

AIR VELOCITY / AVERAGING PITOT TUBES

EVP..

These units consist of tubes with holes along the length which can be used to sense the average air velocity across air ducts. Suitable for use with our EDT.. Air Differential Pressure Transmitters.



INSTALLATION:

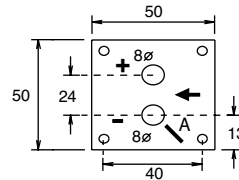
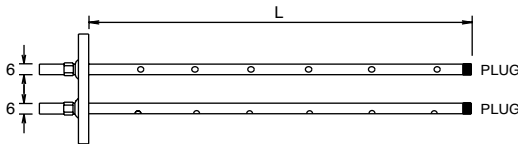
For smaller ducts the tubes can be cut to length. The end plugs must then be refitted.
Mount away from bends, elbows and turbulent areas.
Each flange has a neoprene gasket.
EVP-300 / EVP-500 - These units can be installed from outside the duct and the tubes are self-supporting.

| Type | Length between flange(s) mm | Mounting | Pressure Connection | Tube Material |
|----------------|-----------------------------|----------|---------------------|---------------|
| EVP-300 | 300 | 1 Flange | Brass 6mm Push-on | Brass 6mm OD |
| EVP-500 | 500 | 1 Flange | Brass 6mm Push-on | Brass 6mm OD |

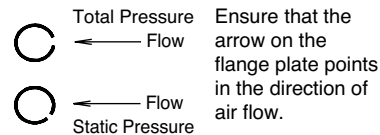
Longer lengths are available to special order.

DIMENSIONS

EVP..



- + Senses total pressure. Holes must face air flow directly
- Senses static pressure. Rotate tube up or down towards position 'A' approx angle 36-42° to obtain correct Velocity Pressure for the required Air Velocity.
Velocity Pressure = Total Pressure - Static Pressure



CALCULATIONS:

To calculate the Air Velocity, use table below or the following equation:

$$\text{Air Velocity} = \sqrt{\frac{2 \times \text{Velocity Pressure}}{1.2}}$$

Example: Velocity Pressure is 62.42 Pa
This equates to **10.2m/s** Air Velocity *

When velocity pressure is established, the ADP Transmitter can be selected, ie with a range of 0 - 100 Pa.

TABLE OF VELOCITY PRESSURE IN PASCALS AGAINST VELOCITY IN METRES PER SECOND

| m/s | 0 | 0.1 | 0.2 * | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
|------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|
| 0 | 0.00 | 0.01 | 0.02 | 0.05 | 0.10 | 0.15 | 0.22 | 0.29 | 0.38 | 0.49 |
| 1 | 0.60 | 0.73 | 0.86 | 1.01 | 1.18 | 1.35 | 1.54 | 1.73 | 1.94 | 2.17 |
| 2 | 2.40 | 2.65 | 2.90 | 3.17 | 3.46 | 3.75 | 4.06 | 4.37 | 4.70 | 5.05 |
| 3 | 5.40 | 5.77 | 6.14 | 6.53 | 6.94 | 7.35 | 7.78 | 8.21 | 8.66 | 9.13 |
| 4 | 9.60 | 10.09 | 10.58 | 11.09 | 11.62 | 12.15 | 12.70 | 13.25 | 13.82 | 14.41 |
| 5 | 15.00 | 15.61 | 16.22 | 16.85 | 17.50 | 18.15 | 18.82 | 19.49 | 20.18 | 20.89 |
| 6 | 21.60 | 22.33 | 23.06 | 23.81 | 24.58 | 25.35 | 26.14 | 26.93 | 27.74 | 28.57 |
| 7 | 29.40 | 30.25 | 31.10 | 31.97 | 32.86 | 33.75 | 34.66 | 35.57 | 36.50 | 37.45 |
| 8 | 38.40 | 39.37 | 40.34 | 41.33 | 42.34 | 43.35 | 44.38 | 45.41 | 46.46 | 47.53 |
| 9 | 48.60 | 49.69 | 50.78 | 51.89 | 53.02 | 54.15 | 55.30 | 56.45 | 57.62 | 58.81 |
| 10 * | 60.00 | 61.21 | 62.42 * | 63.65 | 64.90 | 66.15 | 67.42 | 68.69 | 69.98 | 71.29 |
| 11 | 72.60 | 73.93 | 75.26 | 76.61 | 77.98 | 79.35 | 80.74 | 82.13 | 83.54 | 84.97 |
| 12 | 86.40 | 87.85 | 89.30 | 90.77 | 92.26 | 93.75 | 95.26 | 96.77 | 98.30 | 99.85 |
| 13 | 101.40 | 102.97 | 104.54 | 106.13 | 107.74 | 109.35 | 110.98 | 112.61 | 114.26 | 115.93 |
| 14 | 117.60 | 119.29 | 120.98 | 122.69 | 124.42 | 126.15 | 127.90 | 129.65 | 131.42 | 133.21 |
| 15 | 135.00 | 136.81 | 138.62 | 140.45 | 142.30 | 144.15 | 146.02 | 147.89 | 149.78 | 151.69 |
| 16 | 153.60 | 155.53 | 157.46 | 159.41 | 161.38 | 163.35 | 165.34 | 167.33 | 169.34 | 171.37 |
| 17 | 173.40 | 175.45 | 177.50 | 179.57 | 181.66 | 183.75 | 185.86 | 187.97 | 190.10 | 192.25 |
| 18 | 194.40 | 196.57 | 198.74 | 200.93 | 203.14 | 205.35 | 207.58 | 209.81 | 212.06 | 214.33 |
| 19 | 216.60 | 218.89 | 221.18 | 223.49 | 225.82 | 228.15 | 230.50 | 232.85 | 235.22 | 237.61 |
| 20 | 240.00 | 242.41 | 244.82 | 247.25 | 249.70 | 252.15 | 254.62 | 257.09 | 259.58 | 262.09 |
| 21 | 264.60 | 267.13 | 269.66 | 272.21 | 274.78 | 277.35 | 279.94 | 282.53 | 285.14 | 287.77 |
| 22 | 290.40 | 293.05 | 295.70 | 298.37 | 301.06 | 303.75 | 306.46 | 309.17 | 311.90 | 314.65 |
| 23 | 317.40 | 320.17 | 322.94 | 325.73 | 328.54 | 331.35 | 334.18 | 337.01 | 339.86 | 342.73 |
| 24 | 345.60 | 348.49 | 351.38 | 354.29 | 357.22 | 360.15 | 363.10 | 366.05 | 369.02 | 372.01 |
| 25 | 375.00 | 378.01 | 381.02 | 384.05 | 387.10 | 390.15 | 393.22 | 396.29 | 399.38 | 402.49 |
| 26 | 405.60 | 408.73 | 411.86 | 415.01 | 418.18 | 421.35 | 424.54 | 427.73 | 430.94 | 434.17 |
| 27 | 437.40 | 440.65 | 443.90 | 447.17 | 450.46 | 453.75 | 457.06 | 460.37 | 463.70 | 467.05 |
| 28 | 470.40 | 473.77 | 477.14 | 480.53 | 483.94 | 487.35 | 490.78 | 494.21 | 497.66 | 501.13 |
| 29 | 504.60 | 508.09 | 511.58 | 515.09 | 518.62 | 522.15 | 525.70 | 529.25 | 532.82 | 536.41 |
| 30 | 540.00 | 543.61 | 547.22 | 550.85 | 554.50 | 558.15 | 561.82 | 565.49 | 569.18 | 572.89 |

