

FEATURES

- Ranges 0...1000 sccm¹ and 0...6 slpm²
- Actual mass flow sensing
- 1...5 V output
- Manifold mount/o-ring sealed

SERVICE

To be used with dry gases only

The AWM series is NOT designed for liquid flow and will be damaged by liquid flow through the sensor

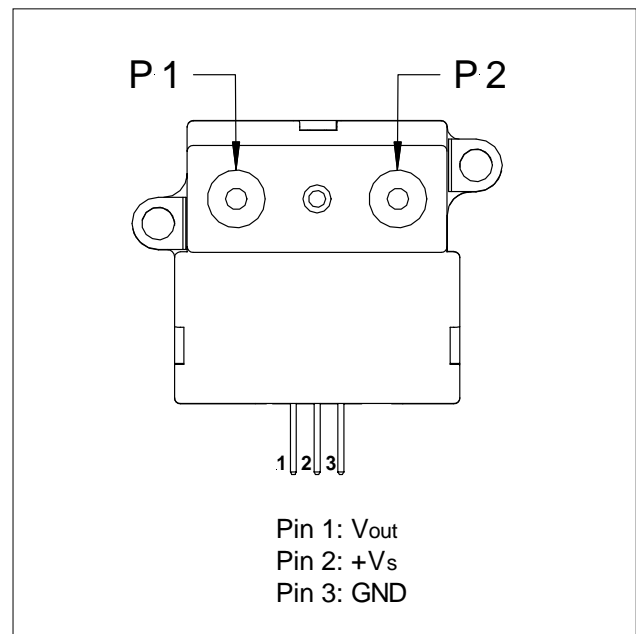


SPECIFICATIONS

Maximum ratings

Supply voltage ³	8 to 15 V typ. 10 ±0.01 V
Power consumption	
AWM43300V	60 mW
AWM43600V	75 mW
Output load	
NPN (Sinking)	10 mA
PNP (Sourcing)	20 mA
Temperature limits	
Operating	-25 to 85°C
Storage	-40 to 90°C
Mechanical shock	100 g (5 drops, 6 axes)

ELECTRICAL CONNECTION



Note:

¹ sccm denotes standard cubic centimeters per minute, 1000 sccm = 1 slpm

² slpm denotes standard liters per minute, which is a flow measurement referenced to standard conditions of 0°C, 1 bar, 50% RH.

³ Output voltage is ratiometric to supply voltage

AWM43000 Series

Mass flow sensor for gases

Honeywell

FLOW SENSOR CHARACTERISTICS⁴

$V_s = 10 \pm 0.01 \text{ V}$, $T_A = 25^\circ\text{C}$

Part no.	Flow range (full scale)	Max. flow change ⁵	Output voltage @ trim point
AWM43300V	1000 sccm ¹	5.0 l/sec	5 \pm 0.15 V @ 1000 sccm ¹
AWM43600V	6 SLPM ²	5.0 l/sec	5 \pm 0.15 V @ 6 SLPM ²

PERFORMANCE CHARACTERISTICS

$V_s = 10 \pm 0.01 \text{ V}$, $T_A = 25^\circ\text{C}$

Characteristics		Min.	Typ.	Max.	Unit	
Zero offset		0.95	1.0	1.05	V	
Repeatability and hysteresis (combined)	AWM43300V			\pm 0.5	% reading	
	AWM43600V			\pm 1.0		
Ratiometricity error ³				\pm 0.3		
Temperature effects ⁶	Offset	-25 to 85 °C		\pm 0.025	V	
	Span	-25 to 25 °C	AWM43300V		-5.0	% reading
			AWM43600V		-6.0	
		25 to 85 °C	AWM43300V		6.0	
AWM43600V				6.0		
Response time			1.0	3.0	ms	
Common mode pressure	AWM43300V			150	psi	
	AWM43600V			25		

Notes:

¹ sccm denotes standard cubic centimeters per minute, 1000 sccm = 1 slpm

² SLPM denotes standard liters per minute, which is a flow measurement referenced to standard conditions of 0°C, 1 bar, 50% RH.

