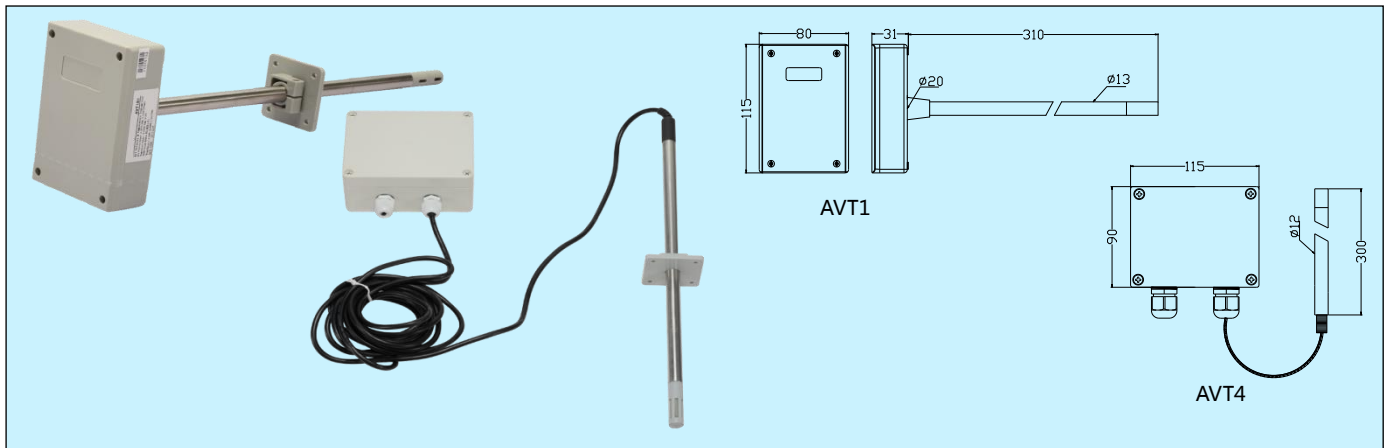


AVT Air Velocity Transmitter Operation Manual



Applications & Features

- It is designed for air velocity monitoring and controlling, can meet most HVAC applications.
- Based on thermal anemometer principle, use innovative and sensitive hot-film sensor, which is insensitive to dust and dirt, easy to install and maintain
- No any moving parts, provide accurate, reliable, sensitive and long-term measurement, with wide range temperature compensation
- Digital technology applied to ensure output linearity and accuracy
- Over voltage and reverse polarity protection with high reliability and anti-interference capacity
- Multiple outputs available, optional relay for alarm or ON/OFF control
- 4 field jumper selectable ranges: 0~5/10/15/20 m/s
- Optional LCD& function keys, supports a variety of functions as parameters setting, modifying and calibrating, etc. See more details on LCD & Keys operation.

Specifications

Air velocity

Sensor: Hot-film sensor
Range: 0~5/10/15/20m/s or other (0~25m/s optional)
Accuracy: $< \pm(0.4\text{m/s} + 3\% \text{ reading})$
 @ 1~20m/s, 25°C, 55%RH, 1013hPa
Response time: 2s

Angle dependence: $< 3\% \text{ reading @ } |\Delta\alpha| < 10^\circ$
Temperature compensation: 10~40°C
Output: 4~20mA(3 wires), 0~10VDC, RS485/Modbus

Temperature
Sensor: Digital temperature sensor
Range: 0~50°C
Accuracy: $< \pm 0.5^\circ\text{C @ } 0\text{--}50^\circ\text{C}$
Response time: 10s
Output: 4~20mA(3 wires), 0~10VDC, RS485/Modbus

Relay: 1xSPDT, 1A/30VDC, 0.5A/125VAC
Output Load: $\leq 500\Omega$ (current), $\geq 2\text{K}\Omega$ (voltage)
Power: 16~28VAC/16~35VDC
Working Temperature: -20~85°C, 0~95%RH(Non cond.)
Housing: Fire-proof ABS
Protection: IP65
Approval: CE

