AWM3300V

Airflow Sensor, Signal Conditioning: Amplified; Flow/Pressure Range: + 1000 sccm (1.0 SLPM); Port Style: Straight

Actual product appearance may vary.

Features

- Laser trimmed for improved sensor interchangeability
- Flow sensing up to 1.0 SLPM
- Low differential pressure sensing

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

Like the AWM2000 Series, the dual Wheatstone bridges control airflow measurement. The AWM3000 Series is amplified; therefore, it can be used to increase the gain and to introduce voltage offsets to the sensor output. The heater control circuit and the sensing bridge supply circuit are on board the package.

> **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.
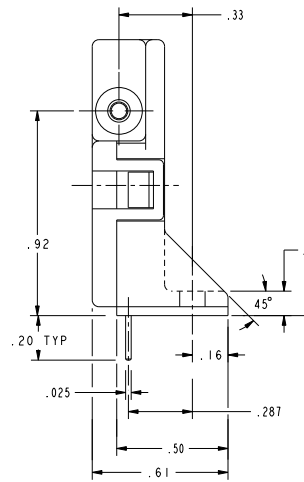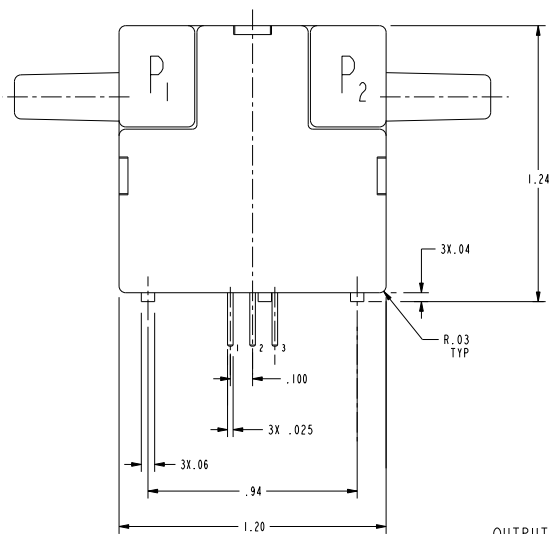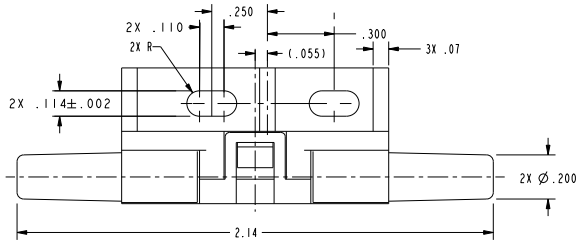> **Failure to comply with these instructions could result in product damage.**

Product Specifications

Signal Conditioning	Amplified
Flow/Pressure Range	1000 sccm (1.0 SLPM)
Output Voltage @ Trim Point	5.0 Vdc @ 1000 sccm (1.0 SLPM)
Port Style	Straight
Series Name	AWM3000
Null Shift over Temperature	±25.0 mV dc
Output Shift over Temperature	±5 % Reading
Maximum change in flow rate	5.0 SLPM/s
Max. Repeatability & Hysteresis Error	±1% Reading
Null Offset	1.00 Vdc ±0.10 Vdc
Response Time	1 ms typ., 3 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	50 mW typ., 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	10.8 g
Shock	100 g peak (5 drops, 6 axes)
Availability	Global
UNSPSC Code	411121
UNSPSC Commodity	411121 Transducers

FO-55112-B

HONEYWELL
PART NUMBER
AWM3300V

REV	DOCUMENT	CHANGED BY	CHECK
6	0013772	RS 21JUN05	AK

SPECIFICATIONS:

SPECIFICATIONS:	AWM3300V
RECOMMENDED EXCITATION	10.00 ± .01VDC
POWER CONSUMPTION	60mW MAX
OUTPUT VOLTAGE @ LASER TRIM POINT	5.00 VDC @ 1000 sccm
NULL VOLTAGE	1.00 ± .10 VDC
NULL VOLTAGE SHIFT (-25°C TO +85°C)	± 25mV
OUTPUT VOLTAGE SHIFT (+25°C TO -25°C)	-5% READING MAX
(+25°C TO +85°C)	+5% READING MAX
REPEATABILITY & HYSTERESIS	±1.0% READING TYP
RESPONSE TIME	3.0 msec MAX
OPERATING TEMPERATURE RANGE	-25° C TO +85° C
STORAGE TEMPERATURE RANGE	-40° C TO +90° C
TERMINATION (ON .100 CENTERS)	0.025 SQ. IN.
WEIGHT	10.8 GRAMS
SHOCK RATING (5 DROPS, EACH OF 6 AXES)	100G PEAK
OVERPRESSURE	25 psi MAX