³ Output voltage is ratiometric to supply voltage

⁴ A 5 micron filter is recommended for all devices.

⁵ Maximum allowable rate of flow change to prevent damage.

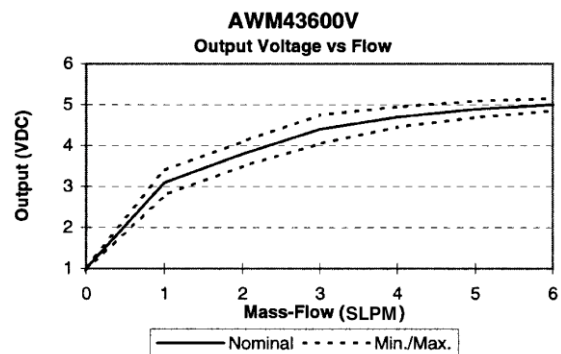
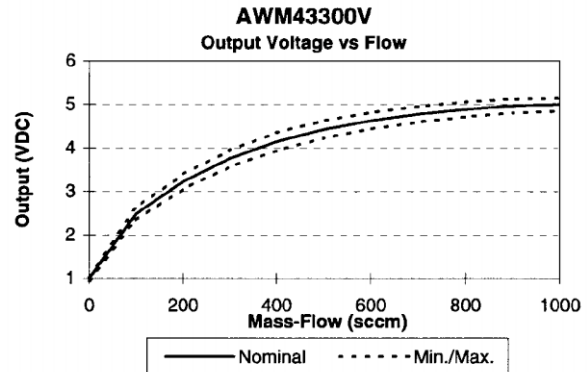
⁶ Shift is relative to 25 °C.

OUTPUT FLOW VS INTERCHANGEABILITY

$V_s = 10 \pm 0.01 \text{ V}$, $T_A = 25^\circ\text{C}$

AWM43300V				AWM43600V			
Press. mBar	Flow sccm	Nom. VDC	Tol. \pm VDC	Press. mBar	Flow SLPM	Nom. VDC	Tol. \pm VDC
2.23	1000	5.00	0.15	20.0	6	5.00	0.15
1.87	900	4.97	0.16	14.7	5	4.89	0.20
1.52	800	4.89	0.17	9.07	4	4.70	0.25
1.16	700	4.78	0.18	6.40	3	4.40	0.35
0.94	600	4.63	0.19	3.35	2	3.80	0.30
0.71	500	4.43	0.20	1.17	1	3.10	0.30
0.50	400	4.15	0.21	0.00	0	1.00	0.05
0.33	300	3.76	0.19				
0.19	200	3.23	0.17				
0.08	100	2.49	0.14				
0.00	0	1.00	0.05				

OUTPUT CURVES



GAS CORRECTION FACTORS⁷

Gas type	Correction factor (approx.)
Helium (He)	0.5 ⁸
Hydrogen (H ₂)	0.7 ^{8,9}
Argon (Ar)	0.95
Nitrogen (N ₂)	1.0
Oxygen (O ₂)	1.0
Air	1.0
Nitric oxide (NO)	1.0
Carbon monoxide (CO)	1.0
Methane (CH ₄)	1.1
Ammonia (NH ₃)	1.1
Nitrous oxide (N ₂ O)	1.35
Nitrogen dioxide (NO ₂)	1.35
Carbon dioxide (CO ₂)	1.35

Notes:

⁷ Gas correction factors are referenced to nitrogen (N₂) as calibration gas type. Approximate gas correction factors are provided as guidelines only. Individual gas types may perform differently at temperature extremes and varying flow rates.

