

AVT

Temperature and Air Velocity Transmitter

thermokon[®]
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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» APPLICATION

Temperature- & Air velocity transmitter for measuring and monitoring air velocities in supply/exhaust air plants, ventilators, regulation flaps and electro damper registers.

» TYPES AVAILABLE

- AVT *Temperature- & Air Velocity Transmitter*
- AVT-D *Temperature- & Air Velocity Transmitter with LC-Display*
- AVT-D-R *Temperature- & Air Velocity Transmitter with LC-Display and Relay*

» SECURITY ADVICE – CAUTION

The installation and assembly of electrical equipment should only be performed by authorized personnel.



The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

CAUTION! Risk of electric shock due to live components within the enclosure, especially devices with mains voltage supply (usually between 90..265 V).



Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

» PRODUCT TESTING AND CERTIFICATION



Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>

» NOTES ON DISPOSAL



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

» TECHNICAL DATA

Measuring values	air velocity and temperature	
Medium	air or other non-flammable/non-aggressive gases	
Output voltage	2x 0..10 V min. load 1 k Ω	
Output ampere	2x 4..20 mA max. load 400 Ω	
Output switch contact (optional)	AVT LCD relay relay with change-over contact (volt free contact), 250 V ~ / 6 A, 30 V = / 6 A	
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV	
Power consumption	max. 2 W AVT-R LCD: max. 2,4 W	
Measuring range temp.	0..+50 $^{\circ}\text{C}$	
Measuring range velocity	0.2 m/s 0..10 m/s 0..20 m/s selectable at the device	
Accuracy temperature	<0,5 K ($v > 0,5$ m/s) $\pm 0,5$ K (typ. at 21 $^{\circ}\text{C}$)	
Accuracy velocity	0..2 m/s: <0,2 m/s + 5% of measuring value* 0..10 m/s: <0,5 m/s + 5% of measuring value* 0..20 m/s: <1,0 m/s + 5% of measuring value*	*typ. at 22 $^{\circ}\text{C}$, thermal shift $\pm 0,8\%$ / FS $^{\circ}\text{C}$ Minimum stabilisation time 10 min.
Sensor	calorimetric measuring principle	
Display (optional)	LCD 3,5", 45.7 x 12.7 mm optional for indication of measured values	
Enclosure	ABS cover PC	
Protection	IP54 according to EN 60529	
Cable entry	M16 for wire max. $\varnothing=8$ mm	AVT-R LCD 2x M16
Connection electrical	terminal block, max. 1,5 mm ²	
Pocket	stainless steel V2A L=210 mm , $\varnothing=10$ mm	
Ambient condition	0..+50 $^{\circ}\text{C}$ max. 85% rH short term condensation	
Delivery contents	incl. mounting flange	
Notes	optional with display "LCD", optional with relay, adjustable Immersion length: 50..180 mm, using mounting flange adjustable switching threshold and hysteresis	

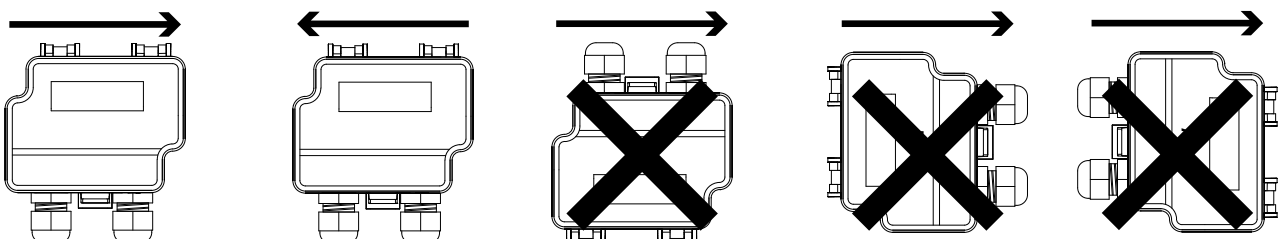
» MOUNTING ADVICES

The supply cable and control cable for relay should be separated, if high voltage (no safety extra-low voltage) is used as relay contact. Both cables have their own cable entries.

The relay settings need to be done before high voltage (no safety extra-low voltage) is connected to the device. This ensures human protection against electrical shock.

A prerequisite for the operation is a proper installation of all electrical supply, control and sensing leads as well as the pressurized connection line.

