



AWM2150V



Airflow Sensor, Signal Conditioning:
Unamplified (mV); Flow/Pressure
Range: ± 30.0 sccm; Port Style: Straight

Actual product appearance may vary.

Features

- Bidirectional sensing capability
- Actual mass air flow sensing
- 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

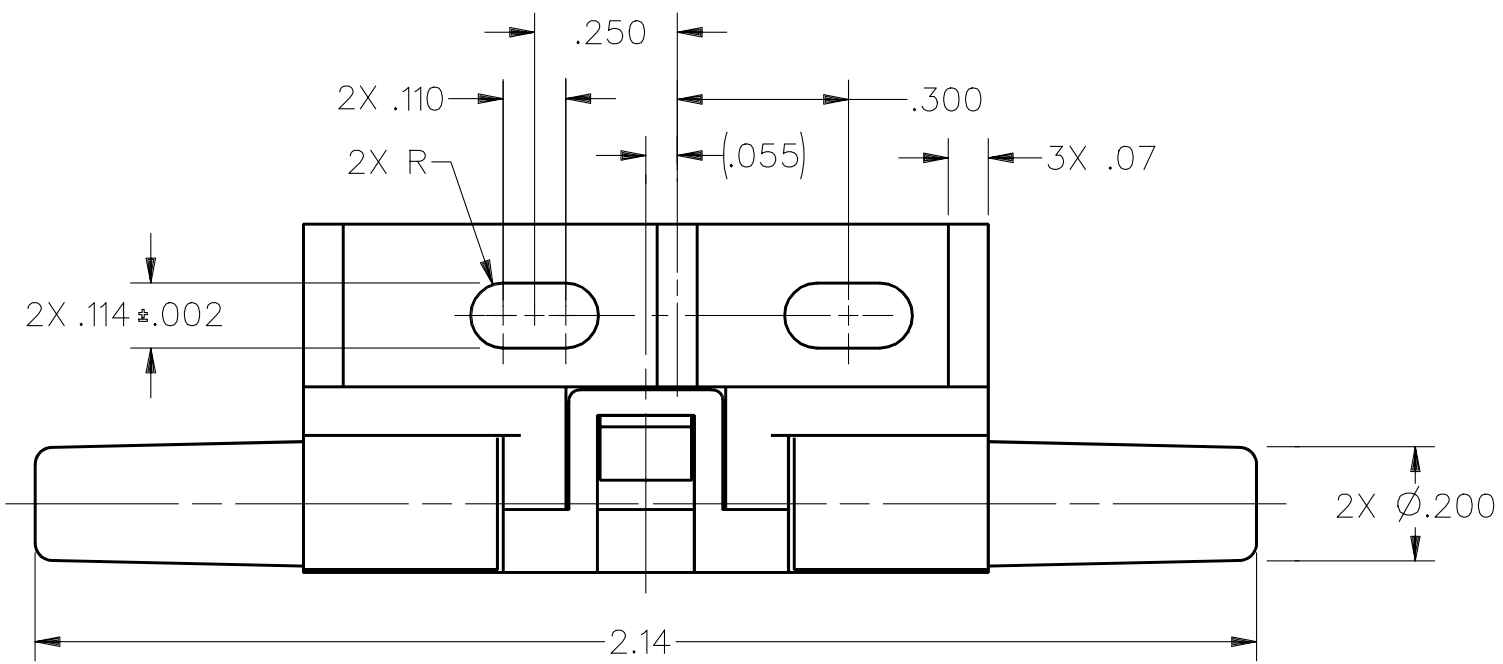
Description

The AWM2000 Series microbridge mass airflow sensor is a passive device comprised of two Wheatstone bridges. The heater control circuit is required for operation per specifications. The sensing bridge supply circuit is also required for operation per specifications. These two circuits are not on board the package and must be supplied in the application. The differential amplifier is a useful interface for the sensing bridge. It can be used to introduce gain and to voltage offsets to the sensor output.

