Scale	0.5 (s)cm <sup>3</sup> /min
Repeatability	+/- 0.5%	+/- 0.5%	Full Scale	1 (s)cm <sup>3</sup> /min
Turndown Ratio	50:1	50:1		2 (s)cm <sup>3</sup> /min
Adjustable Response Time	10 +	10+	Milliseconds	5 (s)cm <sup>3</sup> /min
Pressure Drop	0.4	0.4	PSID	10 (s)cm <sup>3</sup> /min
Operating Temperature	0 to +50	0 to +50	°C	20 (s)cm <sup>3</sup> /min
Zero Shift	0.02% / ATM	0.02%	Full Scale / °C	50 (s)cm <sup>3</sup> /min
Span Shift	0.02% / ATM	0.02%	Full Scale / °C	100 (s)cm <sup>3</sup> /min
Humidity Range	0 - 100%	0 - 100%	Non-Condensing	200 (s)cm <sup>3</sup> /min
Excess Flow Rate	2.4%	2.4%	Full Scale	500 (s)cm <sup>3</sup> /min
Maximum Pressure	125	125	PSIG	1 (s)L/min
Supply Current (Typical)	30	30	Milliamp	2 (s)L/min
Supply Voltage	7 - 30	7 - 30	Volts dc	5 (s)L/min
Output and/or Input	0 - 5Vdc, 0 - 10 Vdc, 4 - 20mA, Rs - 232		Volts dc	10 (s)L/min
Electrical Connections	8 pin	8 pin	Circular Mini DIN	20 (s)L/min
Mechanical Connections	1/8" for 20LPM & under 1/4" for 50 & 100 L/min 1/2" for 250 - 1000 L/min 1" for 1000 L/min+		NPTF	50 (s)L/min 100 (s)L/min 250 (s)L/min 500 (s)L/min
Wetted Materials	Anodized AL, 303 & 302 Stainless Steel, Viton®, Silicone RTV, Glass Reinforced Nylon			1000 (s)L/min 2000 (s)L/min

#### W AND V SERIES GAS FLOW METERS 0-20 (S)L/MIN TYPICAL



#### DIMENSIONS

Flow Range (s)l/min	Height mm	Length mm	Depth mm	Port Size NPT (F)
<20*	103.7	60.3	26.7	1/8"
20+ to 50	105.6	66.7	26.7	1/4"
50+ to 100	109.7	88.9	40.6	1/4"
100+ to 1000	131.9	119.4	40.6	1/2"

\* Very low flow devices may have special ports to reduce dead volume.

Every effort has been made during the preparation of this document to ensure the accuracy of statements and specifications. However, we do not accept liability for damage, injury, loss or expense caused by errors or omissions made. We reserve the right to withdraw or amend products or documentation without notice.

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