

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 (selectable):

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

Accuracy ($\pm 3\%$ 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, 100 Ω Loop resistance min.
0-10Vdc into 4.7k Ω min.

Supply (current output):

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

Supply (Voltage output):

17Vdc to 34Vdc
14Vac to 26Vac

Max. current

50mA

Speed of response

3 seconds for 90% change

Housing:

Material	PC (Halogen free, flame retardant & UV stabilized)
Dimensions	123 x 1053 x 54mm

Probe:

Material	Delrin
Dimensions	205mm x 20mm 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.



Installation

Handling & Precautions:

- Use **antistatic precautions** – static discharge can damage the PCB.
- **Do not use** in swimming pools or spas (chemicals shorten sensor life and void warranty).
- Install **after construction/renovation** to avoid dust (warranty may be void if contaminated).

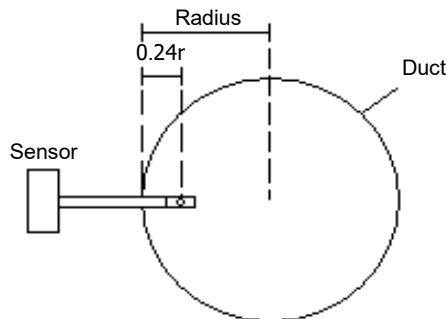
Installation Steps:

- 1) Secure the housing to the duct using screws or the optional mounting flange.
For circular ducts: Position the sensing element so it extends $0.24 \times$ the duct radius into the duct (see "Guidelines").
For square or rectangular ducts: No calculation is required.
- 2) Open lid by pressing the tab, feed cable through gland and terminate wires (see "Electrical Connections"). Tighten gland for watertight seal.
- 3) For outdoor use, mount with cable entry at bottom. If fed from above, add a rain loop before entry.
- 4) Set the jumper links according to output type required and select measuring range via dip-switches (see "Selecting Output Mode & Measuring Range").
- 5) Connect outputs to controller and check supply voltage before powering.
- 6) Wait 3 minutes for initial check, 30 minutes before pre-commissioning.

Guidelines

Positioning in Ductwork

- Install the AV-D at least **2 metres downstream** from any heating or cooling devices, sources of moisture (e.g., humidifiers), fans, or bends in the ductwork.
- To ensure accurate readings, position the sensing element **$0.24 \times$ the duct radius** into the duct.
- Avoid placing the element at the exact centre of the duct, as this can cause **reading errors of up to 30%**.



Orientation

- Mount the AV-D so the **holes in the end of the probe face directly into the airflow**, ensuring full airflow over the sensing element.

Power Requirements

- The AV-D requires approximately **50mA** of current. Verify that the power supply can provide this.
- When using current output mode, the sensor **must only be powered with 24Vdc**. Supplying AC power may **damage the sensor**.
- 4-20mA output mode is **not loop powered**, a common 0V is required.

Selecting Output Mode & Measuring Range:

Output Signal Jumper Settings:

0-10Vdc (U)



4-20mA (I)



Standard units are factory set for a 0-10Vdc output.

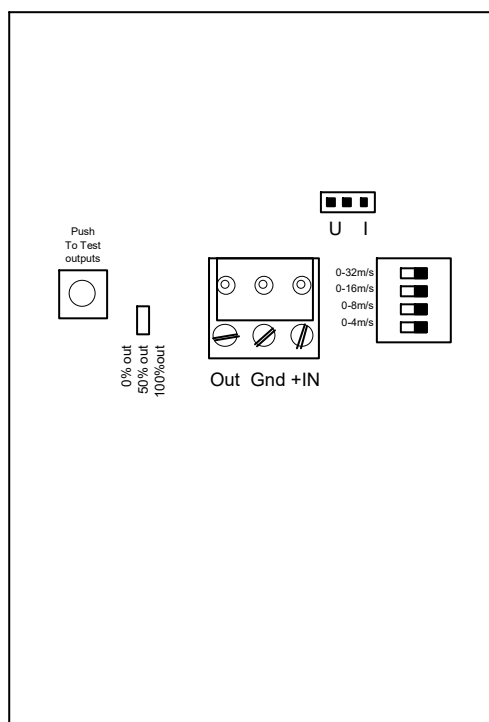
Output Range Dip-switch Settings:

	Dip Switch			
Output Range	1	2	3	4
0 to 4 m/s	ON	OFF	OFF	OFF
0 to 8 m/s	OFF	ON	OFF	OFF
0 to 16 m/s	OFF	OFF	ON	OFF
0 to 32 m/s	OFF	OFF	OFF	ON

"Raised" section of the dip switch is pushed towards the ON position.

Electrical Connections

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



Self-Test, Manual Override & Failure Mode:

The AV-D allows the output to be manually overridden using the PCB-mounted button. Each press cycles the output through preset values:

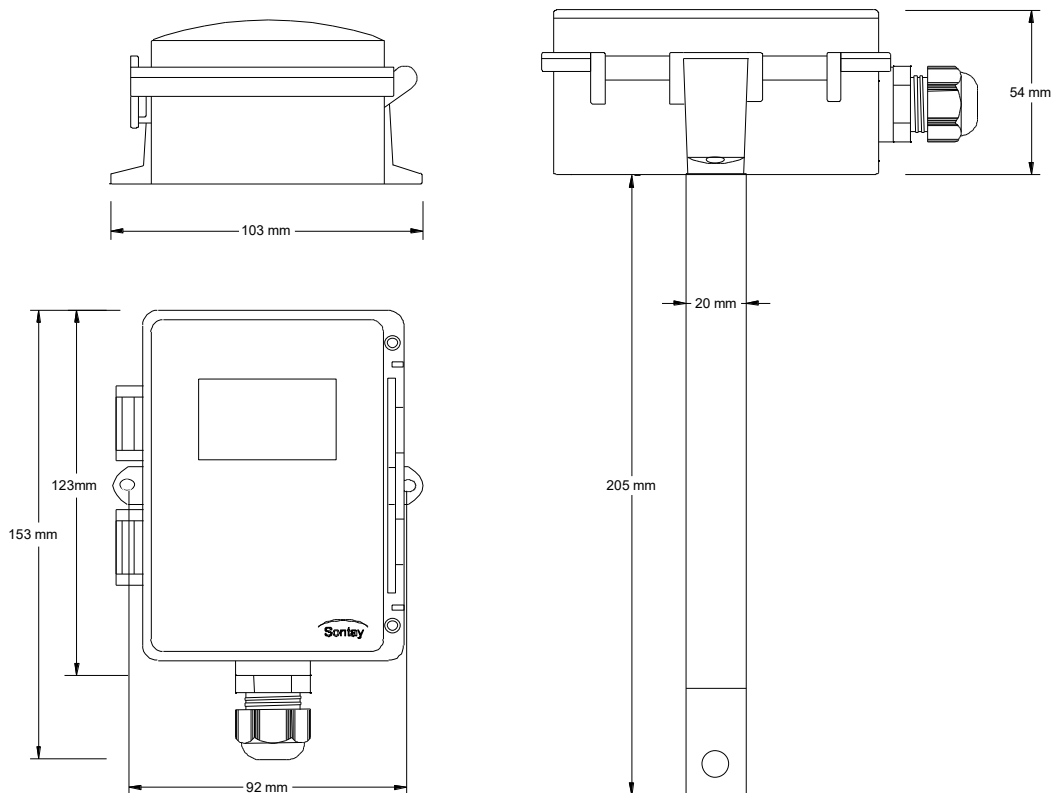
Example:

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

If the sensor element assembly is damaged, the output will default to a fixed value:

- Velocity = 0%
- LED flashes rapidly

Dimensions



Whilst every effort has been made to ensure the accuracy of this specification, Sontay cannot accept responsibility for damage, injury, loss or expense resulting from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.

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