⁸ When sensing Hydrogen (H₂) or Helium (He) it may be necessary to power the mass flow sensor using increased supply voltage: Hydrogen typ. 12 V, Helium typ. 15 V

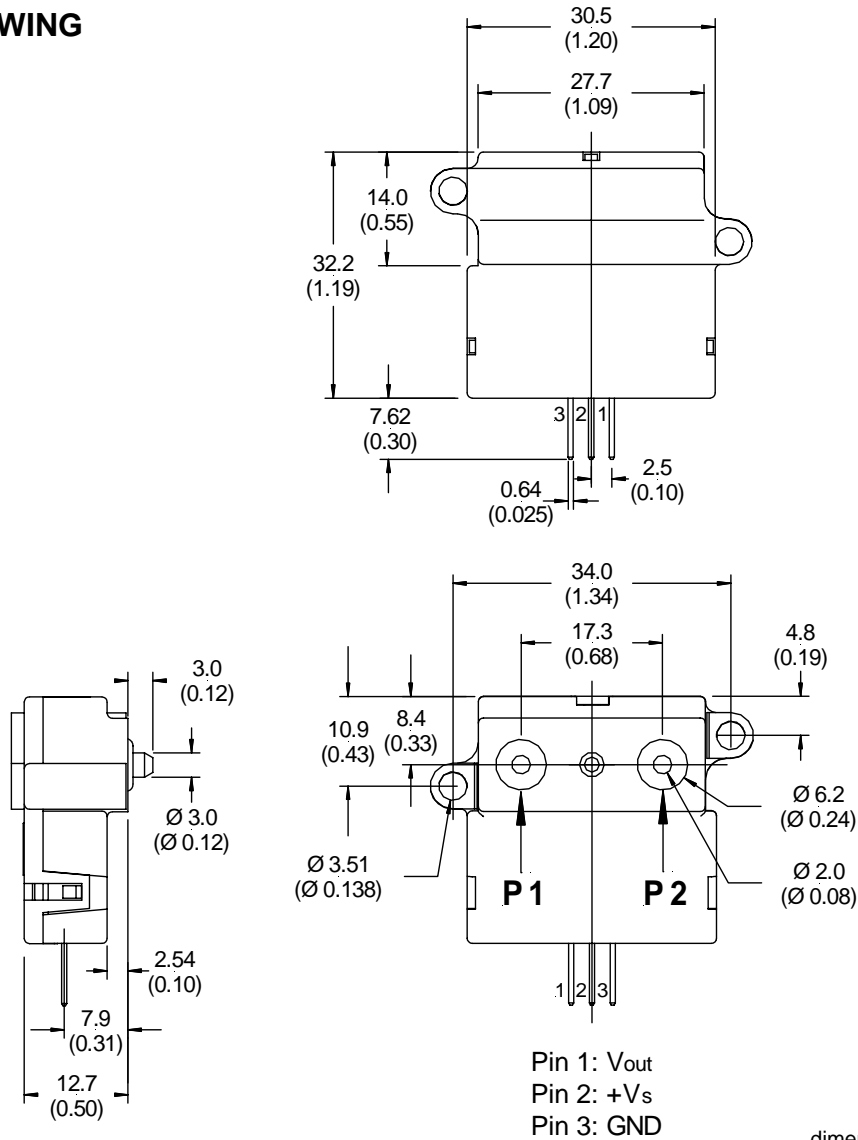
⁹ Hydrogen (H₂) flow measurement requires the use of a special sensor. These devices provide normal operation when sensing hydrogen flow and are designated with an "H" at the end of the order number.

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OUTLINE DRAWING



mass: approx. 11 g

dimensions in mm (inches)

ORDERING INFORMATION

Flow range	Dry gas	Hydrogen gas ⁹
1000 sccm	AWM43300V	AWM43300VH
6 SLPM	AWM43600V	---

Note:

⁹ Hydrogen (H₂) flow measurement requires the use of a special sensor. These devices provide normal operation when sensing hydrogen flow and are designated with an "H" at the end of the order number.

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