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	Unamplified (mV)
Flow/Pressure Range	±30.0 sccm
Output Voltage @ Trim Point	11.8 mV dc @ 25 sccm
Port Style	Straight
Series Name	AWM2000
Null Shift over Temperature	±0.20 mV dc
Output Shift over Temperature	±5 % Reading
Maximum change in flow rate	5.0 SLPM/s
Max. Repeatability & Hysteresis Error	±0.35% Reading
Null Offset	±1 mV dc
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	30 mW typ., 50 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
Sensor Resistance	5.0 kOhm
Sensor Current	0.6 mA max.
Weight	10.8 g
Shock	100 g peak (5 drops, 6 axes)
Availability	Global
UNSPSC Code	411121
UNSPSC Commodity	411121 Transducers



SPECIFICATIONS:	AWM2150V
RECOMMENDED EXCITATION (MAX VOLTAGE) /2	10.00±.01VDC (15.00 VDC MAX)
POWER CONSUMPTION	30mW
OUTPUT VOLTAGE TRIM POINT	11.8mV @ 25 sccm
NULL VOLTAGE SHIFT (-25°C TO +85°C)	±0.14mV MAX
OUTPUT VOLTAGE SHIFT (+25°C TO -25°C) /4	+5% READING MAX
(+25°C TO +85°C) /4	-5% READING MAX
REPEATABILITY & HYSTERESIS /3	±1% READING
RESPONSE TIME /1	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	100G PEAK
OVERPRESSURE	25 psi MAX
SENSOR RESISTANCE	5 K-OHMS TYP
SENSOR CURRENT (PIN 2-PIN 1, PIN 6-PIN 1)	0.6 mA MAX

AWM2150V FLOW SPECIFICATIONS

FLOW (Sccm)	NOMINAL (mV)	TOL. (±mV)
50	20.5	2.5
25	11.8	1.5
15	7.4	1.4
5	2.5	1.0
0	0.0	0.7
5	-2.5	1.5
15	-7.4	2.5
25	-11.8	4
50	-20.5	7

