

AVX Air velocity transmitters

Overview

A range of devices for measuring air velocity within a duct and giving 4-20mA or 0-10V linear outputs. A typical application would be in a VAV air conditioning system.

The transmitters operate by measuring the heat loss from one of two sensing elements in the airstream and hence calculating the air velocity. The special design of these elements makes the transmitter accurate over the whole air velocity range and gives excellent immunity to drift.

The sensing elements are clad in metal ensuring a long service life and enabling the sensors to be cleaned easily.



Specifications

Operating characteristics

Air velocity ranges	0-4 m/s (AVX-04v, AVX-04i) 0-8 m/s (AVX-08v, AVX-08i) 0-16 m/s (AVX-16v, AVX-16i)
Accuracy	+/-5% full scale
Operating conditions	0-50°C 0-90% RH (non-condensing)
Output	0-10V DC (AVX-..v) or 4-20mA current loop (AVX-..i)
90% response time(typical)	5 sec
Settling time on power-up (Typical)	15 sec

Electrical specifications

Supply voltage (AVX-..v)	24V DC or AC +10% -15%
Supply voltage (AVX-..i)	24V DC +10% -15%
Max operating current	60mA + output current
Max startup current	85mA
10V output current limit (AVX-..v)	>10mA
Max loop resistance at 24V (AVX-..i)	600

Mechanical details

Case materials	ABS, nylon, aluminium
Probe dimensions	240mm x 19mm dia (special lengths available)
Weight	250g
Fixing hole spacing	65mm

Protection

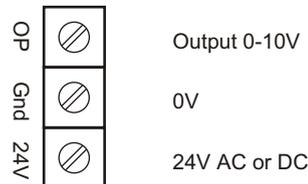
Environmental protection	IP65 (except sensing point)
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Features

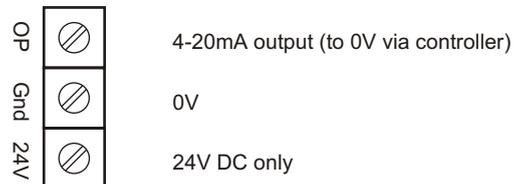
- 4-20mA or 0-10V output versions
- 0-4m/s, 0-8m/s or 0-16m/s versions
- AC or DC powered (4-20mA version DC only)
- linear response
- 5% accuracy
- 5 sec damped response
- no separate control unit
- erosion resistant metal clad sensing elements

Connection diagrams

For 0-10V DC output versions



For 4-20mA output versions



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Electromagnetic compatibility



These products comply with Council Directive 2014/30/EU

The inside of transmitter and the sensing elements near the end of the probe must be protected from electrostatic discharge at all times.

These products should be connected using screened cable which should be grounded at the controller end.

EMC standards:
Emission / Immunity
BS EN 61 326-1 : 2013

Duct details

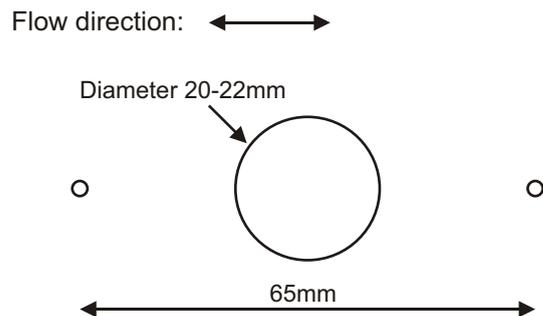
An Alphaglen Air Velocity transmitter will achieve its stated accuracy when mounted in a long straight circular duct in air of a steady temperature with the sensing elements 0.242 radius in from the duct wall and the view through the large holes parallel to the flow direction (the flow at a point 0.242 radius in from the wall is close to the average flow through the whole duct section for a wide range of flows).

In less critical applications, it is recommended that it be mounted at least 2 metres downstream of any heating or cooling devices and at least 6 duct-diameters downstream of any bends or other flow disturbances. Deviation from ideal mounting is likely to reduce stability and accuracy but should not affect repeatability. In many HVAC applications, simply screwing directly to the duct and sealing with the gasket supplied will suffice.

Attaching the cable and cable screen

The cable outer and screen should be cut off flush and long enough to be gripped by the cable gland but not such that the screen is visible inside the housing.

Mounting hole details

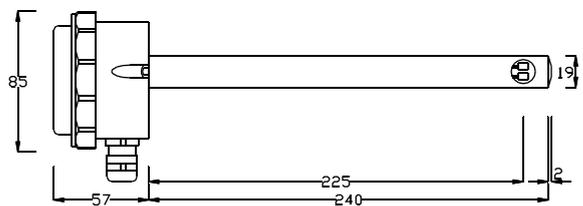


Cleaning

The transmitter may read low if the sensing elements are very dirty. To clean the sensing elements, disconnect the transmitter from power and dip the end of the probe in water and swirl round. If necessary, use detergent but do not apply force to the elements. Rinse and allow to dry thoroughly before reconnecting power.

The body is dustproof and should not need cleaning. If cosmetic cleaning is required, use a damp cloth with water or isopropyl alcohol.

Dimensions



Note: each unit is supplied with a foam gasket 3mm thick before compression

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