

Airflow Sensors Line Guide



Go with the flow of engineering leadership. All airflow sensors operate on heat transfer — flow and differential pressure. But Honeywell Sensing and Control (S&C) offers advanced chip design, manufacturing techniques and microstructure technology, allowing our microbridge to be notably faster, smaller and more sensitive. Our silicon chip design is created from a thin-film, thermally isolated bridge structure, containing both heater

and temperature sensing elements. This provides rapid response to the air or gas flow and amount and direction, delivering a proportional output voltage. Amplified versions provide an enhanced output signal and less external circuitry, while unamplified versions allow additional external circuit options. What's more, a variety of port styles provides greater application flexibility.

FEATURES

AIRFLOW SENSORS

AWM1000 Series.

Features: Precision silicon micromachining • Sensitivity to low flows (0.1 SCCM to 200 SLPM) • Enhanced response time • Low power consumption • Analog output • Cost-effective • Bi-directional sensing capability • Low differential pressure sensing • Sensor to sensor interchangeability • Unamplified • Laser trimmed • Mass flow and differential pressure sensing

Benefits: Cost-effective microbridge technology for potential applications including HVAC damper control, process control, respirators, oxygen concentrators, gas metering, and chromatography. Differential amplifier circuitry provides output gain and/or introduces voltage offsets to sensor output.

AWM2000 Series.

Features: Precision silicon micromachining • Sensitivity to low flows (0.1 SCCM to 200 SLPM) • Enhanced response time • Low power consumption • Analog output • Cost-effective • Bi-directional sensing capability • Low differential pressure sensing • Actual mass airflow sensing • Unamplified • Laser trimmed • Sensor to sensor interchangeability • Mass flow and differential pressure sensing

Benefits: Cost-effective microbridge technology for potential applications including process control, respirators, ventilators, oxygen concentrators, and leak detection equipment. Differential amplifier circuitry provides output gain and/or introduces voltage offsets to sensor output.

AWM3000 Series.

Features: Precision silicon micromachining • Sensitivity to low flows (0.1 SCCM to 200 SLPM) • Fast response time • Low power consumption • Analog output • Cost-effective • Low differential pressure sensing • Laser trimmed • Amplified • Actual mass airflow sensing • Mass flow and differential pressure sensing • Sensor to sensor interchangeability

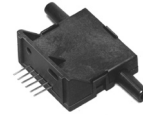
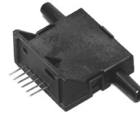
Benefits: Amplified signal conditioning increases gain and introduces voltage offsets to sensor output. On board heater control circuit. Laser trimmed for improved sensor interchangeability. Potential applications include HVAC damper control, process control, respirators, leak detection equipment, gas metering, and chromatography.

Airflow Sensors Line Guide

Our technology is most sensitive to your needs.

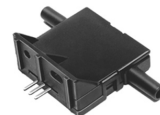
Honeywell S&C offers specially crafted airflow sensor housings to precisely direct and control the airflow across the element. The mechanical package design allows easy mounting to circuit boards, plus other advantages: amplified or un-amplified microbridge airflow; state-of-the-art silicon micromachining; sensitivity to low flows (0.1 SCCM to 200 SLPM); accurate low pressure sensing 0.003 mbar to 10 mbar (0.0001 in H₂O to 4.0 in H₂O); analog output; flow range offering ±30 SCCM to 200 SLPM.

Honeywell S&C airflow sensors offer enhanced performance in multiple potential applications, including HVAC system damper control, gas analysis, leak detection equipment, gas metering and chromatography, process control, and vent hoods. In the medical industry, potential applications range from respiratory equipment such as respirators, spirometers, anesthesia and oxygen delivery to sleep apnea equipment.



Airflow Sensors

	AWM1000 Series	AWM2000 Series
Signal conditioning	unamplified	unamplified
Technology	silicon die	silicon die
Flow/pressure range	±200 SCCM, 1000 SCCM to -600 SCCM, ±5,0 mbar [2.0 in H ₂ O], ±10,0 mbar [4.0 in H ₂ O]	±30 SCCM, ±1000 SCCM, ±10,0 mbar [4.0 in H ₂ O]
Power consumption	30 mW typ.	30 mW typ.
Port style	straight	straight
Media capability	dry gas only	dry gas only
Operating temperature range	-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 85 °C [-13 °F to 185 °F]



Airflow Sensors

	AWM3000 Series
Signal conditioning	amplified
Technology	silicon die
Flow/pressure range	30 SCCM, 200 SCCM, 1000 SCCM, 0 mbar to 1,25 mbar [0 in H ₂ O to 0.5 in H ₂ O], 0 mbar to 5,0 mbar [0 in H ₂ O to 2 in H ₂ O], 5,0 mbar [2.0 in H ₂ O]
Power consumption	50 mW or 100 mW typ.
Port style	straight
Media capability	dry gas only
Operating temperature range	-25 °C to 85 °C [-13 °F to 185 °F]