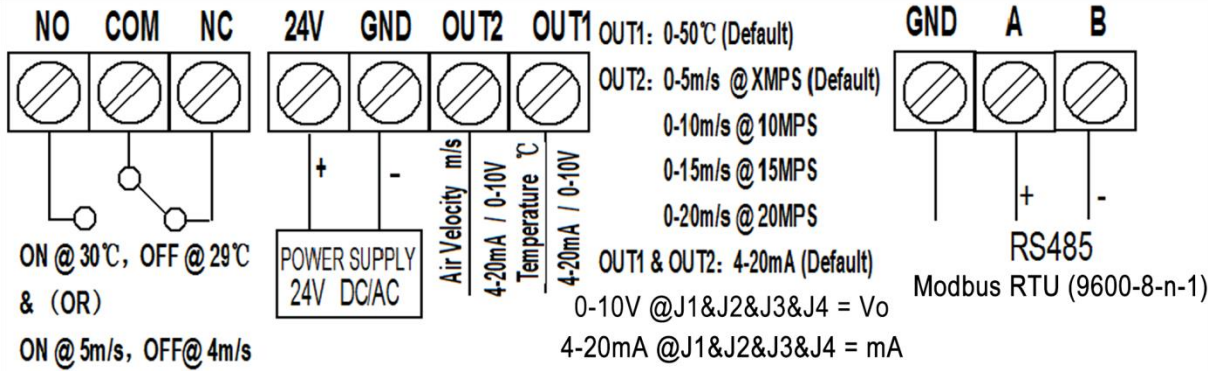
Models

Model	AVT1		Duct mount air velocity transmitter
	AVT4		Remote mount air velocity transmitter
Output		1	4~20mA /0~10VDC
		B	4~20mA/0~10VDC&RS 485/Modbus
Relay		0	N/A
		1	1xSPDT

Note: All products are factory set to 4-20mA as output default, and can be set to 0-10V by jumper on the PCB

Connection

Different models have different electrical terminals. Please wire specific model according to the wiring diagram inside the front cover.



Installation (mm)

