



### Features & Benefits

- Push-on connectors to suit 6mm i/d PVC tubing
- Neoprene rubber gaskets duct seals included
- Averages across the duct
- Easy installation
- Fully compatible with Sontay's range of DP pressure transmitters

### Technical Overview

The AV-x series of air velocity probes are available in lengths from (AV-EP) 100 to 600mm & (AV-MPS) 700 to 2000mm. The AV-MPS is for use in larger ducts or where turbulent airflow is likely to be encountered.

When connected to a differential pressure sensor of an appropriate range, the output of the sensor represents the air velocity, and is defined by the following equation:-

$$\text{Velocity} = \sqrt{(2 \times \text{Velocity pressure}) / 1.2}$$

### Product Codes

<b>AV-EP-100</b>	100mm Multi point probe
<b>AV-EP-200</b>	200mm " "
<b>AV-EP-300</b>	300mm " "
<b>AV-EP-400</b>	400mm " "
<b>AV-EP-500</b>	500mm " "
<b>AV-EP-600</b>	600mm " "
<b>AV-MPS-700</b>	Suit duct size of 600-700mm
<b>AV-MPS-800</b>	Suit duct size of 700-800mm
<b>AV-MPS-1000</b>	Suit duct size of 750-1000mm
<b>AV-MPS-1250</b>	Suit duct size of 1000-1250mm
<b>AV-MPS-1500</b>	Suit duct size of 1250-1500mm
<b>AV-MPS-1750</b>	Suit duct size of 1500-1750mm
<b>AV-MPS-2000</b>	Suit duct size of 1750-2000mm

#### Accessory

<b>PA-TUBE-8MM</b>	PVC Tube 8mm o/d x 1.5mm wall, 30m reel
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### Specification

#### Probe:

<i>AV-EP</i>	
Material	ABS Flame retardant (V0)
Dimensions	10 x 24mm
<i>AV-MPS</i>	
Material	304 Stainless steel
Dimensions	26mm dia.

#### Connections:

Material	Plated brass
Connections	To suit 6mm i/d PVC tubing

#### Duct flange:

Material	Stainless steel
Dimensions:	
AV-EP	30 x 60mm
AV-MPS	52mm dia

#### Country of origin

UK

#### WEEE Directive:



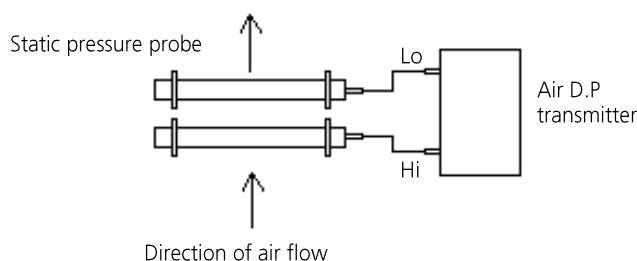
At the end of the products useful life please dispose as per the local regulations.  
Do not dispose of with normal household waste.  
Do not burn.

## Installation:

- The AV-x should be installed not less than 2 meters downstream from any heating or cooling devices, source of moisture such as humidifier, fan or bend in the ductwork.
- Do not install near dampers.
- Do not install where condensation is likely (it can block the probe holes).
- Ensure that when the probes are mounted that ALL the holes are either inside the duct or blocked up.
- The AV-EP should NOT be used in turbulent air flow conditions.

## AV-MPS

- One probe should be fixed with the holes pointing directly into the airflow, the other probe can be rotated to achieve the correct reading (via a D.P. sensor) when compared to a reference probe used for commissioning.
  - All the above is to try to ensure that the probes are sited in laminar airflow rather than turbulent airflow, to achieve maximum accuracy and repeatability.
  - If the probes are to be installed in a round duct mount them side-by-side approx. 100mm apart. If the probes are to be mounted near a bend or branch in the duct mount them above each other approx. 100mm apart. Using a flange as a template, mark the duct work and drill the mounting holes.
1. Turn the total pressure probe so that the holes face directly into the air flow. Lock in position using the pan-head screws on the flanges.
  2. If possible, adjust the speed of the fan to give a known air velocity. Turn the static pressure probe so that a differential pressure corresponding to the known air velocity is measured across the 2 probes. Lock in position using the pan-head screws on the flanges.
  3. Where fan speed adjustment is not possible, measure the air velocity with a vane anemometer (or similar). Turn the static pressure probe so that a differential pressure corresponding to the measured air velocity is measured across the 2 probes. Lock in position using the pan-head grub screw.



