



CAMBRIDGE ACCUS**ENSE, INC.**
<http://www.accusense.com>

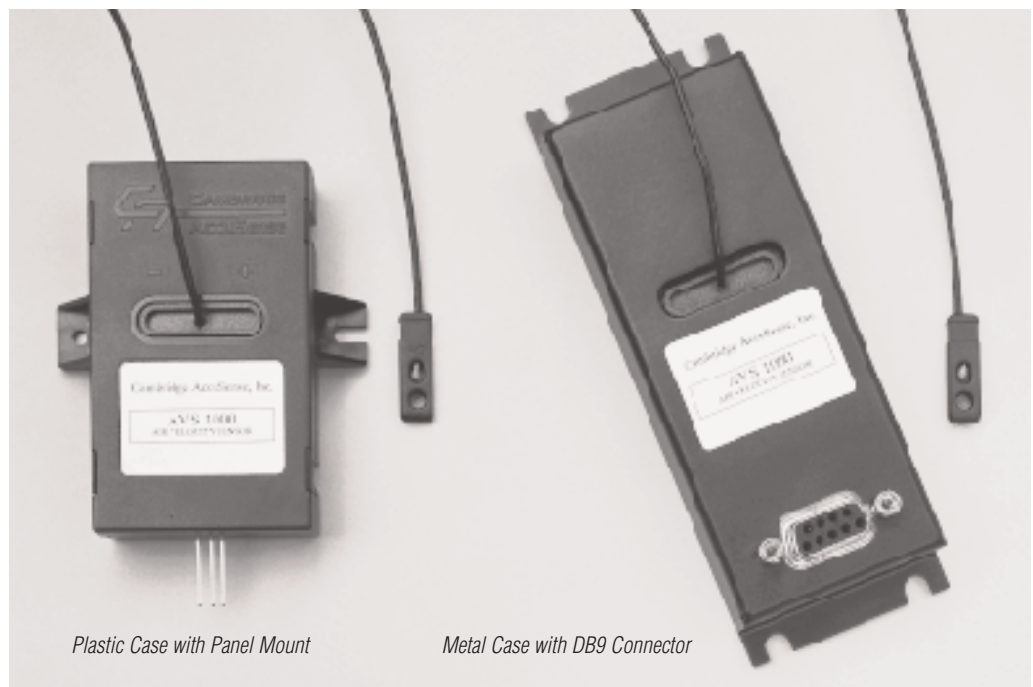
AVS Series

Air Velocity Sensors

1000 Series

Features

- Measures airflow directly
- Ultra-sensitive to low velocity
- All solid-state
- Cost-effective
- Easy to use
- Choice of outputs, including 0-5V, 0-10V, 4-20mA
- Access to tight locations
- Optional Wand Package



Plastic Case with Panel Mount

Metal Case with DB9 Connector

Direct Linear Airflow Measurement

The Cambridge AccuSense AVS-1000 Series are embedded, thermistor-based sensors, developed to provide direct, continuous measurements of ultra low air velocity. The AVS-1000 Series feature velocity ranges as low as 0-0.5 m/s (0-100 fpm); the highest velocity range is 0-5 m/s (0-1000 fpm). Users can also specify custom ranges, to fit the particular needs of their own applications. The specially designed small sensors allow easy access to obtain measurements even in remote and tight locations.

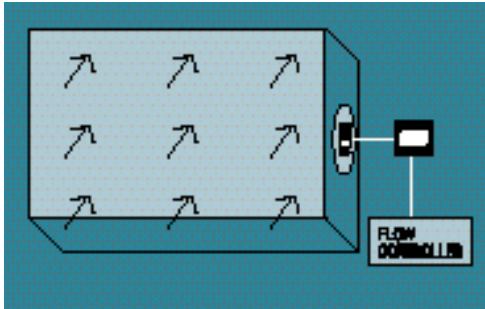
Directly obtaining airflow measurements greatly increases monitoring accuracy and efficiency. Traditional methods using differential pressure result in extremely low readings which are difficult to measure economically and accurately.

