Honeywell

Honeywell Sensing and Control

AWM720P1

Actual product appearance may vary.

Airflow Sensor, Signal Conditioning: Amplified; Flow/Pressure Range: 200 SLPM; Port Style: Tapered, 22.0 mm

Features

- Flow tubes for ranges up to 200 SLPM
- Highly stable null and full-scale
- Compact package design
- Extremely low hysteresis and repeatability errors, less than 0.35% of reading
- Fast response time, 6 ms typical
- Low power consumption, less than 60 mW

Potential Applications

- Oxygen concentrators
- Oxygen conservers
- Respirators and ventilators
- Nebulizers
- Continuous positive airway pressure (CPAP) equipment
- Anesthesia delivery
- Leak detection
- Spectroscopy
- Mass flow controllers
- Telecommunications systems
- Environmental climate controls
- Fuel cell controls

Description

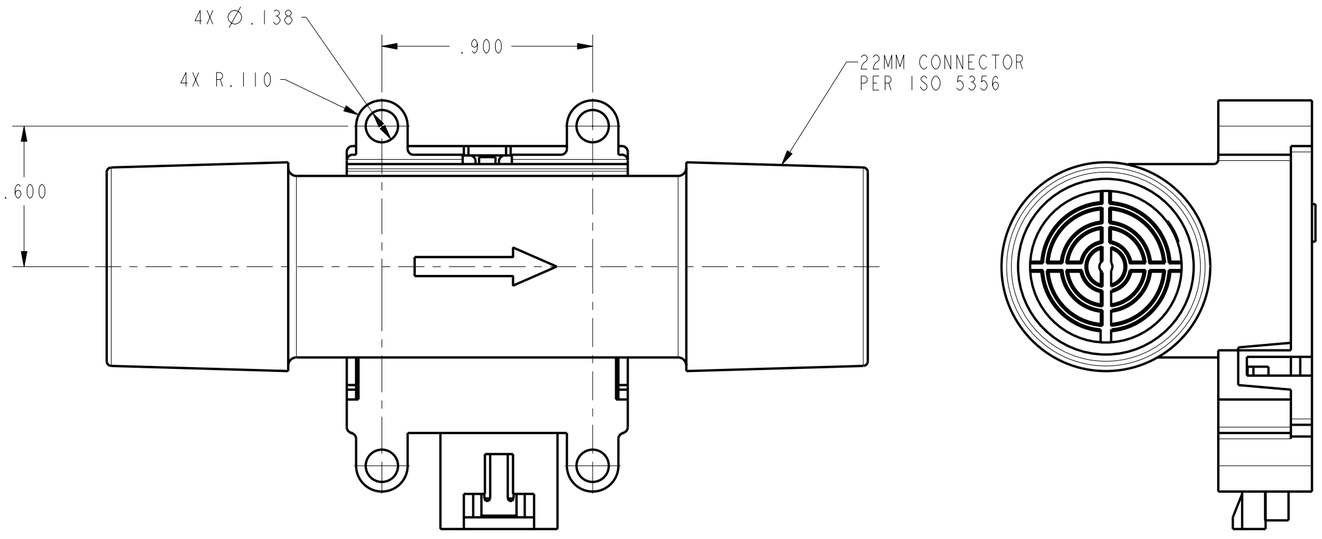
AWM700 Series microbridge mass airflow sensors provide in-line flow measurement with a specially designed bypass flow housing. The sensors measure flow as high as 200 standard liters per minute (SLPM) while inducing a pressure drop of 1 inch H2O, typically. The AWM700 has a high flow range capability in a small package. The sensor has a 6-millisecond response time, requires a 10 Vdc supply, but consumes only 60 mW of power. The compact plastic package withstands overpressures of 25 psi without compromising performance. The snap-in AMP compatible connector provides reliable connection. The sensor is also well suited for use in portable devices and battery-powered applications. The AWM700 Series sensors provide a combination of time proven reliability, high accuracy, and precision operating characteristics for use in the medical ventilation market and medical and analytical instrumentation applications. Its accuracy over life reduces the need for recalibration. AWM700 sensor circuitry performs amplification and temperature compensation.

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.

