

Simply a question of  
**better measurement**



## **SCHMIDT® Flow Sensor SS 20.250**

The smallest all-rounder  
for universal use and  
high-performance

Ventilation / air-conditioning

Cleanroom / pharmaceuticals





## Perfect flow measurement

For ventilation, air-conditioning, cleanroom and pharmaceutical applications.

In many applications, direct measurement of the flow velocity and of the volumetric flow in air and gases is the ideal solution. Owing to the high requirements in modern control technology, the flow sensor used must be able to measure precisely and quickly over an extremely wide range from "almost zero" to the maximum value.

**Typical applications of the SCHMIDT® Flow Sensor SS 20.250 with dumbbell head technology include:**

- Monitoring and energy-efficient controlling of fans
- Continuous monitoring of filter units
- Safe control of the volumetric flow of extraction units
- Monitoring of the laminar flow in cleanrooms

### The smallest all-rounder

Thanks to its compact mechanical design, the **SS 20.250** can be installed very easily via a flange or a compression fitting. Its complete electronics are housed in the robust metal sensor tube, which has a diameter of only 9 mm.

### Technology

Thanks to the dumbbell technology used and the high flow angle (radial: 360°, axial:  $\pm 45^\circ$ ), the sensor can be positioned in the gas flow safely and quickly. In addition to detecting the standard flow velocity of 0.06 to 20 m/s, it also measures the temperature of the medium. The available linear output signals are 4...20 mA and 0...10 V in each case – as a function of the connected load resistance giving you a universal sensor and automatic detection of **U** or **I** output.

### Measuring accuracy in black and white

Optionally, the **SCHMIDT® Flow Sensor SS 20.250** can also be delivered with high-precision calibration and factory calibration certificate, which documents its high precision and reproducibility. You can have this calibration renewed at any time.

### Protection from dust and aggressive gases

Using the patented dumbbell head also allows measurements to be made in dust-containing gases. If the sensor gets dirty, it can be cleaned again by the user without problems. Upon request the sensor can also be delivered with one of two special protective coatings to increase the resistance against aggressive media such as hydrochloric acid, acetone, sulfuric acid and many more.

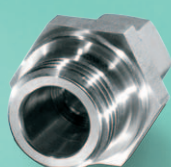
### Accuracy in black and white

On request the **SCHMIDT® flow sensor SS 20.250** can be delivered with an factory calibration certificate which documents the high accuracy and reproducibility of flow measurement on the basis of real measuring values and deviations. **SCHMIDT Technology** carries out the measurement in reference channels. This calibration can be renewed by the user at any time.

With protective coating (black)



### Accessories



Compression fittings



Welding sleeves

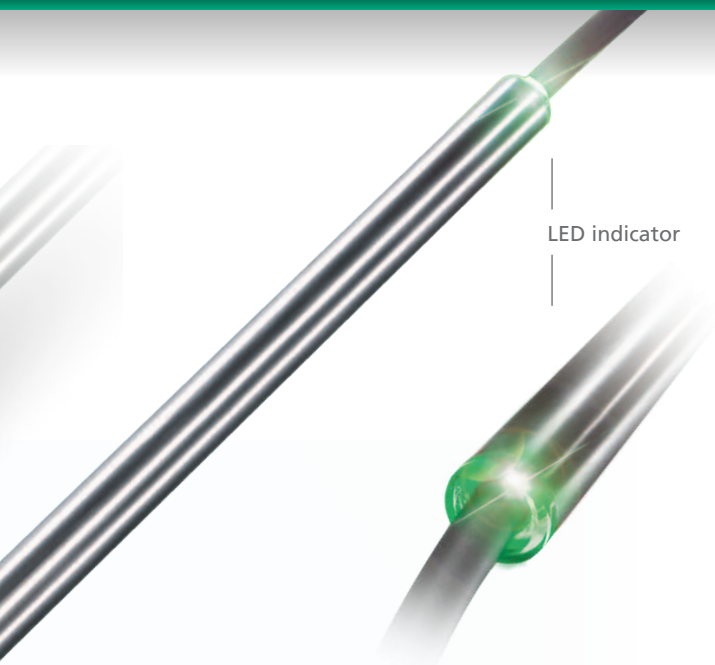


Mounting flange



Protective clip





### Everything in view

Function monitoring by means of an integrated 2-color LED display (green & red) signals the operating state and assists in quick troubleshooting on site.

### Everything in flow

The integrated temperature measurement is located behind a metal sleeve in the sensor tube which is inserted into the medium to be measured. This allows fast response to changes in flow and temperature of the media.

### Everything in its place

The sensor element for the flow measurement is located between the two "dumbbell disks", which ensure an aerodynamic flow line. A resistant plastic coating (PU, black) or Parylene (transparent) is available as an option.