AVS-1000 Series sensors are available in two versions, bi-directional or non-directional. The non-directional sensor measures the maximum velocity passing the sensor. The bi-directional sensor gives a positive or negative reading to indicate the direction of the airflow.

An all solid-state construction ensures durability and stable operation, while the processing electronics inside the AVS Series perform temperature compensation and linearization of output. Applications for this new technology include airflow monitoring in sensitive environments such as isolation rooms, cleanrooms, fume hoods and biological safety cabinets, as well as leak detection and gas metering for duct work, HVAC and process control.

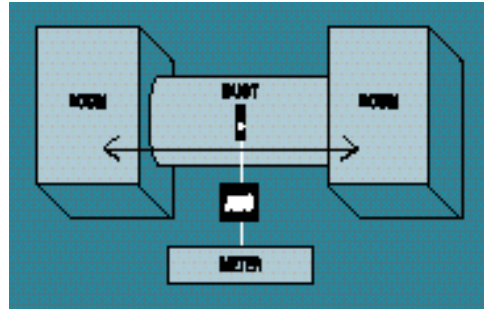
Supply voltage models include 5V, 12V or 24V, with outputs of 0-5V, 0-10V or 4-20mA. Packaging options include plastic or metal case with pins, DB9 or terminal block connections. A new metal case with aluminum wand is now available, called the Universal package.

Typical Applications



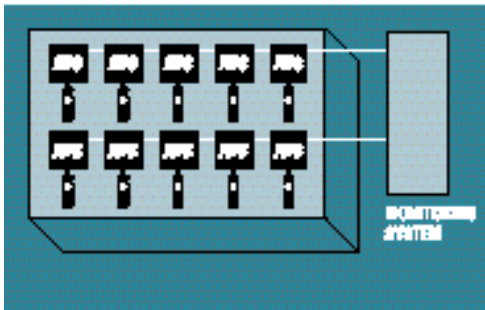
Application:
Fume Hoods

The AVS can be mounted into the side wall or incoming duct to measure and control face velocities of fume hoods.



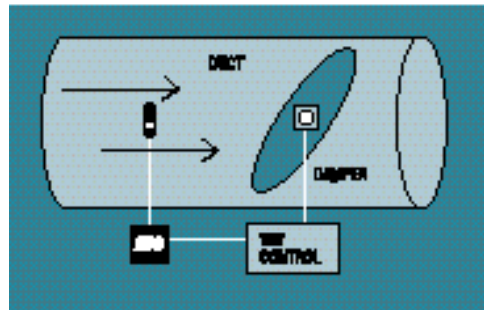
Application:
Isolation Rooms

A bi-directional AVS is optimal for monitoring isolation rooms and operating rooms where air velocity and direction are critical.



Application:
Cleanrooms

Mount several AVS sensors by inlets, outlets, filters and other critical areas. Transmit the data over long distances for continuous monitoring of airflow.



