Honeywell

Honeywell Sensing and Control

AWM5104VN

Airflow Sensor, Signal Conditioning: Amplified; Flow/Pressure Range: 0 SLPM to 20.0 SLPM; Port Style: Threaded, ¼ NPT

Actual product appearance may vary.

Features

- Linear voltage output
- Venturi design
- Remote mounting capability
- Active laser trimming improves interchangeability
- Separate gas calibration types:

-Ar (argon)
-N_2 (nitrogen) or
-CO_2 (carbon dioxide)

Potential Applications

- Damper control for heating, ventilation, and air conditioning systems
- Gas analyzers
- Low vacuum control
- Process control
- Medical respirators and ventilators
- Oxygen concentrators
- Leak detection equipment
- Vent hoods
- Anesthesia control
- Gas metering
- Gas chromatography

Description

In-Line Flow Measurement

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_2O. The microbridge chip is in direct contact with the flow stream, greatly reducing error possibilities due to orifice or bypass channel clogging.

Rugged, Versatile Package

The rugged plastic package has been designed to withstand common mode pressures up to 50 psi, and the small sensing element allows 100 g of shock without compromising performance. The included "AMP" compatible connector provides reliable connection in demanding applications.

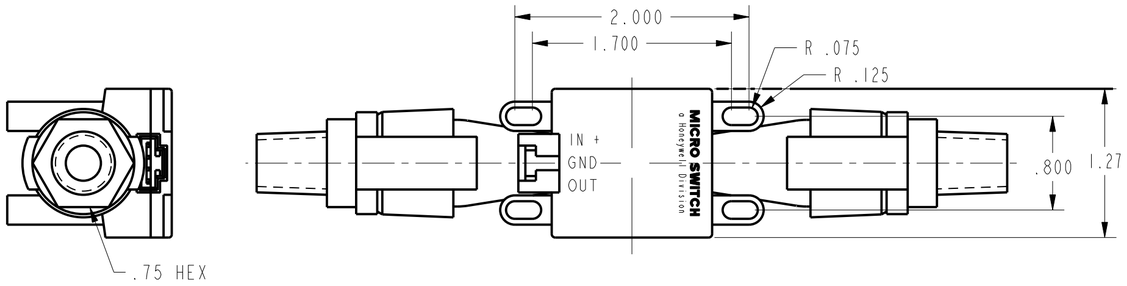
On-board Signal Conditioning

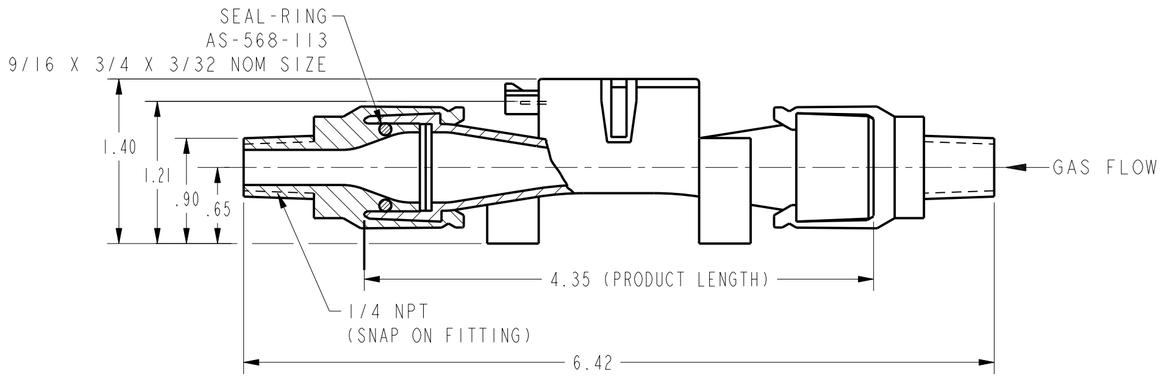
Each AWM5000 sensor contains circuitry which performs amplification, linearization, temperature compensation, and gas calibration. A 1 to 5 Vdc linear output is possible for all listings regardless of flow range (5, 10, 15, or 20 SLPM) or calibration gas (nitrogen, carbon dioxide, nitrous oxide, or argon). All calibration is performed by active laser

CAUTION
PRODUCT DAMAGE
AWM Series Microbridge Mass Airflow Sensors are not designed to sense liquid flow and will be damaged by liquid flow through the sensor.
Failure to comply with these instructions could result in product damage.

