

## AWM3000 Series



Figure 1 is a technical drawing of a mechanical part, likely a bracket or support, showing dimensions in inches. The part has a base with a central rectangular cutout and two vertical supports on either side. Dimensions include overall width (12.0), overall height (30.5), and various internal features like holes and fillets.

- Laser trimmed for interchangeability
- Flow sensing up to 1.0 LPM
- 5 VDC output @ laser trim point
- 1 VDC null voltage
- 8 to 15 VDC excitation
- 3m sec. response time
- -25 to 85°C temperature range
- Ratiometric output voltage

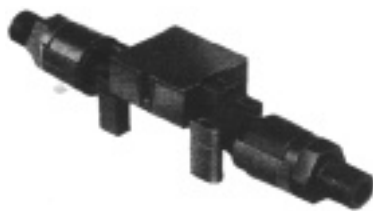
Dust contamination is possible in some airflow applications, but can be minimized. Dust particles in the airstream flow past the chip parallel to its surface. In addition, the microstructure is kept clean by a thermophoretic effect, which impels the micrometer-sized dust particles away from the structure. In an accelerated operating life test, with less than 50 sccm flow, a lifetime equivalent to over 20 years in a typical industrial air environment was achieved with no degradation of sensor response.

Two Wheatstone bridges control airflow measurement – one provides closed loop heater control, the other contains the twin sensing elements. The heater circuitry, operational amplifier, and precision thick-film resistors are located on the ceramic substrate. Ambient temperature is sensed by a similar heatsunk resistor on the chip.

Clogging due to dust adherence to chip edges and channel surfaces can be substantially eliminated through the use of a simple filter. The optimum filtering action is obtained with a low impedance filter in series with the small cross-section and high flow impedance of the channel. This permits a large accumulation of dust in the filter without significant change in the combined impedance. Where filtering is desired, a disposable five-micron filter may be used upstream of the flow sensor.

Catalog Listing	Flow Range	Null Voltage Shift – 25 to 85°C	Output Voltage Shift 25 to – 25°C 25 to 85°C	Repeatability & Hysteresis
<b>AWM3200V</b>	+ 60 sccm, (± 20 scc.)/ + 2.0 " H <sub>2</sub> O	± 100 mV	+ 24.00% F.S.O. – 7.0% F.S.O.	± 0.50% F.S.O. max.
<b>AWM3100V</b>	+ 200 sccm/ + 2.0 " H <sub>2</sub> O	± 50 mV	+ 6.0% F.S.O. – 24.0% F.S.O.	± 0.50% F.S.O. max.
<b>AWM3300V</b>	+ 1000 sccm/ + 1.3 ± 1 " H <sub>2</sub> O	± 50 mV	+ 6.5% F.S.O. – 9.0% F.S.O. type	± 1% F.S.O. typ.

## AWM5000 Series



- Variety of flow connections possible
- Venturi design
- Remote mount
- Active laser trimmed to CO<sub>2</sub>, N<sub>2</sub> or argon calibration
- 8 to 15 VDC excitation
- Linear output, 1 to 5 VDC
- -20 to 70°C temperature range
- Null output, 1 VDC

AWM5000 Series Microbridge Mass Airflow Sensors feature a venturi type flow housing. They measure flow as high as 20 standard liters per minute (SLPM) while inducing a maximum pressure drop of 2.25" H<sub>2</sub>O. The microbridge chip is in direct contact with the flow stream, greatly reducing error possibilities due to orifice or bypass channel clogging.

Catalog Listing	Flow Range
AWM5101VA	5 SLPM, Argon calibration
AWM5101VC	5 SLPM, CO <sub>2</sub> calibration
AWM5101VN	5 SLPM, N <sub>2</sub> calibration
AWM5102VA	10 SLPM, Argon calibration
AWM5102VC	10 SLPM, CO <sub>2</sub> calibration
AWM5102VN	10 SLPM, N <sub>2</sub> calibration
AWM5103VA	15 SLPM, Argon calibration
AWM5103VC	15 SLPM, CO <sub>2</sub> calibration
AWM5103VN	15 SLPM, N <sub>2</sub> calibration
AWM5104VA	20 SLPM, Argon calibration
AWM5104VC	20 SLPM, CO <sub>2</sub> calibration
AWM5104VN	20 SLPM, N <sub>2</sub> calibration