AVHT Air velocity transmitters

Alphaglen Laboratories Limited

Overview

A range of devices for measuring air velocity within a duct and giving 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.

They are a low cost alternative to our AVX range and offer excellent value.

Specifications

Operating characteristics

Air velocity ranges	0-4 m/s (AVHT-04)
	0-8 m/s (AVHT-08)
	0-16 m/s (AVHT-16)
Accuracy	+/-8% full scale 10-30°C
Operating conditions	0-40°C
	0-90% RH (non-condensing)
Output	0-10V DC
90% response time(typical)	10 sec
Settling time on power-up (Typical)	20 sec

Electrical specifications

Supply voltage	24V DC or AC +10% -15%
Max operating current	60mA + output current
10V output current limit	>10mA

Mechanical details

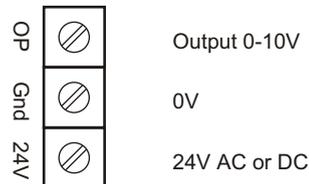|	
Case materials	ABS, aluminium
Probe dimensions	240mm x 19mm dia (special lengths available)
Weight	250g
Fixing hole spacing	65mm

Protection

Environmental protection	IP65 (except sensing point)

Features

- 0-10V output
- 0-4m/s, 0-8m/s or 0-16m/s versions
- AC or DC powered
- linear response
- 8% accuracy (10-30°C)
- 10 sec (approximate) damped response
- no separate control unit

Connection diagram

OP	⊘	Output 0-10V
Gnd	⊘	0V
24V	⊘	24V AC or DC

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Electromagnetic compatability $C \in$

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

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.

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.
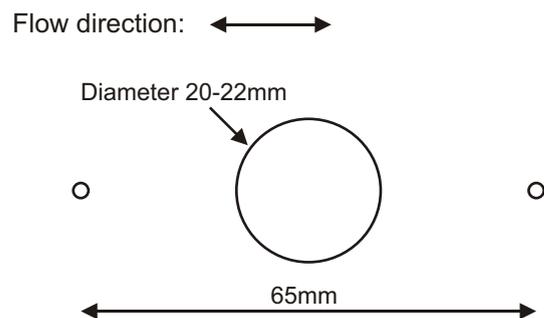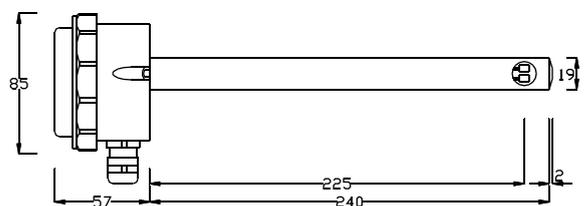
Duct details

An Alphaglen Air Velocity transmitter will achieve its stated accuracy when mounted in a long straight circular duct in air at a steady temperature with the sensing holes 0.242 radius in from the duct wall and the view through the sensing 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.

Mounting hole details

Flow direction:

Diameter 20-22mm

65mm

Dimensions

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

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