AWM3300V
OUTPUT FLOW VS. INTERCHANGEABILITY

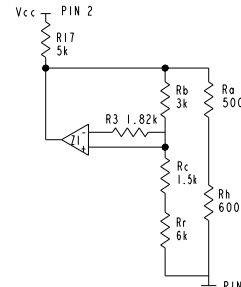| FLOW sccm	NOMINAL (VDC)	TOL. (±VDC)
1000	5.00	0.15
900	4.90	0.16
800	4.80	0.17
700	4.66	0.18
600	4.42	0.19
500	4.18	0.20
400	3.82	0.21
300	3.41	0.19
200	2.96	0.17
100	2.30	0.14
0	1.00	0.10

2X .110
.250
2X R
(.055)
.300
3X .07
2X .114±.002
2.14
2X Ø.200

P1   P2

.33
1.24
3X.04
.92
.11
45°
R.03 TYP
.20 TYP
.16
3X.025
.100
.025
.287
3X.06
.50
.94
.61
1.20

HEATER CONTROL CIRCUIT

Vcc PIN 2
R17 5k
R3 1.82k
Rb 3k
Ra 500
Rc 1.5k
Rh 600
Rr 6k
PIN 3

SENSING BRIDGE SUPPLY CIRCUIT AND
DIFFERENTIAL INSTRUMENTATION AMPLIFIER
AMPLIFIER (ON BOARD)

SENSING BRIDGE (ON BOARD)
Vcc PIN 2
R6 100k
R14 300k
R8 3k
R10 25k
R9 25k
R4 20k
Ru 1.5k
Rd 1.5k
R7 84k
PIN 1 Vout
PIN 2 Vcc
R12 100k
R15 280k
R16 3.3k
R5 100k
R11 10k
PIN 3

OUTPUT CONNECTIONS

PIN 1   OUTPUT VOLTAGE
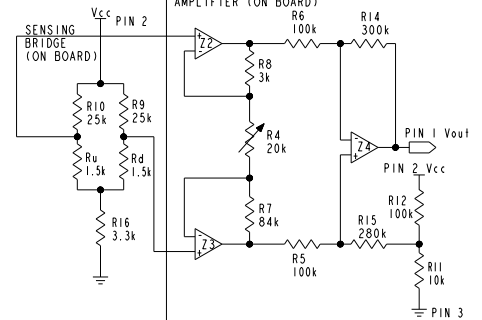PIN 2   + SUPPLY VOLTAGE
PIN 3   GROUND

REPLACES: X89614-AW

NOTES
1 - POSITIVE FLOW DIRECTION IS DEFINED AS PROCEEDING
    FROM P1 TO P2 AND RESULTS IN POSITIVE OUTPUT
    (PIN 1 > PIN 3). NEGATIVE FLOW DIRECTION IS DEFINED
    CONVERSELY AND RESULTS IN NEGATIVE OUTPUT (PIN 1 < PIN 3).

DESIGN UNITS: INCH		
TOLERANCES UNLESS NOTED:		

DRAWN	LKJ	26SEP02
CHECK	SAV	26SEP02

NO PLACE   X   ±
ONE PLACE   .X   ±   .030
TWO PLACE   .XX ±   .015
THREE PLACE .XXX ±   .005
FOUR PLACE .XXXX ±
ANGLES   X   ±

THIRD ANGLE PROJECTION

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Honeywell

TITLE
MASS AIRFLOW SENSOR

INTERPRET PER ANSI Y14.5M-1982
OTHER HONEYWELL ENGINEERING
STANDARDS MAY APPLY

SIZE	TYPE	DRAWING NAME	REV
C	1	AWM3300V	6

Pro/ENGINEER   2D | SCALE   3:1 | SHEET   1 OF 1