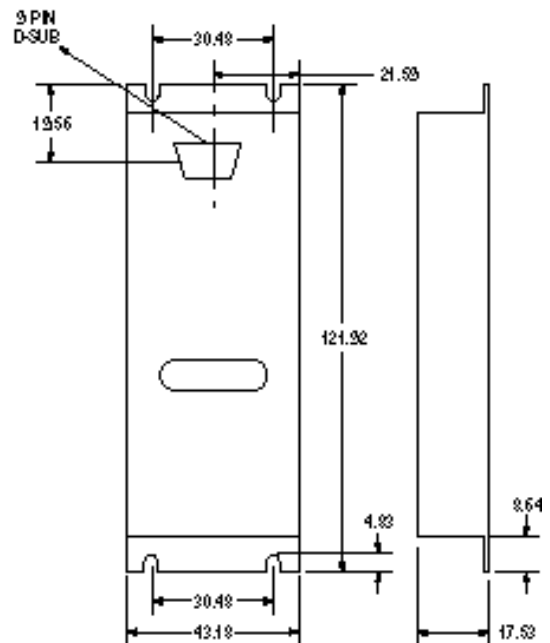
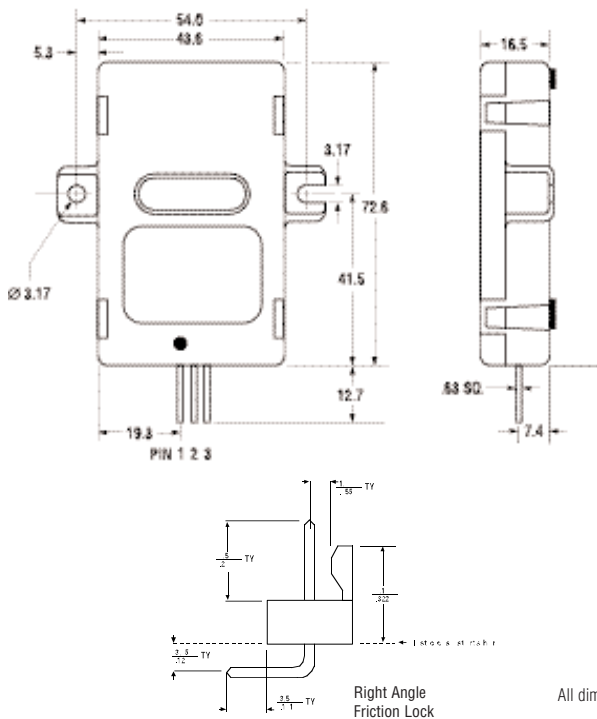
Application:
Air Ducts

Use the AVS as a replacement for cumbersome conversion of pressure measurements to an airflow reading.

Dimensions

Plastic Case

Metal Case

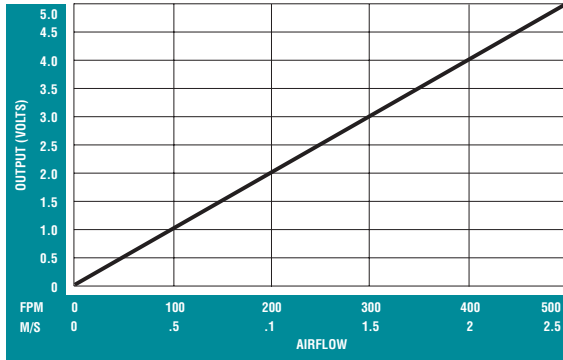


All dimensions are in millimeters

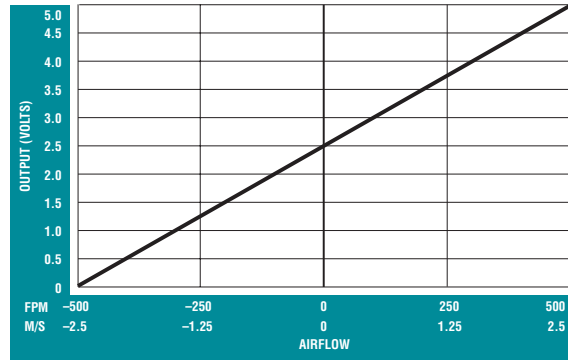
AVS Series

Air Velocity Sensors

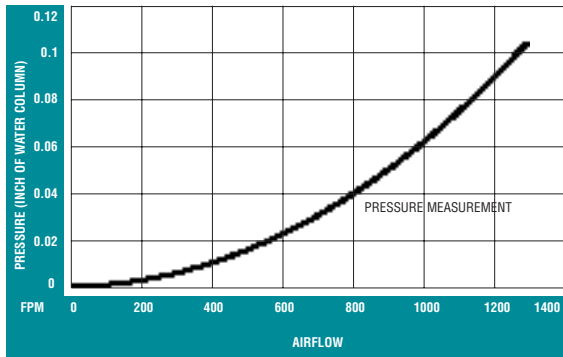
Sample Response, Non-Directional



Sample Response, Bi-Directional



Airflow vs. Pressure



At low velocities, the equivalent pressure measurements become very small and difficult to measure accurately and economically with traditional pressure sensors.