Supporting Documentation

Product Specifications	
Signal Conditioning	Amplified
Flow/Pressure Range	0 SLPM to 20.0 SLPM
Output Voltage @ Trim Point	5.0 Vdc @ 20 SLPM
Port Style	1/4 in - 18 NPT
Series Name	AWM5000
Null Shift over Temperature	±0.050 Vdc typ., ±0.20 Vdc max.
Output Shift over Temperature	±7 % Reading
Maximum change in flow rate	5.0 SLPM/s
Max. Repeatability & Hysteresis Error	±0.50% Reading
Null Offset	0.95 Vdc min., 1 Vdc typ., 1.05 Vdc max.
Response Time	60 ms max.
Supply Voltage	8.0 Vdc min., 10.0 Vdc typ., 15.0 Vdc max.
Maximum Common Mode Pressure	50.0 psi
Power Consumption	100 mW max.
Operating Temperature Range	-20 °C to 70 °C [-4 °F to 158 °F]
Storage Temperature Range	-20 °C to 70 °C [-4 °F to 158 °F]
Media Compatibility	Dry gas only
Weight	60 g
Shock	100 g peak 6 ms half-sine (3 drops, each direction of 3 axes)
Availability	Global
Comment	Nitrogen calibration gas. This calibration is identical to using oxygen or air as calibration gas.
UNSPSC Code	411121
UNSPSC Commodity	411121 Transducers





SPECIFICATIONS

RECOMMENDED POWER SUPPLY △1	10.00±.01 VDC
MINIMUM POWER SUPPLY	8.0 VDC
MAXIMUM POWER SUPPLY	15 VDC
POWER CONSUMPTION	100mW MAX
OUTPUT TYPE	LINEAR, 1 TO 5 VDC
CALIBRATION GAS	NITROGEN
GAS FLOW RANGE *	0-20 SLM *
OUTPUT @ LASER TRIM POINT	5 VDC @ FULL SCALE FLOW
DIFFERENTIAL PRESSURE @ FULL SCALE	SEE PRESSURE VS. AIRFLOW CHART
NULL OUTPUT	1.00±.05 VDC
NULL OUTPUT SHIFT, 0 TO +50°C	±.050 VDC TYP, ±.100 VDC MAX
FULL SCALE OUTPUT SHIFT, 0 TO +25°C/+25 TO 50°C	4% / 5% READING MAX
LINEARITY ERROR △2	±3.0% READING
REPEATABILITY & HYSTERESIS	±0.5% READING MAX.
RESPONSE TIME	60.0 mSEC MAX
STORAGE TEMPERATURE RANGE	-20° TO 70°C
OPERATION TEMPERATURE RANGE △5	0° TO 50°C
TERMINATION (.100 CENTERS)	.025 SQUARE
CONNECTOR (4 PIN RECEPTACLE) △3	AMP (103956-3)
WEIGHT	30 GRAMS (2.12OZ)
SHOCK RATING	100 g PEAK, 6 mSEC HALF-SINE (3 DROPS EACH DIRECTION OF 3 AXES)
OVERPRESSURE	50 PSI MAX
LEAK RATE, MAX	0.1 PSI/MIN AT STATIC CONDITION

NOTES

△1 - CANNOT GUARANTEE CALIBRATION AT SUPPLY VOLTAGES OTHER THAN 10.00±.01 VDC

△2 - LINEARITY SPECIFICATION APPLIES FROM 2 TO 100% FULL SCALE OF GAS FLOW RANGE, AND DOES ON APPLY TO NULL OUTPUT AT 0 SLM *