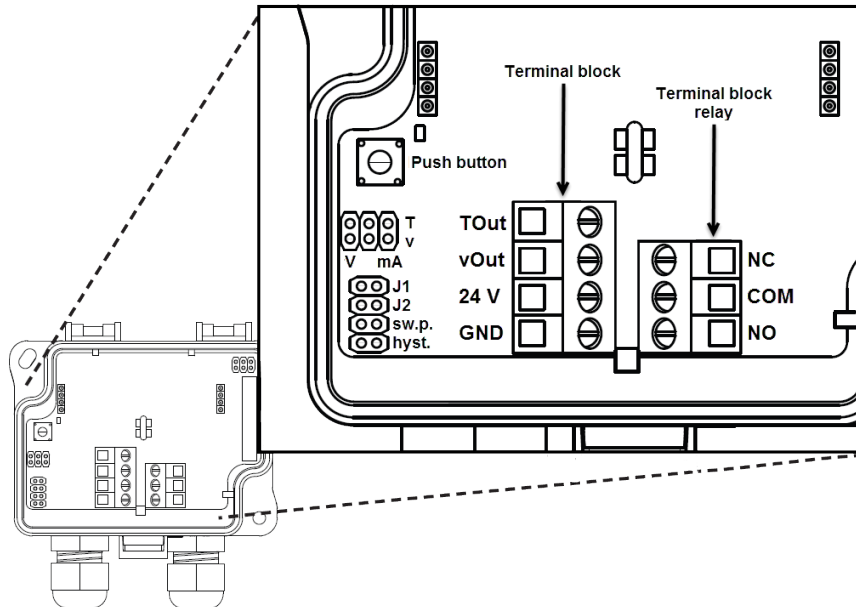
According to the direction of flow, the installation is to be carried out according to the following illustration:



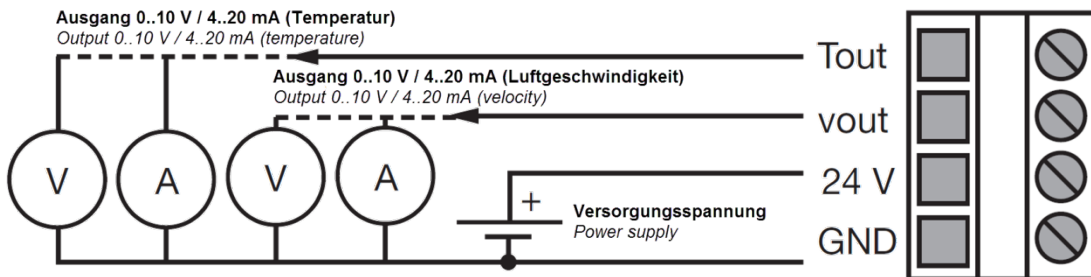
» **MAINTENANCE RECOMMENDATION - CLEANING INSTRUCTIONS**

To ensure the measurement accuracy, clean the sensor head regularly with compressed air and a mild detergent. The cleaning interval depends on the air cleanliness. Fibers, dust or other particles can clog the sensor surface and interfere with the measurement. Long exposure without maintenance can cause false readings."

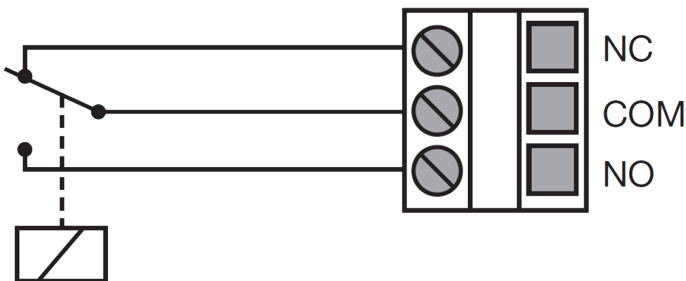
» **TERMINAL CONNECTION PLAN**



Wiring of the analog outputs (Tout/vout)

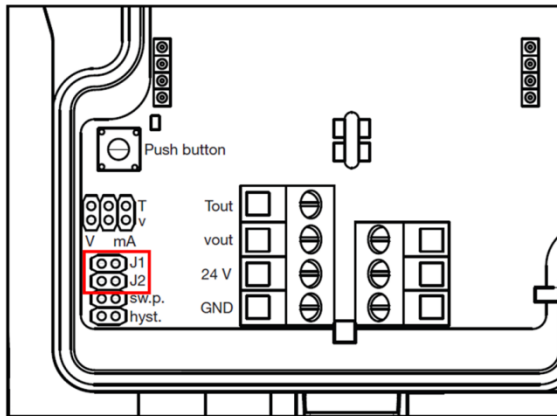





Wiring of the relay



» **CONFIGURATION**

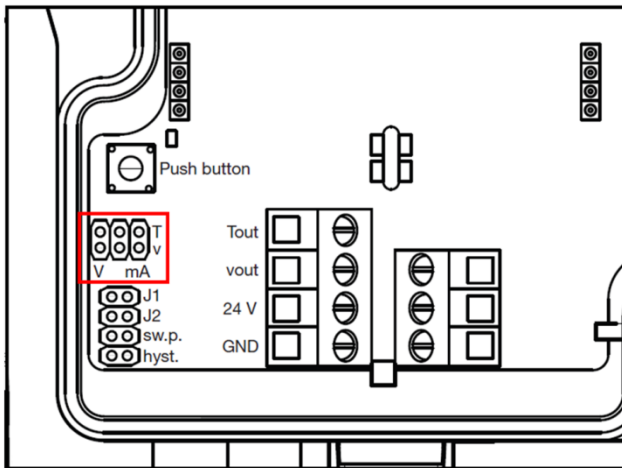
1. Jumper setting for measuring range







- Measuring range: 0..2 m/s**

 Jumper (J1): installed
 Jumper (J2): not installed
- Measuring range: 0..10 m/s**

 Jumper (J1): not installed
 Jumper (J2): installed
- Measuring range: 0..20 m/s**

 Jumper (J1): installed
 Jumper (J2): installed

2. Output settings (via jumper)

Both outputs (temperature and air velocity) can be configured as a voltage (0..10 V) or current output (4-20mA) independently.



