



## DESCRIPTION AND APPLICATION

The flow sensors are designed for reliable measurement of air flow and other gaseous media. Combined with the central mounting holder, it is possible to use the sensor for measurements of flow in air conditioning ducts or piping. The temperature resistance of the sensor head is -30 to 70 °C. This critical temperature should not be exceeded, not even for a short time. The sensors can be used for all control systems that are compatible with the 0 to 10 V voltage output. Easy mounting of the temperature sensor is ensured by the unique "S head" design. The output voltage signal is not linear.

The sensors are designed for operation in chemically non-aggressive environments.

## ACCESSORIES

- The plastic central holder

## DECLARATION, CERTIFICATES, CALIBRATION

**EC Declaration of Conformity** – in accordance with Act No. 22/1997 Coll. as amended for sensors with an output of 0 to 10 V.

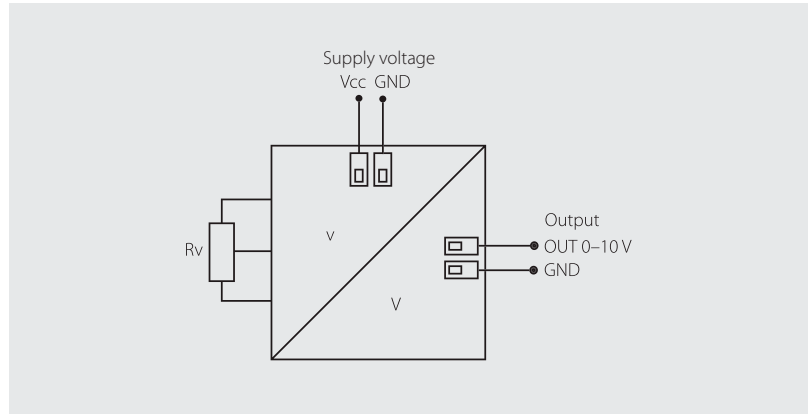
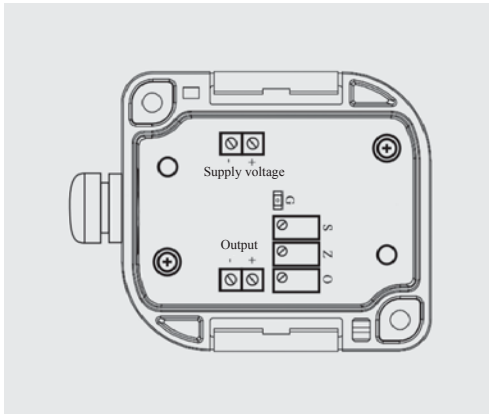
**Calibration** – at the customer's request the calibration can be provided in an accredited laboratory.



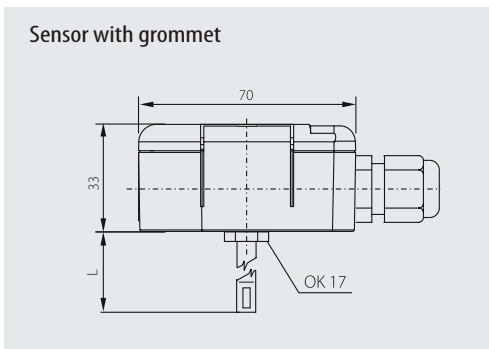
## SPECIFICATION

Sensor type	SNP	
Sensing element type	FS5	
Standard measuring range / Recommended measuring range	0–5 m/s / 2–5 m/s	
	0–10 m/s / 2–10 m/s	
	0–20 m/s / 2–20 m/s	
	user selectable 0–100 m/s	
Supply voltage	15 to 30 VDC (recommended 24 VDC)	
Power consumption	1 W	
Output signal	0–10 V	
Measuring sensitivity	0.01 m/s	
Measuring principle	Thermoelectric and anemometric principle	
Time to stabilize after power-up	15 minutes	
Measurement error	< ±3 % of the range or ±0.3 m/s	(Applied to air, temperature 25±5 °C, humidity 40±5 % RH, atmospheric pressure 1000±10 hPa in recommended measuring range. Error after power-up is approx. +2V, after 5 min. < +0.3V, after 10 min. < +0.1V.)
Response time	< 2 s	
Sensor wiring	according to the wiring diagram	
Recommended wire cross-section	0.35 to 1.5 mm <sup>2</sup>	
Material of enclosure	Polyamide	
Dimensions enclosure	70 x 63 x 34 mm	
Operating temperature enclosure	-30 to 70 °C	
Operating temp. probe with sensing element	-20 to 150 °C	
Degree of protection of enclosure	IP 65 according to EN 60 529	
Degree of protection of measuring probe	IP 20 according to EN 60 529	
EMC compatibility - criterion A for:	EMC emission	EN 61 000-6-3
	EMC immunity	EN 61 000-6-2
	Electrostatic discharge	IEC 61 000-4-2
	Electromagnetic field	IEC 61 000-4-3
	Fast transient phenomena	IEC 61 000-4-4
	Shock pulse	IEC 61 000-4-5
	Electromagnetic interference	IEC 61 000-4-6
	Short-time interruption	IEC 61 000-4-11
Type of grommet	M 16 x 1.5	
Measuring probe diameter	10 mm	
Measuring probe standard lengths	100 mm a 200 mm	
Weight	0.15 kg	

