Sontay®

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Features and Benefits

- User selectable output signal, 0-10Vdc or 4-20mA
- User selectable measurement ranges
- Durable and resistant to chemical reagents
- Adjustable probe depth using the optional DPA
- Built-in self-test feature

Technical Overview

The AV-D is a single point, multi-range air velocity transmitter with user selectable 0-10Vdc or 4-20mA outputs and 4 user selectable measurement ranges. The unit has a built-in self-test feature and the user can manually override the output to 0%, 50% or 100% of output range to aid commissioning.

A flange plate (DPA) is available for adjustment of the penetration depth.

Product Codes

AV-D Single point multi-range air velocity transmitter

Accessory

DPA Duct probe adjustment flange

Specification

Output ranges:

0 to 4 m/s	0 to 8 m/s
0 to 16 m/s	0 to 32 m/s

Accuracy (±3% of range)

0 to 4 m/s	±0.12 m/s
0 to 8 m/s	±0.24 m/s
0 to 16 m/s	±0.48 m/s
0 to 32 m/s	±0.96 m/s

Outputs:

4-20mA, 100Ω Loop resistance min.
0-10Vdc into 4.7kΩ min

Supply (current output):

20Vdc to 35Vdc for 500Ω loop resistance
12Vdc to 30Vdc for 100Ω loop resistance

Supply (Voltage output):

17Vdc to 34Vdc
14Vac to 26Vac supply into 4.7kΩ min.

Max. current	50mA
Speed of response	3 seconds for 90% change

Housing:

Material:	PC/GF (Halogen free, flame retardant & UV stabilized)
Dimensions	125 x 105 x 85mm

Probe:

Material	Delrin
Dimensions	215mm x 19mm dia.

Environmental:

Housing:	-30 to 60°C
	0 to 95% non-condensing
Media:	-10 to +50°C
Protection	IP65
Country of origin	Denmark
Conformity	EMC, CE & UKCA Marked

WEEE Directive:

At the end of the products useful life please dispose as per the local regulations. Do not dispose of with normal household waste. Do not burn.

CE UKCA

Installation

Antistatic precautions must be observed when handling these sensors. The PCB contains circuitry that can be damaged by static discharge.

Note: Transmitters should only be fitted to a system after airflow calibration has been carried out and preferably following full fan running of at least several days, in order that the main contaminants have been removed from the stagnant system.

1. Fit the housing to the duct with appropriate screws, or by using the optional duct mounting flange.

2. Release the snap-fit lid by gently squeezing the locking tab.

3. Feed the cable through the waterproof gland and terminate the cores at the terminal block leaving some slack inside the unit, tighten the cable gland onto the cable to ensure water tightness.

4. If the sensor is to be mounted outside, it is recommended that the unit be mounted with the cable entry at the bottom.
   If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.

5. Set jumper links according to output type required. Snap shut the lid after the connections have been made.

6. It is recommended that screened cable be used and that the screen should be earthed at the controller. Care should be taken not to lay control signal wiring in close proximity to power or other cables which may produce significant electromagnetic noise.

7. Allow 3 minutes before checking functionality and allow 30 minutes before carrying out pre-commissioning checks.

- The AV-D should be installed not less than 2 metres downstream from any heating or cooling devices, source of moisture such as humidifier, fan or bend in the ductwork.

- To ensure accurate readings the AV-D should be installed so that the element is 0.24 x the duct radius into the duct.
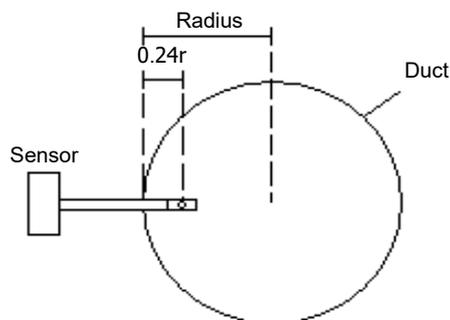
- Reading errors of up to 30% may be experienced if the elements are positioned in the centre of the duct.

- The AV-D should be mounted with the holes in the end of the probe orientated directly into the air flow, to allow full air flow over the sensing element.

- The AV-D requires approx. 50mA. Ensure the supply to the sensor is capable of providing this current.

- If using a current output mode, the sensor must only be used with a 24Vdc supply. The sensor may be damaged if supplied with AC.

Note: When using current output mode they are NOT loop powered and will require a common 0V connection.

Connections, Jumper Settings & Output Range:

⚠️ Current output
If using a current output mode, the sensor must only be used with a 24Vdc supply. The sensor may be damaged if supplied with AC.

Note: When using current output mode they are **NOT** loop powered and will require a common 0V connection.

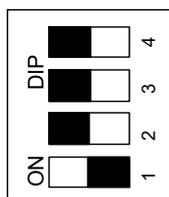Output Signal Jumper Settings

0-10Vdc (U)   4-20mA (I)

NB Standard units are factory set for a 0-10Vdc output.
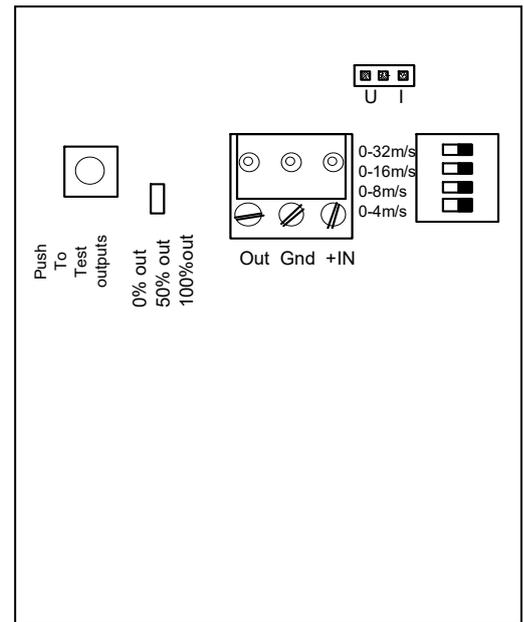
Output Range Dip-switch Settings:

	Dip switch			
Output range	1	2	3	4
0 to 4m/s	**ON**	OFF	OFF	OFF
0 to 8m/s	OFF	**ON**	OFF	OFF
0 to 16m/s	OFF	OFF	**ON**	OFF
0 to 32m/s	OFF	OFF	OFF	**ON**

Example: 0-4m/s (0-787ft/min), the "raised" section of the dip switch is pushed towards the ON position.
(indicated by the white square)

Connections

- Out   0-10Vdc or 4-20mA output
- Gnd   Common 0V
- +IN   24Vac/dc supply voltage (see notes)

Self-Test, Manual Override & Failure Mode:

The output of the AV-D can be manually overridden to one of 3 values by pressing the PCB mounted button. When this button is pressed once, the output will change to 0% of the output's range, when pressed again the output will change to 50% of the output's range and when pressed a third time will change the outputs to 100% of the outputs range. Pressing again will return the outputs to automatic control.

Example:

•	First Press	Velocity output falls to 0%, LED flashes slowly.
•	Second Press	Velocity output rises to 50%, LED flashes slowly.
•	Third Press	Velocity output rises to 100%, LED flashes slowly.
•	Fourth Press	Velocity output reverts to automatic levels. The LED should be permanently on.

If the sensor element assembly is damaged, the output will change to the following fixed default value and the LED will flash rapidly;

Velocity = 0%