



The AVT air velocity transmitters are electronic air velocity and temperature transmitters for air. They measure air velocity and temperature in ventilation ducts using a duct mount probe.

The transmitter provides separate readings and outputs for air velocity and temperature. The transmitter has one velocity output and one temperature output. The available output signal modes are voltage (Vdc) and current (mA). The voltage output is scalable.

The transmitter options include:

- Display (-D models)
- Field adjustable relay (-R models)
- Modbus RTU communication (-MOD models)
- Three probe lengths
  - 112 mm (-100 models)
  - 212 mm (standard models)
  - 412 mm (-400 models)

The models without a display have three field selectable measurement ranges for air velocity. You can select the measurement range with jumpers.

The -D models provide a freely selectable measurement range for air velocity. You can select the measurement range via the device menu (-D models).

The -D models have a PID controller for air velocity. The PID controller controls the output according to the air velocity setpoint you define for the controller.

You can configure the device settings using:

- the device menu (-D models)
- Modbus communication (-MOD models)

The transmitter comes with an adjustable duct flange suitable for both round and rectangular ducts.

The AVT air velocity transmitters are typically used in building automation systems in the HVAC/R industry for in-duct air flow and velocity monitoring, in-duct temperature monitoring, and VAV applications.

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For pricing or any further information, please contact Omni Instruments Ltd.


## MODEL SUMMARY

|                     |                |                          |   |  |  |        |  |  |
|---------------------|----------------|--------------------------|---|--|--|--------|--|--|
| Example:<br>AVT-D-R | Product series |                          |   |  |  |        |  |  |
|                     | AVT            | Air velocity transmitter |   |  |  |        |  |  |
|                     |                | Modbus                   |   |  |  |        |  |  |
|                     |                | -MOD                     | with Modbus (not available for -R models) |  |  |        |  |  |
|                     |                |                          | without Modbus                            |  |  |        |  |  |
|                     |                |                          | Display                                   |  |  |        |  |  |
|                     |                |                          | -D  | with display   |  |        |  |  |
|                     |                |                          |   | without display (not available for -MOD and -R models) |  |        |  |  |
|                     |                |                          |   | Relay  |  |        |  |  |
|                     |                |                          |   | -R   | with relay (not available for -MOD models) |        |  |  |
|                     |                |                          |   |  | without relay                              |        |  |  |
|                     |                |                          |   |  | Probe length                               |        |  |  |
|                     |                |                          |   |  |  | 212 mm |  |  |
|                     |                |                          | -100                                      |  | 112 mm                                     |        |  |  |
|                     |                | -400                     | 412 mm                                    |  |  |        |  |  |
| Model               | AVT            |                          | -D  | -R   |  |        |  |  |

## TECHNICAL SPECIFICATIONS

| Property                 | Value  |
|--------------------------|--|
| Supply                   | 24 Vac/dc $\pm$ 10 %   |
| Current consumption      | max. 80 mA + 40 mA with mA output + 10 mA with relay option (DC supply voltage)  |
| Relay (-R models)        | 250 Vac, 6 A res., adjustable operating direction, switching point and hysteresis  |
| Air velocity measurement | * factory setting / ** selectable in -D models   |
| Range                    | 0...2 m/s, *0...10 m/s, 0...20 m/s, **freely selectable<br>**200...4000 ft/min   |
| Accuracy (typ. at 25 °C) | $v \geq 0.15$ m/s and $\leq 2$ m/s (0.2 m/s + 2 % from reading)<br>$v > 2$ m/s and $\leq 10$ m/s (0.5 m/s + 3 % from reading)<br>$v > 10$ m/s (1.0 m/s + 3 % from reading) |
| Response time            | T63: 1.5 s (typical, 63 % of the change)   |
| Measurement units        | *m/s, **ft/min   |
| Temperature measurement  | * factory setting / ** selectable in -D models   |
| Range                    | *0...50 °C, **-25...50 °C, **-13...122 °F (probe)  |
| Accuracy (25 °C)         | $\pm 0.5$ °C (air velocity > 0.5 m/s)  |
| Measurement units        | *Celsius, **Fahrenheit   |
| Warm-up time             | 15 seconds   |