Wall mounting flange



LED display in wall housing

## Technical data

Measurement specific data	
Measurement values	- standard velocity $w_N$ , based on standard conditions of 20 °C and 1,013.25 hPa - temperature of the medium $T_M$
Medium to be measured	Air or nitrogen, other gases upon request
Measuring range $w_N$	0 ... 1 / 10 / 20 m/s / selectable, optional special measuring range 1 ... 20 m/s
Lower detection limit $w_N$	0.06 m/s
Measuring range $T_M$	-20 ... +70 °C
Measuring accuracy	
Standard $w_N$ <sup>1)</sup>	±(5 % of measured value + [0.4 % of fmr; min. 0.02 m/s])
High precision $w_N$ <sup>1)</sup> (optional)	±(3 % of measured value + [0.4 % of fmr; min. 0.02 m/s])
Response time ( $t_{90}$ ) $w_N$	3 s (jump from 0 to 5 m/s of air)
Temperature gradient $w_N$	< 2 K/min at 5 m/s
Measurement accuracy $T_M$ (for $w_N > 1$ m/s)	± 1 K (10 ... 30 °C); ± 2 K (remaining measuring range)
Operating temperature	
Sensor and electronics	-20 ... +70 °C
Storage temperature	-30 ... +85 °C
Material	
Sensor tube	stainless steel 1.4571
Sensor head	PBT glass-fiber-reinforced, Stainless steel 1.4571
Protective coating (optional)	Polyurethanderivat, Parylene
Connecting cable	PUR, halogen-free
General data	
Humidity	measuring mode: non-condensing (< 95 % RH)
Operating pressure	atmospheric (700 ... 1,300 hPa)
Display	dual LED green / red
Supply voltage	24 V AC/DC ± 10 %
Current consumption	< 60 mA (typical), max. 100 mA
Output signals for temperature and flow Auto U/I	0 ... 10 V / 4 ... 20 mA (short-circuit protected): voltage output: $R_L > 500 \Omega$ current output: $R_L < 500 \Omega$ hysteresis: 50 $\Omega$
Connection	permanently connected cable, 5-pin, length 2 m or selectable
Admissible cable length	max. 100 m current output / max. 15 m voltage output
Installation position	any
Minimum immersion depth	58 mm (< 58 mm upon request)
Ingress protection / protection class	IP 65 / III (SELV) or PELV
Sensor length	300 / 500 mm
Weight	200 g max.

<sup>1)</sup> under reference conditions, related to the calibration reference  
fmr = final measuring range

## Order information SCHMIDT® Flow Sensor SS 20.250

	Description	Article number					
Basic sensor	SCHMIDT® Flow Sensor SS 20.250; 2x output signal 4...20 mA / 0...10 V; cable length 2 m	526 340-	X	Y	Z	P	A
	<b>Options</b>						
Mechanical type	Sensor length 300 mm		1				
	Sensor length 500 mm		2				
Measuring range, adjustment accuracy and calibration	Measuring range 0...1 m/s			1			
	Measuring range 0...10 m/s			2			
	Measuring range 0...20 m/s			3			
	Special measuring range (1...20 m/s; 0.1 m/s)			9			
	Standard adjustment				1		
	Standard adjustment with factory calibration certificate				3		
	High-precision flow adjustment incl. factory calibration certificate				2		
	Without protective coating					1	
	With protective coating (PU, black; sensor head only; not for A=3)					2	
	Fully coated (Parylene, transparent; ca. 40 mm at cable outlet uncoated; not for A=3)					3	
Connecting cable	Cable length 2 m						1
	Special cable length: length: _____ m (3...100 m; 1 m-steps)						2
	Hygienic design cable with M12 plug-in connector length 10 m						3
	<b>Description</b>	<b>Article number</b>					
Accessories	Mounting flange, steel, galvanic zinc-plated	301 048					
	Wall-mounting flange, stainless steel, PTFE- clamping ring	520 181					
	Press fitting, stainless steel, G½, atmospheric pressure	532 160					
	Press fitting brass, G½ atmospheric pressure	517 206					
	Welded sleeve, steel, G½, EN 10241, 5 pcs	524 916					
	Welded sleeve, stainless steel, G½, EN10241, 2 pcs	532 160					
	Attachable protective clip for dumbbell head against mechanical influences, stainless steel	531 026					
	Attachable protective 2-wires-clip for protection against mechanical influences, stainless steel, H <sub>2</sub> O <sub>2</sub> resistant	559 124					
	Power supply: output 24 V DC / 1 A; input 115 / 230 V AC	535 282					
	SCHMIDT® LED display MD 10.010 in wall housing to show volume flow and flow velocity, 85...250 V AC and sensor power supply	527 320					
	SCHMIDT® LED display MD 10.010, similar to 527 320 but with 24 V DC voltage supply	528 240					
	SCHMIDT® LED display MD 10.015, similar to 527 320 but with an additional sum function and a second measuring input	527 330					
	SCHMIDT® LED display MD 10.015, similar to 527 330 but with 24 V DC voltage supply	528 250					
	Assembly kit for pipe assembly suitable for MD 10.010 / 10.015, including pipe clamps and collar for adjustment to the pipe diameter	531 394					