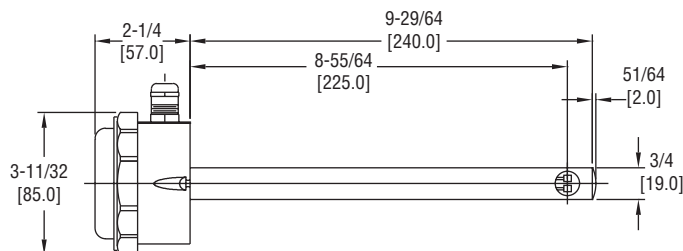




## Series AVU Air Velocity Transmitter

### Specifications - Installation and Operating Instructions



The **Series AVU Air Velocity Transmitters** from Dwyer Instruments are suitable for measuring air velocity within a duct and giving 4-20 mA or 0-10 V 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.

#### INSTALLATION

##### Electromagnetic Compatibility

Series AVU Air Velocity Transmitters have built in immunity to electrical interference. However, to achieve full immunity meeting the standards described below, a screened cable must be used correctly. The cable screen must be earthed at the enclosure of the controller/power supply and connected to the screen inside the AVU casing using the procedure described on the back page. The inside of the transmitter and the sensing elements near the end of the probe must be protected from electrostatic discharge at all times.

##### EMC Standards:

Immunity: BS EN 50082-1: 1992  
Emissions: BS EN 50081-1: 1992

#### SPECIFICATIONS

**Service:** Clean air and compatible, non-combustible gases.

**Accuracy:** ±5% of full scale.

**Response Time (90%):** 5 sec (typical).

**Temperature Limits:** 32 to 122°F (0 to 50°C).

**Humidity Limit:** 0-90% RH, non-condensing.

**Power Requirements:** -A models 24 VDC +10% -15%;  
-V models 24 VDC or 24 VAC +10% - 15%.

**Output Signal:** -A models 4-20 mA current loop;  
-V models 0-10 VDC.

**Loop Resistance:** (-A models) 700 ohms.

**Current Consumption:** 60 mA + output current.

**Max. Start Up Current:** 85 mA; 10 V.

**Output Current Limit:** (-V models) >10 mA.

**Electrical Connections:** Screw terminal. Cable gland for 4-8 mm wire (16 gauge wire).

**Enclosure Rating:** NEMA 6 (IP67) except sensing point.

**Probe Dimensions:** 9.45 x .75" (240 x 19 mm).

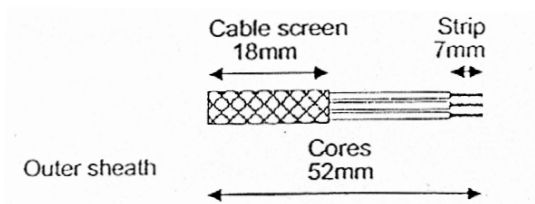
**Mounting Orientation:** Unit not position sensitive. Probe must be aligned with airflow.

**Weight:** 8.8 oz (250 g).

**Agency Approvals:** CE.

**Attaching the Cable and Cable Screen**

The cable gland contains a rubber insert and a plastic insert. Remove these inserts. Strip back the cable as shown below. Pass the cable through the gland outer and rubber and plastic inserts. Fold the screen back over the plastic insert evenly taking care to remove any pieces of the screen that detach. Feed the cores through into the AVU and push the inserts back into the gland noting the orientation of the 3 pipes. Tighten the gland outer in place. Finally connect the cores to the removable 3-way connector.

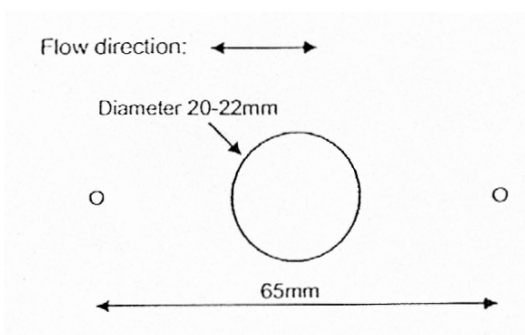


**Duct Details**

The Series AVU Air Velocity Transmitter will achieve its stated accuracy when mounted in a long straight circular duct 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).

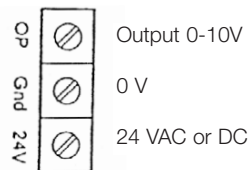
In less critical applications, it is recommended that it be mounted at least 6.6 feet (2 meters) downstream of any heating or cooling devices and at least 6 duct-diameters downstream of any bends or other flow disturbances. Deviation from ideal mounting is likely to reduce stability and accuracy but 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**

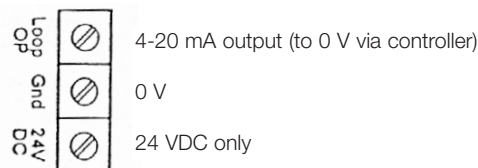


**Connection Diagrams**

For 0-10 VDC output versions



For 4-20 mA output versions



**MAINTENANCE**

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 around. 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.

The Series AVU Air Velocity Transmitters are not field repairable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.