Airflow Sensors

AWM5000 Series

AWM700 Series

Signal conditioning	amplified	amplified
Technology	silicon die	silicon die
Flow/pressure range	0 SLPM to 5,0 SLPM, 0 SLPM to 10,0 SLPM, 0 SLPM to 15,0 SLPM, 0 SLPM to 20,0 SLPM	200 SLPM
Power consumption	100 mW max.	60 mW max.
Port style	1/4 in-18 NPT	22 mm tapered
Media capability	dry gas only	dry gas only
Operating temperature range	-20 °C to 70 °C [-4 °F to 158 °F]	-25 °C to 85 °C [-13 °F to 185 °F]



Airflow Sensors

AWM40000 Series

AWM90000 Series

Signal conditioning	unamplified or amplified	unamplified
Technology	silicon die	silicon die
Flow/pressure range	±25,0 SCCM, 1,0 SLPM, 6,0 SLPM	±200 SCCM, ±5,0 mbar [2.0 in H ₂ O]
Power consumption	60 mW max., 75 mW max.	50 mW typ.
Port style	manifold	parallel
Media capability	dry gas only	dry gas only
Operating temperature range	-40 °C to 125 °C [-40 °F to 251 °F] (inclusive)	-25 °C to 85 °C [-13 °F to 185 °F]

AWM5000 Series.

Features: Precision silicon micromachining • Sensitivity to low flows (0.1 SCCM to 200 SLPM) • Enhanced response time • Low power consumption • Analog output • Cost-effective • On-board signal conditioning • Venturi type flow housing • Remote mounting capability • Laser trimmed • “AMP” compatible connector

- Rugged plastic package
- Amplified
- Actual mass airflow sensing
- Mass flow pressure sensing
- Sensor to sensor interchangeability

Benefits: Performs amplification, linearization, temperature compensation, and gas calibration. Separate gas calibration types (nitrogen, carbon dioxide, nitrous oxide or argon). Microbridge chip in direct contact with flow stream reduces error due to orifice or bypass channel clogging. In-line flow measurement potential applications including HVAC damper control, oxygen concentrators, leak detection equipment, gas metering, and chromatography. 1 Vdc to 5 Vdc linear output possible regardless of flow range or calibration gas. Active laser trimming improves interchangeability. AMP-compatible connector often provides reliable connection in demanding applications.

AWM700 Series.

Features: Precision silicon micromachining • Sensitivity to low flows (0.1 SCCM to 200 SLPM) • Enhanced response time • Low power consumption • Analog output • Cost-effective • High flow range capability in a small package • Highly stable null and full-scale • Compact package design • Extremely low hysteresis and repeatability errors • Enhanced response time • Low power consumption • AMP-compatible connector • Amplified • Actual mass airflow sensing • Mass flow and differential pressure sensing • Sensor to sensor interchangeability

Benefits: Performs amplification and temperature compensation. Specially designed bypass flow housing provides in-line flow measurement. Provides combination of enhanced reliability, accuracy, and precision operating characteristics for use in potential medical ventilation equipment and medical and analytical instrumentation applications. Low power consumption for portable devices and battery-powered applications. Enhanced accuracy over life reduces need for recalibration. Snap-in AMP-compatible connector provides reliable connection.

AWM40000 Series.

Features: Precision silicon micromachining • Sensitivity to low flows (0.1 SCCM to 200 SLPM) • Enhanced response time • Low power consumption • Analog output • Cost-effective • Precision silicon micromachining • Enhanced response time • Analog output • Low power consumption • Repeatability response • Laser trimmed • Standard mounting centers • Amplified and unamplified • Actual mass airflow sensing • Mass flow pressure sensing • Sensor to sensor interchangeability

Benefits: Sensitive to low flows, adaptable for use with higher flows for potential applications including process control, respirators, ventilators, oxygen concentrators, gas metering, and chromatography. Low power consumption for portable devices and battery-powered applications. Laser-trimmed thick-film and thin-film resistors designed to provide consistent interchangeability from one device to the next.

AWM90000 Series.

Features: Precision silicon micromachining • Sensitivity to low flows (0.1 SCCM to 200 SLPM) • Fast response time • Low power consumption • Analog output • Cost-effective • Bi-directional sensing capability • Low differential pressure sensing • Low power consumption • Actual mass airflow sensing • Enhanced response time • Unamplified • Mass flow and differential pressure sensing

Benefits: Proven thermal bridge technology. Two versions available, mass flow and differential pressure. Provides ability to customize sensor function for potential applications including HVAC damper control, process control, respirators, ventilators, oxygen concentrators, leak detection equipment, gas metering, and chromatography. Low power consumption for portable devices and battery-powered applications.

Warranty. Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit www.honeywell.com/sensing or call +1-815-235-6847. Email inquiries to info.sc@honeywell.com

 **WARNING**
PERSONAL INJURY

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

 **WARNING**
MISUSE OF DOCUMENTATION

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

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008150-1-EN IL50 GLO
June 2008
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