**Air Velocity v Differential Pressure Chart:**

	Velocity (m/s)									
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Velocity (m/s)	0	0.00	0.01	0.02	0.05	0.10	0.15	0.22	0.29	0.38
	1	0.60	0.73	0.86	1.01	1.18	1.35	1.54	1.73	1.94
	2	2.40	2.65	2.90	3.17	3.46	3.75	4.06	4.37	4.70
	3	5.40	5.77	6.14	6.53	6.94	7.35	7.78	8.21	8.66
	4	9.60	10.09	10.58	11.09	11.62	12.15	12.70	13.25	13.82
	5	15.00	15.61	16.22	16.85	17.50	18.15	18.82	19.49	20.18
	6	21.60	22.33	23.06	23.81	24.58	25.35	26.14	26.93	27.74
	7	29.40	30.25	31.10	31.97	32.86	33.75	34.66	35.57	36.50
	8	38.40	39.37	40.34	41.33	42.34	43.35	44.38	45.41	46.46
	9	48.60	49.69	50.78	51.89	53.02	54.15	55.30	56.45	57.62
	10	60.00	61.21	62.42	63.65	64.90	66.15	67.42	68.69	69.98
	11	72.60	73.93	75.26	76.61	77.98	79.35	80.74	82.13	83.54
	12	86.40	87.85	89.30	90.77	92.26	93.75	95.26	96.77	98.30
	13	101.40	102.97	104.54	106.13	107.74	109.35	110.98	112.61	114.26
	14	117.60	119.29	120.98	122.69	124.42	126.15	127.90	129.65	131.42
	15	135.00	136.81	138.62	140.45	142.30	144.15	146.02	147.89	149.78
	16	153.60	155.53	157.46	159.41	161.38	163.35	165.34	167.33	169.34
	17	173.40	175.45	177.50	179.57	181.66	183.75	185.86	187.97	190.10
	18	194.40	196.57	198.74	200.93	203.14	205.35	207.58	209.81	212.06
	19	216.60	218.89	221.18	223.49	225.82	228.15	230.50	232.85	235.22
	20	240.00	242.41	244.82	247.25	249.70	252.15	254.62	257.09	259.58
	21	264.60	267.13	269.66	272.21	274.78	277.35	279.94	282.53	285.14
	22	290.40	293.05	295.70	298.37	301.06	303.75	306.46	309.17	311.90
	23	317.40	320.17	322.94	325.73	328.54	331.35	334.18	337.01	339.86
	24	345.60	348.49	351.38	354.29	357.22	360.15	363.10	366.05	369.02
	25	375.00	378.01	381.02	384.05	387.10	390.15	393.22	396.29	399.38
	26	405.60	408.73	411.86	415.01	418.18	421.35	424.54	427.73	430.94
	27	437.40	440.65	443.90	447.17	450.46	453.75	457.06	460.37	463.70
	28	470.40	473.77	477.14	480.53	483.94	487.35	490.78	494.21	497.66
	29	504.60	508.09	511.58	515.09	518.62	522.15	525.70	529.25	532.82
	30	540.00	543.61	547.22	550.85	554.50	558.15	561.82	565.49	569.18
	31	576.60	580.33	584.06	587.81	591.58	595.35	599.14	602.93	606.74
	32	614.40	618.25	622.10	625.97	629.86	633.75	637.66	641.57	645.50
	33	653.40	657.37	661.34	665.33	669.34	673.35	677.38	681.41	685.46
	34	693.60	697.69	701.78	705.89	710.02	714.15	718.30	722.45	726.62
	35	735.00	739.21	743.42	747.65	751.90	756.15	760.42	764.69	768.98
	36	777.60	781.93	786.26	790.61	794.98	799.35	803.74	808.13	812.54
	37	821.40	825.85	830.30	834.77	839.26	843.75	848.26	852.77	857.30
	38	866.40	870.97	875.54	880.13	884.74	889.35	893.98	898.61	903.26
	39	912.60	917.29	921.98	926.69	931.42	936.15	940.90	945.65	950.42
	40	960.00	964.81	969.62	974.45	979.30	984.15	989.02	993.89	998.78
										1003.69

Using the chart to determine the range of the differential pressure sensor:

From the left hand column (velocity, in 1 m/s increments) and the top row (velocity, in 0.1 m/s increments), read across and down to find the corresponding differential pressure.

Example:

Air velocity is 6.2m/s - Read across from the left to 0.2m/s and down from the top to 6m/s. Where the column and row meet gives a differential pressure of 23.06Pa.

Therefore a differential pressure sensor, with a range of 0 - 25Pa would be selected.

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