NOTES

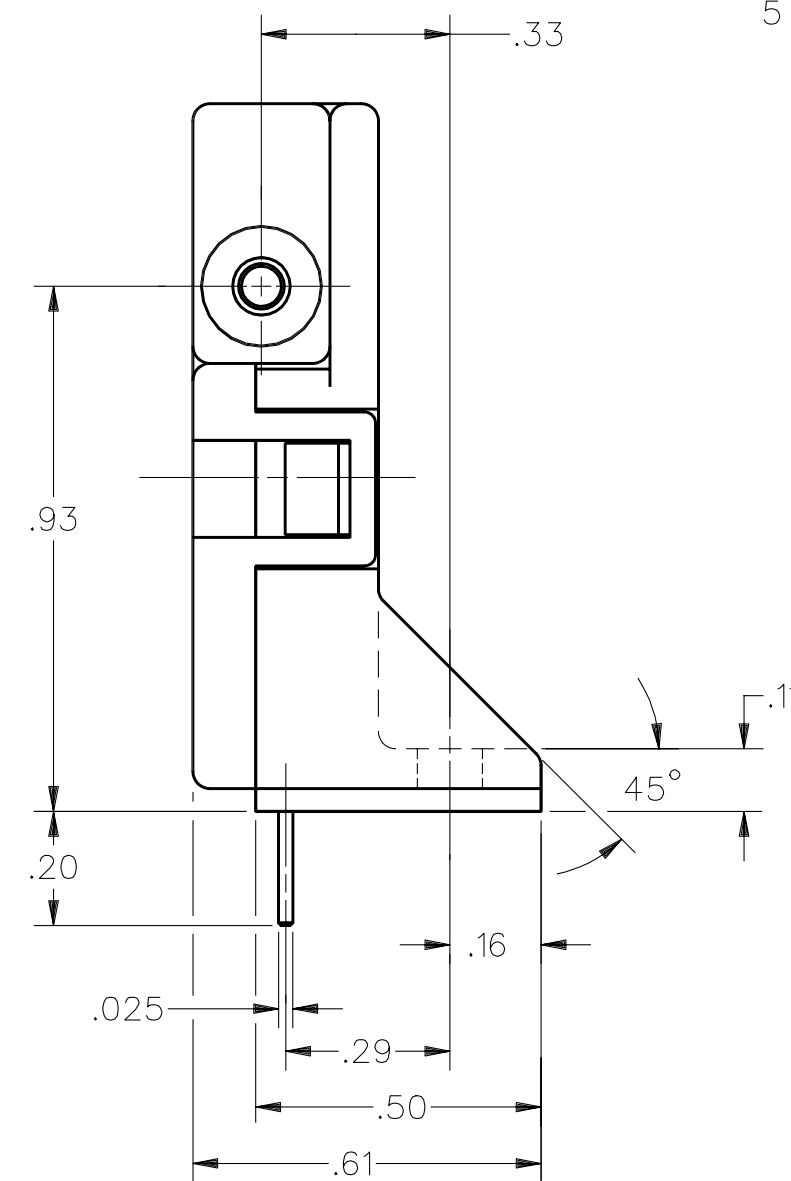
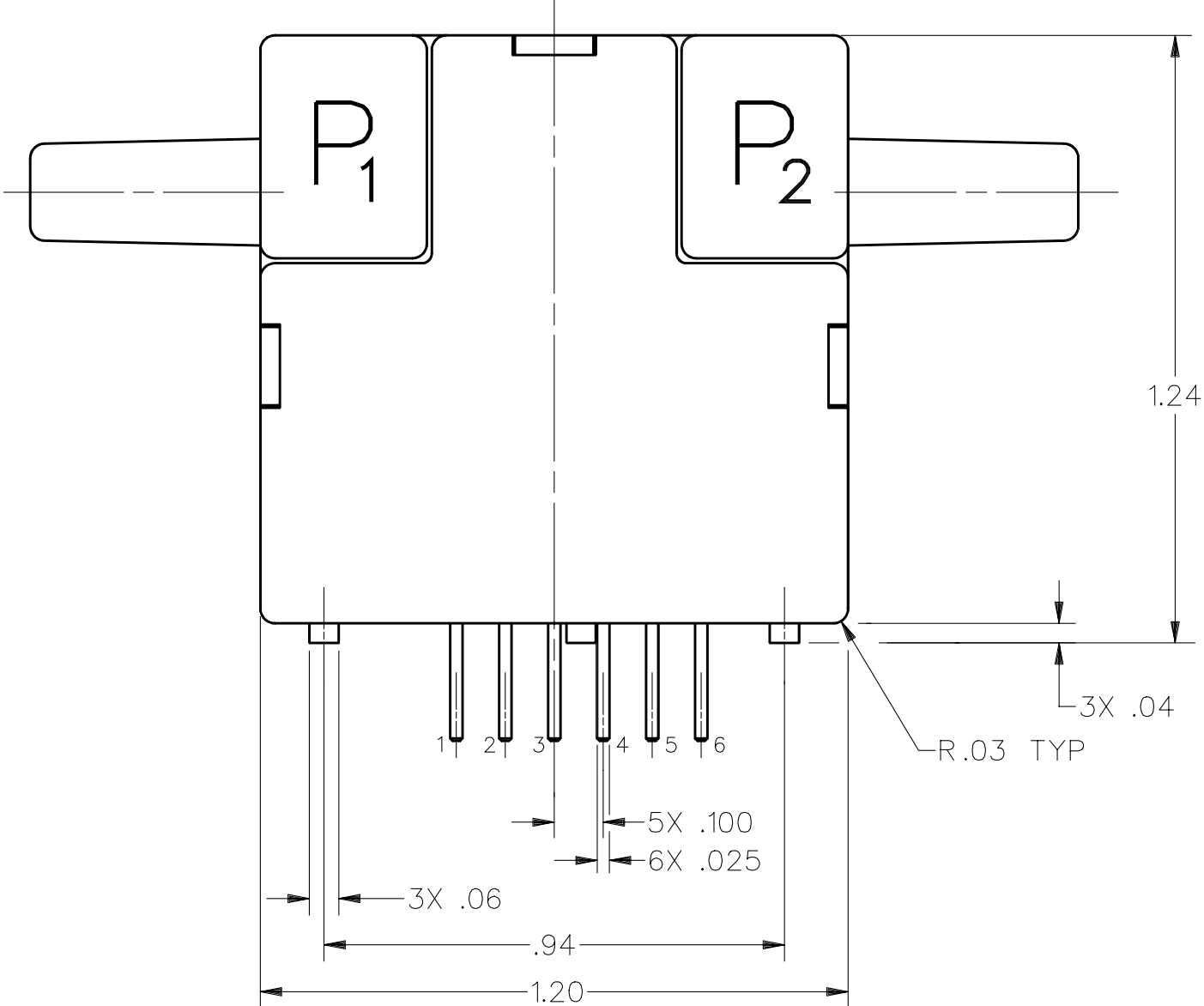
- 1 RESPONSE TIME IS TYPICALLY 1 msec FROM 10%-90%
- 2 OUTPUT VOLTAGE IS RATIO-METRIC TO SUPPLY VOLTAGE
- 3 REPEATABILITY & HYSTERESIS TOLERANCES REFLECT INHERENT INACCURACIES OF THE MEASUREMENT EQUIPMENT
- 4 TEMPERATURE SHIFTS IN THE MASSFLOW DEVICES ARE DUE TO THE CHANGE OF THE SECOND ORDER TCR COEFFICIENT OVER TEMPERATURE
- 5 - POSITIVE FLOW DIRECTION IS DEFINED AS PROCEEDING FROM P1 TO P2 AND RESULTS IN POSITIVE OUTPUT (PIN 6 > PIN 2). NEGATIVE FLOW DIRECTION IS DEFINED CONVERSELY AND RESULTS IN NEGATIVE OUTPUT (PIN 6 < PIN 2)

