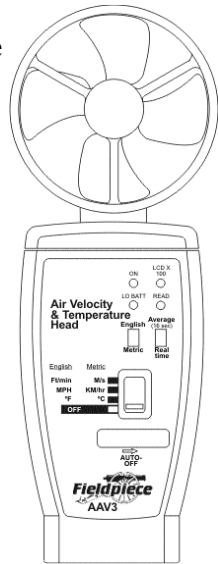


Fieldpiece

Air Velocity and Air Temperature Accessory Head Model: AAV3



OPERATOR'S MANUAL

Volumetric Flow

There is no substitute to using a hood to measure volumetric flow (CFM or L/s). The AAV3 can, however, be used to estimate volumetric flow. Volumetric flow equals air velocity (in feet/minute or meters/second) multiplied by the free area (in square feet or square meters). The AAV3 measures air velocity. Then all you need is the size of the opening or "free area" to find volumetric flow.

Air velocity: Because the air velocity is different at different points of the register, it may be best to estimate the average air velocity by averaging the readings from several spots. A common method is to take readings from nine different spots and average them. The DL3 data logger can make finding the average very easy. Just take several data points by pressing a button on the data logger then read the average from the LCD.

Free area: Free area is the area of the register that air can move through. Estimate free area by measuring the open area of the register in feet or meters (including the fins, excluding the border).

For CFM: Multiply the free area by the air velocity to get CFM. For example a register that has an open area that is 12 inches (one foot) by 6 inches (one half foot) has a free area of $1\text{ ft} \times 1/2\text{ ft} = 1/2\text{ ft}^2$. If the average air velocity is 600 ft/min, then the CFM is $600\text{ ft/min} \times 1/2\text{ ft}^2 = 300\text{ CFM}$.

Description

The model AAV3 accessory head is designed to measure air velocity and air temperature. It can be used to estimate CFM (cubic feet/minute). You can measure air velocity in feet/minute, miles/hour, meters/second, or kilometers/hour. The AAV3 also measures temperature in °C or °F.

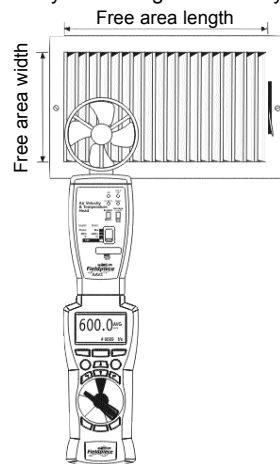
How to use

1. Connect to COM and Volts jack. Slide AAV3 air velocity and temperature accessory head onto Fieldpiece "stick" meter, data logger, electronic handle or connect to most other meters using Fieldpiece ADLS2 deluxe test leads.
2. Set meter to 200mVDC or 2000mVDC range.
3. Power on the AAV3 and select **English** or **metric** along with desired unit of measure.
4. Select display mode. **Average** shows a steady, average of the last 16 seconds of readings. **Real time** shows every reading and will change immediately if there is a change in air velocity. (Note: temperature readings are always in real time regardless of the setting.)
5. If the green "LCD x 100" LED lights up on the AAV3, you must multiply the LCD reading by 100 to get the true value.

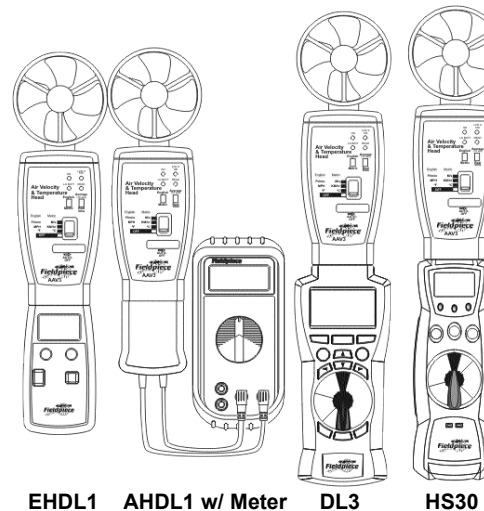
For L/s: Multiply the free area by the air velocity to get L/s. For example a register that has an open area that is 0.3 meters (30cm) by 0.15 meters (15cm) has a free area of $0.3\text{ m} \times 0.15\text{ m} = 0.045\text{ m}^2$. If the average air velocity is 3 m/s, then the L/s is $3\text{ m/s} \times 0.045\text{ m}^2 \times 1000\text{ L/m}^3 = 135\text{ L/s}$.

Make it easy with the data logger

Use your AAV3 with the DL3 data logger. Press the RECORD button a few times on the DL3 data logger to log a few readings and then just press AVG to find your average air velocity.



Use it your way



EHD1

AHD1 w/ Meter

DL3

HS30

Specifications

Range (wind velocity): 60-5900 Ft/min, 0.7-67.0 mph, 0.3-30.0 M/s, 1-108 KM/hr

Accuracy (wind velocity): $\pm 3\% + 1\text{ digit}$ @ $73^\circ\text{F} \pm 5^\circ\text{F}$ ($23^\circ\text{C} \pm 2^\circ\text{C}$), <95% relative humidity

Range (temperature): -20°C to 60°C , -4°F to 140°F

Accuracy (temperature):

- $\pm 1^\circ\text{F}$ at 32°F to 113°F ;
- $\pm 2^\circ\text{F}$ at -4°F to 32°F , 113°F to 140°F ($\pm 0.5^\circ\text{C}$ at 0°C to 45°C ;
- $\pm 1^\circ\text{C}$ at -20°C to 0°C , 45°C to 60°C)

Resolution: $\pm 0.1^\circ\text{F}/^\circ\text{C}$

Operating temperature: 32 to 120°F (0 - 49°C)

Operating relative humidity: <95%RH

Storage temperature: -4 to 140°F (-20 to 60°C), 0 to 80% R.H. with battery removed from meter.

Sensor type: Thermistor temperature sensor
Battery life: 200 hours typical. No measurable current draw when in "off" position.

Low battery indication: Red LED

Battery: 9V

Auto off: Approx. 10 minutes.

One year limited warranty

This head is warranted to the original purchaser against defects in material and workmanship for a period of one year from the date of purchase. During the warranty period, Fieldpiece will replace or repair the defective unit, subject to verification of the defect.

Any damage to the sensor from dirt, mechanical abuse, or overexposure to damaging chemicals, including overexposure to carbon monoxide, are not covered under this warranty. Also not covered are defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use.

Any implied warranties arising out of the sale of a Fieldpiece Instrument, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. Fieldpiece shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expense, or economic loss.

Local laws vary. Above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary by location.



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