Product Specifications	
Signal Conditioning	Amplified
Flow/Pressure Range	+ 200 SLPM
Output Voltage @ Trim Point	5.0 Vdc ±0.36 Vdc @ 200 SLPM
Port Style	22 mm tapered
Series Name	AWM700
Null Shift over Temperature	±0.025 Vdc
Output Shift over Temperature	-2 % 25 °C to 10 °C [77 °F to 50 ° F] 2 % 25 °C to 40 °C [77 °F to 104 ° F]
Max. Repeatability & Hysteresis Error	±0.50% Reading
Null Offset	1.0 Vdc ±0.05 Vdc
Response Time	6 ms typ., 10 ms max.
Supply Voltage	8.0 Vdc min., 10.0 Vdc typ., 15.0 Vdc max.
Maximum Common Mode Pressure	25.0 psi
Power Consumption	60 mW max.
Operating Temperature Range	-25 °C to 85 °C [-13 °F to 185 °F]
Storage Temperature Range	-40 °C to 90 °C [-40 °F to 194 °F]
Media Compatibility	Dry gas only
Weight	34 g
Shock	100 g peak (5 drops, 6 axes)
Availability	Global
Comment	Air calibration gas
UNSPSC Code	411121
UNSPSC Commodity	411121 Transducers

FO-52847-F

REV	DOCUMENT	CHANGED BY	CHECK
1	201052	SAV 14AUG00	SAV



FLOW RANGE (FULL SCALE)	+200 SLPM		
	MIN	TYP	MAX	UNITS
EXCITATION (2)	9.990		10.010	Vdc
POWER SUPPLY	8.000	---	15.000	Vdc
POWER CONSUMPTION		60 MAX		mW
OUTPUT LOADING				
SINKING		10		mA
SOURCING		20		mA
CALIBRATION GAS		AIR		
NULL VOLTAGE SHIFT				
+25 TO -25°C, +25 TO +85°C		±.025 TYP		Vdc
FULL SCALE OUTPUT SHIFT				
+25 TO +10 °C		-2.0		%READING
+25 TO +40°C		+2.0		%READING
RATIOMETRICITY ERROR (2)		±0.30 TYP		%READING
REPEATABILITY & HYSTERESIS		±0.50 MAX		%READING
RESPONSE TIME (1)		6 TYP		mSEC
PRESSURE DROP @ FULL SCALE		1.0 (2.5) TYP		"H2O (mBAR)
OVERPRESSURE		1.7 MAX		Bar
TEMPERATURE RANGE				
OPERATING		-25 TO +85°C (-13 TO +185°F)		
STORAGE		-40 TO +90°C (-40 TO +190°F)		
WEIGHT		34 (1.20)		GRAM (OZ)
CONNECTOR - 4 PIN RECEPTACLE		HONEYWELL SSI2143 / AMP 103956-3		

FLOW SPECIFICATIONS	FLOW (SLPM)	NOMINAL (Vdc)	±TOL (Vdc)
	0	1.000	0.05
	25	2.99	TYP
	50	3.82	0.18
	75	4.30	TYP
	100	4.58	TYP
	150	4.86	TYP
	200	5.000	0.36

1) RESPONSE TIME IS TYPICALLY 6 mS FROM 10 TO 90%.
2) OUTPUT VOLTAGE IS RATIOMETRIC TO SUPPLY VOLTAGE.

NOTES
1. PIN 1 = N/A
   PIN 2 = V-
   PIN 3 = V+ (10V DC NOMINAL)
   PIN 4 = OUTPUT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: [X] US(inch) CUSTOMARY [ ] SI(mm) METRIC

NO PLACE	X	±.040	±1
ONE PLACE	.X	±.030	±0,4
TWO PLACE	.XX	±.015	±0,15
THREE PLACE	.XXX	±.005	±
ANGLES		±	±

RAW MATERIAL-COMMERCIAL STANDARD

THIRD ANGLE PROJECTION

DRAWN	SAV	14AUG00
CHECK	SAV	14AUG00

DIMENSIONS ARE TO BE MET BEFORE PROTECTIVE COATINGS ARE APPLIED

3D PTC | ASME Y14.5M-1994

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Sensing and Control

TITLE
MASS AIRFLOW SENSOR (200 LPM)

SIZE	DWG TYPE	DRAWING NAME	REV
C	M	AWM720P1	1

SCALE 2:1 | WEIGHT | SHEET 1 OF 1