- 
 T Temperature output (Tout): T= Voltage (V)
 v Air velocity output (vOut): v= Voltage (V)
 V mA
- 
 T Temperature output (Tout): T= Amperage (mA)
 v Air velocity output (vOut): v= Amperage (mA)
 V mA
- 
 T Temperature output (Tout): T= Voltage (V)
 v Air velocity output (vOut): v= Amperage (mA)
 V mA
- 
 T Temperature output (Tout): T= Amperage (mA)
 v Air velocity output (vOut): v= Voltage (mA)
 V mA

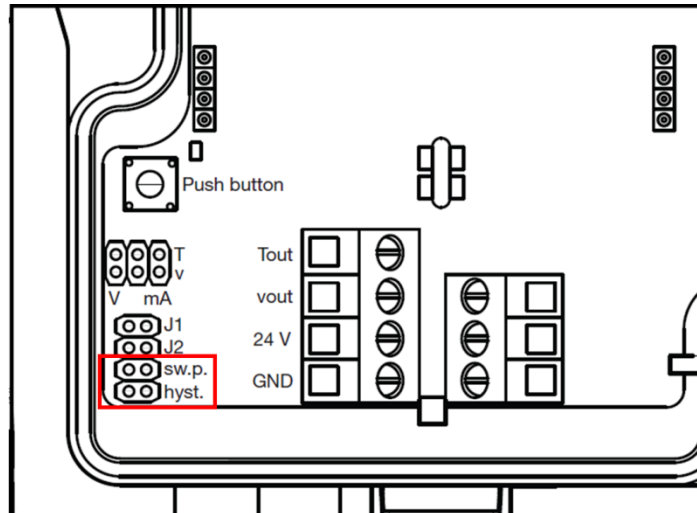
3. Relay configuration (only possible at Type with relay)

a) Switching threshold / Switching-Point

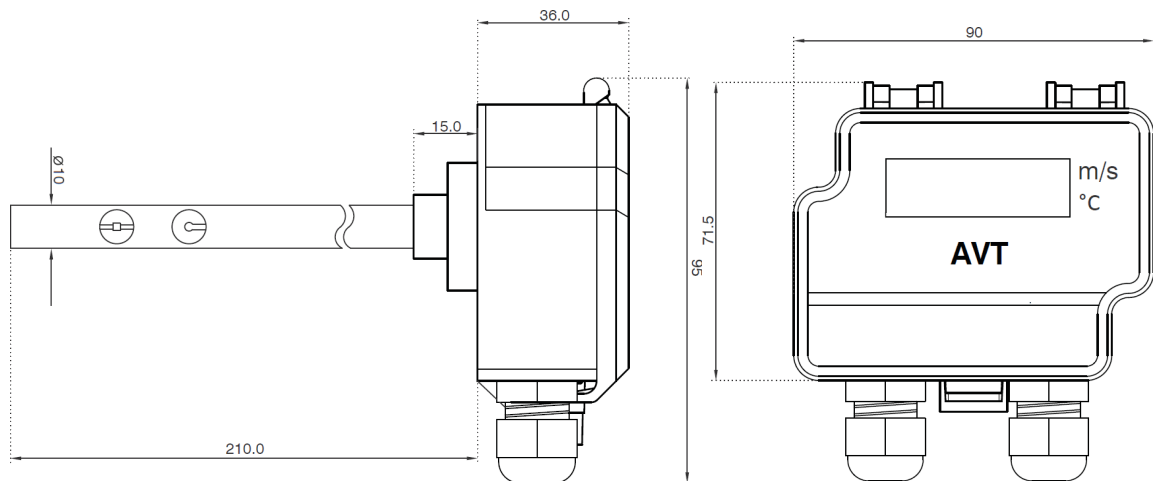
- plug a jumper on pins, which are marked with "sw.p." (switching threshold / Switching Point).
- Pressing the button (push button) repetitive or permanent, the value shown on the display is incremented as long until the desired switching threshold is set. After reaching the range limit, the display jumps back to the start of measuring range.
- After setting the desired value, remove the jumper.

b) Hysteresis

- Insert a jumper on pins that are marked "hyst." (hysteresis).
- Pressing the button (push button) repetitive or permanent, the hysteresis shown in the display is incremented as long until the desired value is set. After reaching the maximum value, the display returns to the initial value.
- After setting the desired value, remove the jumper.
The configuration is complete.



» DIMENSIONS (MM)



» ACCESSORIES INCLUDED

Mounting flange