△3 SUPPLIED IN STRIP FORM. OTHER STRIP FORM RECEPTACLES ARE AVAILABLE, AS WELL AS VARIOUS TOOLS TO ASSEMBLE RECEPTACLES IN STRIP FORM. INDIVIDUAL RECEPTACLE ASSEMBLIES ARE ALSO AVAILABLE FROM AMP

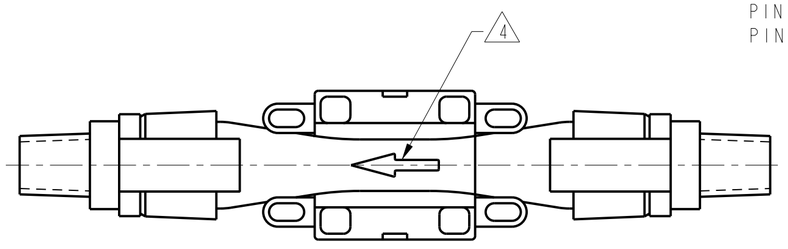
△4 MOLDED-IN ARROW DESIGNATES GAS FLOW DIRECTION

* SLM DENOTES STANDARD LITERS PER MINUTE WHICH IS A FLOW MEASUREMENT REFERENCED TO STANDARD CONDITIONS OF 0°C, 760 TORR (SEA LEVEL), 50% RH

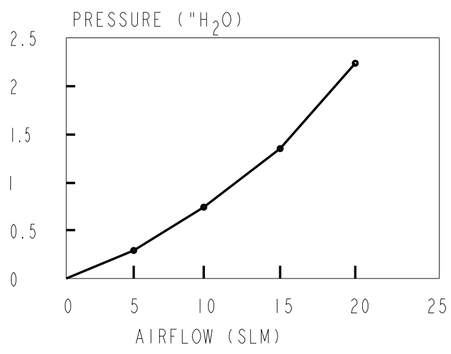
△5 TEMPERATURE TRANSITIONS 1.66°C/MINUTE MAXIMUM WHILE IN OPERATION

OUTPUT CONNECTIONS

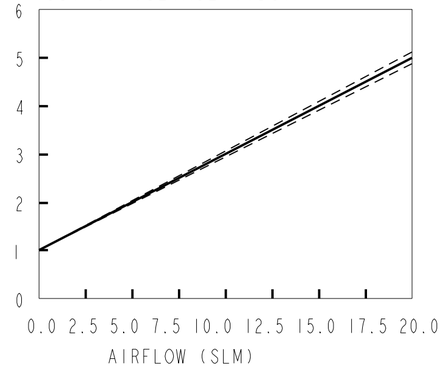
PIN 1 + SUPPLY VOLTAGE
PIN 2 GROUND
PIN 3 NO CONNECTION
PIN 4 OUTPUT VOLTAGE



PRESSURE VS. AIRFLOW



1-5 VDC LINEAR OUTPUT



± 3% READING
MEAN
MIN
MAX

REVISIONS

A	202464	G J W MAR 01	16JAN08
B	0027347	RS 22DEC06	
C	0036560	SSK 16JAN08	CMH

DRAWN	G J W	13 MAR 01	
CHECK		SAV	13 MAR 01
PTC/CAD	2D		

AWM5104VN PAGE 1 OF 1 RELEASE NO. PR-20105 DRAWING NUMBER 6 ISSUE REPLACES X94569-AW

THIRD ANGLE PROJECTION

SCALE FULL

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

ONE PLACE	(.0)	±.030
TWO PLACES	(.00)	±.015
THREE PLACES	(.000)	±.005
ANGLES		±

WEIGHT

MICRO SWITCH a Honeywell Division
FED. MFG. CODE 91929

MASS AIRFLOW SENSOR

CATALOG LISTING
AWM5104VN

ANSI Y14.5M-1982 APPLIES