## ■ WIRING DIAGRAM



## ■ DIMENSIONAL DRAWING



## ■ SENSOR INSTALLATION AND OPERATION

It is necessary to open the plastic head before the supply cable is connected. To open the head, use a standard flat-tip screwdriver and insert the tip subsequently into both of the slots in the cap and release it by tilting the tool up. Put the supply cable through the loose grommet and connect it to the terminals according to the wiring diagram. The recommended wire cross-section is 0.35 up to 1.5 mm<sup>2</sup> and the external diameter of the circular section of the cable is 4 to 8 mm.

If the supply cable is located near high voltage cables or those supplying the units generating interfering electromagnetic fields, a shielded cable should be used.

The sensors are installed on a horizontal surface using the plastic holder with grommet or the internal holes in the sensor head. The holes are accessible after removing the cap from the head. The plastic holder is not included in the delivery.

The recommended operating position is with the grommet not facing up. In order to ensure impermeability, the grommet should be tightened after connection of the supply cable. When closing the head, the clips must click into the proper seats.

The sensor may only be installed by the person with electrical qualification according to § 5 Regulation No. 50/1978 Coll. and who has been well familiarized with the "Operating Instructions".

SNP-type of flow sensors should not be used for measuring in the following locations:

- Where the flow sensors may be subject to vibrations or mechanical effects.
- With explosion hazard or with substantial electrical interference.
- In chemically aggressive environments.
- Where sensors could be exposed to direct thermal radiation (lighting, radiators, etc.) or to solar radiation.

## ■ FLOW SENSOR SETTING

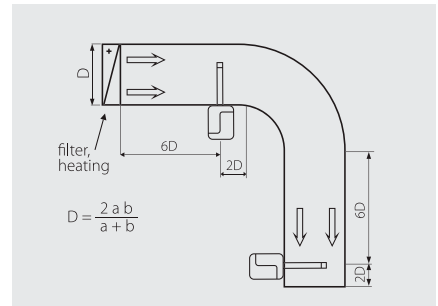
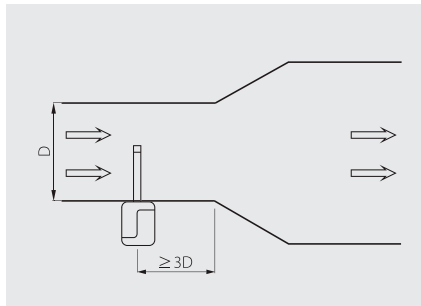
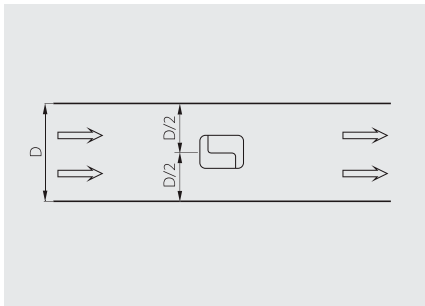
Once the supply voltage is connected to terminals + and -, the G control LED (green) is on. The sensor has three trimmers for setting up. The S and O trimmers are set factory and it is not allowed to adjust them. The Z trimmer is set up in such a way so that the output voltage is 10 V at the nominal flow speed. You can use the Z trimmer to adjust the 10 V output voltage for a different flow speed. The change of setting may be necessary in the cases when the air flow speed is not measured.

**RECOMMENDED MOUNTING OF THE SNP-SERIES FLOW SENSORS:**

For the sensor to operate correctly, it is essential it is properly mounted. The positioning and mounting of the sensing head in the air flow has a relevant impact on the measurement accuracy. Please find below the basic guidelines on correct positioning of the flow sensor in the duct system:

**Correct:**

The axis of the cable grommet should be horizontally in line with the air flow direction.



For rectangular ducts, the diameter **D** is calculated from the rectangle sides **a, b**.

**Incorrect:**