DRAWING NUMBER: AWM2150V
 ISSUE: 4
 PAGE 1 OF 1
 RELEASE NO: PR-19274
 REPLACES:

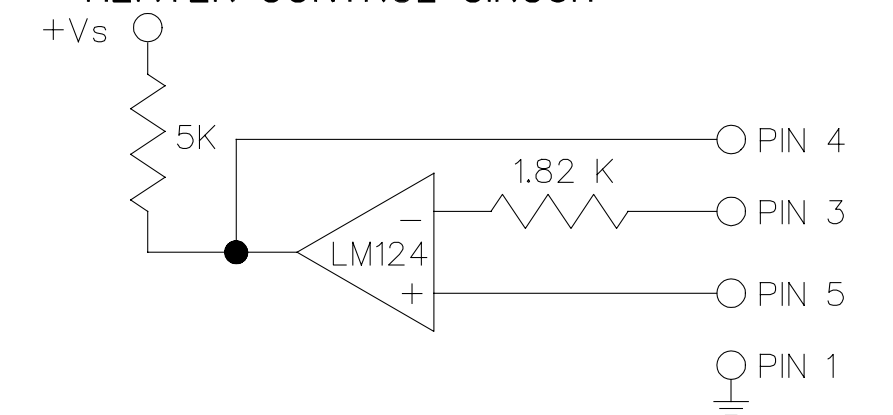
REVISIONS

REV	DATE	BY	DESCRIPTION
A	27 JUN 95	KDR	RELEASE PR-19274
B	9 SEP 96	G J W	83279
C	29 APR 97	J A K	C083694

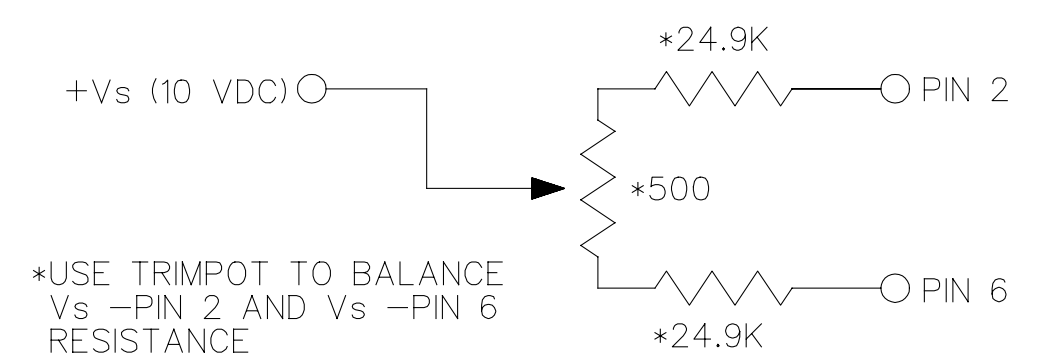
DDM/CAD
 DRAWN
 KDR
 27 JUN 95
 CHECK T S M
 28 JUN 95
 CHECK



HEATER CONTROL CIRCUIT



SENSING BRIDGE SUPPLY CIRCUIT



MASTER REDUCED
ANSI Y14.5M-1982 APPLIES

THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF MICRO SWITCH, A DIVISION OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF MICRO SWITCH.

MICRO SWITCH
a Honeywell Division

CATALOG LISTING
MASS AIRFLOW SENSOR
AWM2150V

FED. MFG. CODE 91929

THIRD ANGLE PROJECTION

SCALE 3 : 1

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

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

WEIGHT