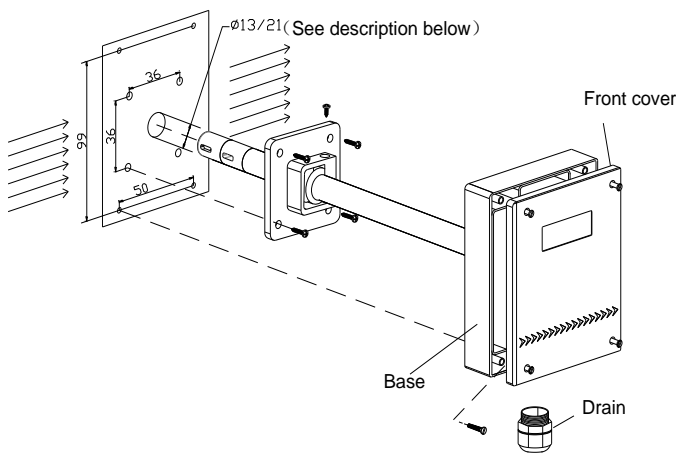


Fig.1

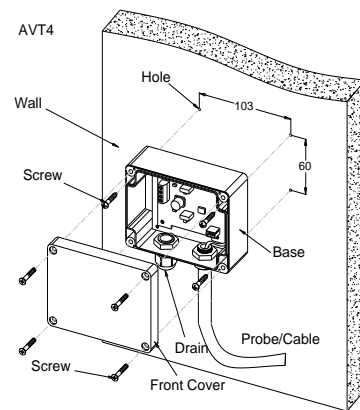


Fig.2

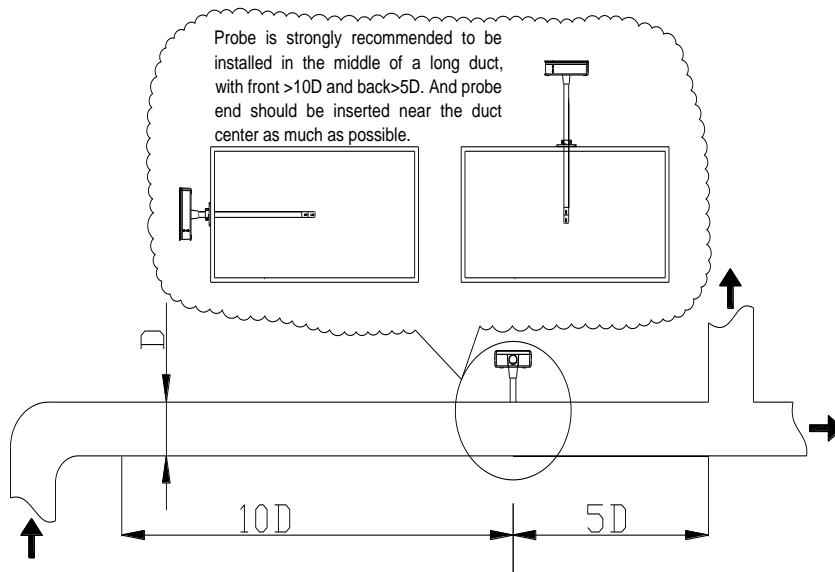


Fig.3

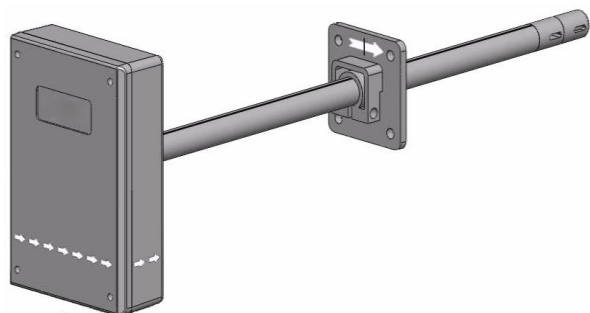


Fig.4



Fig.5

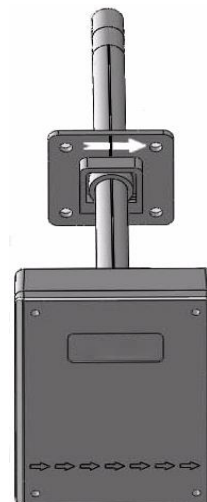


Fig.6

Installation and instruction

- AVT1 is recommended to be installed with flange. The depth being inserted is adjustable. Install the flange on the duct with 4 screws, and use another screw to tighten the probe with the flange. If installed with flange, open a hole of $\Phi 13$ mm on duct. If do not use flange (not recommended), open a hole of $\Phi 21$ mm (Fig.1) on duct. After installing, the duct hole should be air-tight.
- AVT4's housing should be installed vertically on the wall, with the cable glands downward. Select a suitable place on the wall. It should be far away from any heat or cool sources. If needed, there should be a shield to prevent the sensor from direct sun light and rain. Drill 4 holes on the wall according to the dimensions (Fig.2). Install AVT4's base with the 4 screws after removing the front cover.
- The air velocity probe should be installed in stable air flow. It is strongly recommended to be installed in the middle of a long duct, with front $>10D$ and back $>5D$. And try to insert the probe end near the duct center as much as possible. Only under these install conditions, it can show the virtual air velocity in the duct (Fig.3).
- It was calibrated in standard wind tunnel with fixed air flow direction in factory. So it should be installed in field with the same flow direction. The direction is indicated by 3 arrows on the top of the probe, on the install flange and on the front cover respectively, as Fig. 4, 5 and 6. Installer can use any of these 3 arrows to ensure the air flow is parallel with the arrows and with the same direction. More angles will bring more measurement error. If the air flow is opposite to the arrow, the output will not be accurate.
- Remove the front cover. Install the drain on the base and ensure it is completely air-tighten. Then feed the wires from DDC/PLC, etc. into the base, and finish wiring according to the diagram inside the cover.
- Restore the front cover. Make sure to install the cover completely air-tight with the base (there is a seal ring between the cover and the base) so that the whole housing could meet up to IP65 protection.

Attention

It should be power OFF during installing and wiring. When using 24VAC, it is strongly recommended to power the unit with independent transformer. If sharing a 24VAC transformer with other equipments such as controllers, transmitters or valve actuators, please make sure the terminals 24V and GND are connected correctly. Otherwise, it will perhaps reduce serious damages.

Warranty

- It has limited warranty for eighteen (18) months after production date.
- It does not extend to any unit that has been subjected to misuse or accident.
- It is, in any event, strictly limited to the replacement or repair of the product itself

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