AIR VELOCITY

AIR VELOCITY TRANSMITTER 0-10VDC

EAV..

To measure the air velocity in HVAC ducts and provide a linear 0-10vdc output signal across the range. The unit operates on a thermal principle based on the cooling effect from the air speed.

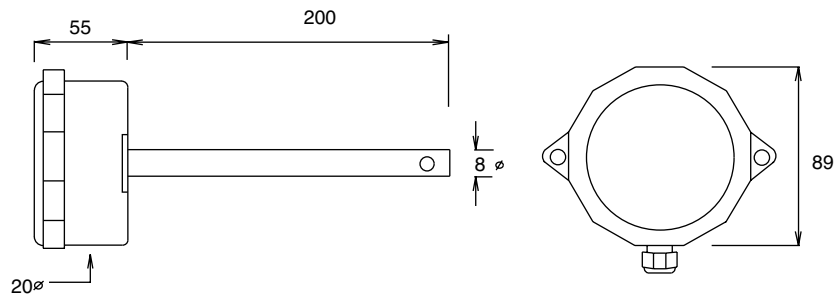


Accuracy $\pm 1\%$ at mid range at 20°C
 Response time < 2s
 Media Temp -10/+60°C
 Media Humidity 0/80%RH
 Max Ambient -20/+60°C
 Allow 15s for the unit to stabilise when it is first switched on.
 Consumption 85mA
 Enclosure Flammability = UL94-V0

| Type | Mounting | Range m/s | Supply $\pm 15\%$ | Output Signal | Load | Enclosure |
|---------------|----------|-----------|-------------------|---------------|---------------|-----------|
| EAV-4 | Duct | 0/4 | 24VAC/DC | 0-10vdc | >10K Ω | IP65 |
| EAV-8 | Duct | 0/8 | 24VAC/DC | 0-10vdc | >10K Ω | IP65 |
| EAV-16 | Duct | 0/16 | 24VAC/DC | 0-10vdc | >10K Ω | IP65 |

DIMENSIONS

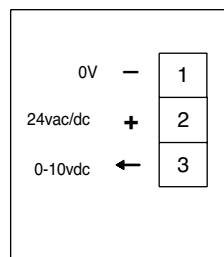
EAV..



Ensure that the air flows directly through the holes in the side of the probe. The air can enter the holes from either side. Mount away from bends, elbows and turbulent areas. Avoid installing in areas where the temperature in the duct changes rapidly. DO NOT SUBJECT THE SENSING ELEMENT TO OILY, DIRTY, DUSTY OR MOIST MEDIA.

WIRING:

EAV..



INSTALLATION: Terminals 0.5-2.5mm Min sensor / control signal cable size 7/0.2mm Max length 100m.
 Screened cable is recommended. The screen should be earthed at controller end only.
 Keep sensor/control signal wires away from power cables/units which may cause interference.