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| Property  | Value  |
|---|--|
| <b>Outputs</b>  |  |
| Output signal 1 (T out [C])   | 0...10 Vdc, load > 1 kΩ<br>4...20 mA, load 20...400 Ω  |
| Output signal 2 (v out [m/s])   | 0...10 Vdc, load > 1 kΩ<br>4...20 mA, load 20...400 Ω  |
| Accuracy  | Vout:<br>± 0.025 V at 25 °C<br><br>Iout:<br>typically ±0.04 mA at 25 °C, load 100 Ω<br>max. ± 0.1 mA at 25 °C, load 20...400 Ω   |
| Relay output (-R models)  | 3-screw terminal block (NC, COM, NO), potential free SPDT<br>30 Vdc, 6 A / 230 Vac, 6 A res. (IEC 60664-1 OVC II)  |
| Modbus communication (-MOD models)  | * factory setting  |
| Protocol  | Modbus RTU   |
| Interface   | RS-485   |
| Bus speed   | 9600/*19200/38400 bit/s  |
| Data bits   | 8  |
| Parity  | *none/odd/even   |
| Stop bits   | 1  |
| Unit load   | 1/8 UL   |
| Display (-D models)   | 2-line display (12 characters/line), 46.0 x 14.5 mm<br>Line 1: velocity / Line 2: temperature (default)<br>Line 1: direction of control output (optional)<br>Line 2: relay status (optional) |
| <b>Wiring terminals</b>   |  |
| Type  | Tilted screw terminals   |
| Wire  | 0.2...1.5 mm <sup>2</sup> (24...16 AWG)  |
| Tightening torque   | 0.4 Nm   |
| Commissioning tool  | MyTool® Connect dongle with Produal MyTool® application  |
|  |  |
| Appliance class (IEC 60664-1)   | III  |
| <b>Operating conditions</b>   |  |
| Ambient temperature   | -25...50 °C (probe)<br>0...50 °C (transmitter housing)   |
| Ambient humidity  | 0...95 %rH (non-condensing)  |
| <b>Storage conditions</b>   |  |
| Temperature   | -20...70 °C  |

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| Property                 | Value  |
|--------------------------|--|
| Housing                  |  |
| Protection class         | IP54, cable downwards / -R and -MOD models: IP54, cables downwards and cables in both cable glands   |
| Cable gland              | M16 (2 x M16: -R and -MOD models)  |
| Materials                | ABS plastic, PC plastic (cover)  |
| Probe                    |  |
| Dimensions               | 10 x 112/212/412 mm  |
| Materials                | Stainless steel (AISI 304) (probe), LLPDP (duct flange)  |
| Mounting                 | with a duct flange, probe immersion length adjustable:<br>50...95 mm (-100 models)<br>50...195 mm (standard models)<br>50...395 mm (-400 models) |
| Dimensions (w x h x d)   | 86 x 93 x 163 mm (-100 models)<br>86 x 93 x 263 mm (standard models)<br>86 x 93 x 463 mm (-400 models)   |
| Weight                   | 220 g  |
| Warranty                 | 5 years  |
| Company certificates     |  |
| Quality management       | ISO 9001   |
| Environmental management | ISO 14001  |
| Conformance              | CE UKCA  |
| EMC                      | 2014/30/EU S.I. 2016 No. 1091  |
| RoHS                     | 2011/65/EU + (EU) 2015/863 S.I. 2012 No. 3032  |
| WEEE                     | 2012/19/EU S.I. 2013 No. 3113  |
| LVD                      | 2014/35/EU S.I. 2016 No. 1101  |

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