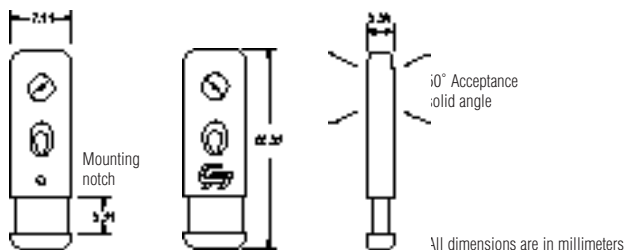
The AVS Series gives its strongest signals at the lowest velocities, thus eliminating the inaccuracies caused by converting minute differential pressures to an airflow reading.

Specifications

Model	Minimum	Nominal	Maximum
05D	4.75	5.0	5.25 VDC
12D	10	12	16 VDC
24D	12	24	VDC
Supply Current	50		mA
Accuracy From 15° To 30° C	5% of full scale, 3% of full scale @ 21° C		
Above 30 FPM			
Operating Temperature	0° to 70° C		
Storage Temperature	0° to 100° C		
Accuracy Below 30 FPM	± 10 FPM		
Repeatability At 21° C	±1% of full scale		
Response Time	100 ms std.		
Output Resolution	256 steps		
Warm-up Time	3 minutes maximum		
Current Loop Load	0-200 ohms		
Humidity (Non-Condensing)	10% to 90% RH		
Cable	Shielded Teflon (diameter 1.78 mm)		
Connector Configuration	DB9		
3 Pin Header & Friction Lock	1= Supply (V _{CC}) 2= Return (GRD) 3= Output		
Case Material	Plastic	ABS	
	Metal	Powder coated aluminum	
	Universal	See Universal Data Sheet	
Weight	Plastic	36 grams	
	Metal	80 grams	
	Universal	See Universal Data Sheet	

Sensor Flow Direction

Bi-Directional—Dot facing flow is positive direction.
Logo facing flow is negative direction.



AVS Series

Air Velocity Sensors

Part Numbering Scheme

AVS	XX	XXX	X	X	X	X	X
AIR VELOCITY SENSOR	SERIES	SUPPLY VOLTAGE	CASE	VELOCITY RANGES (See Below)	OUTPUT	CABLE LENGTH (Shielded)	CONNECTOR OPTIONS
	10= Non-Directional Sensor 11= Bi-Directional Sensor	05D= 5 VDC 12D= 10-16 VDC 24D= 12-24 VDC 05D= 5VDC 12D= 12VDC 24D= 12-24VDC <i>Metal Case Only</i>	0= Plastic 1= Metal 2= Universal	B= 100 fpm C= 150 fpm D= 200 fpm F= 500 fpm H= 1000 fpm J= 0.5 m/s L= 1.0 m/s N= 2.5 m/s P= 5 m/s Other Ranges Available Upon Request	1= 0-5V 2= 0-10V 3= 4-20mA	1= 1m 2= 2m Other Lengths Available	1= 7478 Right Angle Friction Lock, 3 pin header* 2= Panel Mount 3 Pin Header (plastic case) 3= Terminal Block (metal case) 4= Female DB9 (metal case) *Molex p/n 22-05-3031
				VELOCITY RANGES			
				Non-Directional – Choose 1 letter for ending velocity (e.g., B= 100 fpm). Thus, overall velocity range is 0 to 100 fpm.			
				Bi-Directional – Choose 1 letter for the ending velocity, which will represent both the negative and the positive velocity (e.g., an AVS with the letter D has a velocity range of -200 to +200 fpm).			
				Accuracy of the bi-directional AVS begins from the bottom of the negative range to the top of the positive range (e.g. -200 to +200 calibration's full scale is 400 fpm.)			



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