Simply a question of
better measurement

SCHMIDT® Technology



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 volumetric flow of extraction units
- Monitoring of 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: ±45°), the sensor can be positioned in the gas flow safely and quickly. In addition to detecting standard flow velocity of 0.06 to 20 m/s, it also measures temperature of the medium. The available linear output signals are 4 … 20 mA and 0 … 10 V in each case – depending on the connected load resistance (function "Auto-U/I").

Protection from dust and aggressive gases

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

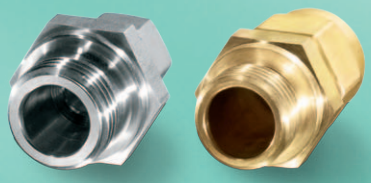
Measuring accuracy in black and white

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



With protective coating (black)

Accessories



Compression fittings



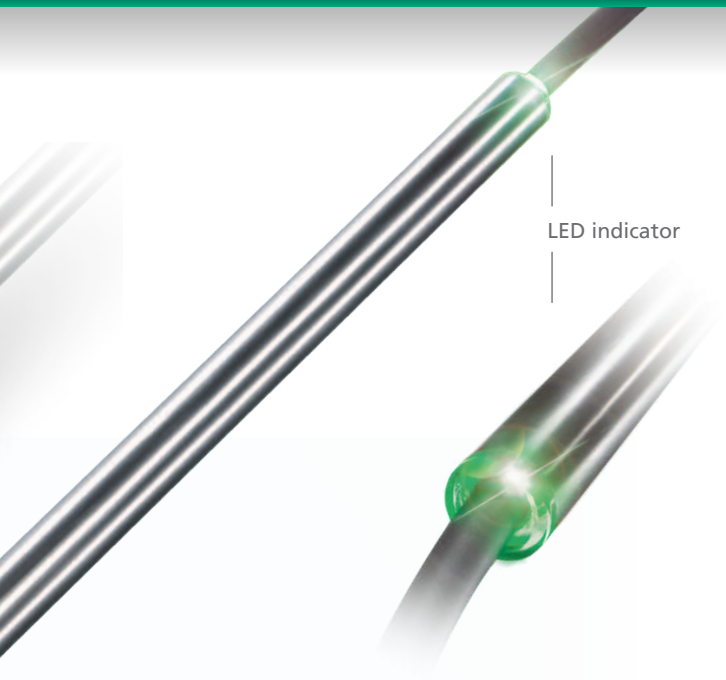
Welding sleeves



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 aero-dynamic 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	standard: 0 ... 1 / 10 / 20 m/s special measuring range [1]: 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 [2]	±(5 % of measured value + [0.4 % of fmr; min. 0.02 m/s])
High precision w_N [2] (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 Ω current output: R_L < 500 Ω hysteresis: 50 Ω
Connection	permanently connected cable, 5-pin, length 2 m or selectable
Admissible cable length [3]	max. 100 m
Installation position	arbitrary
Minimum immersion depth	58 mm (< 58 mm upon request)
Ingress protection / protection class	IP65 / III (SELV or PELV)
Sensor length	300 / 500 mm
Weight	200 g max.

[1] in steps of 1 m/s
[2] under reference conditions, related to the calibration reference fmr = final measuring range
[3] signal output in voltage mode: Use AGND and $R_L \geq 10$ kΩ (mass offset)

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
	Options						
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 (step 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: _____ m (3 ... 100 m; 1 m-steps)						2
	Hygienic design cable with M12 plug-in connector length 10 m						3

	Description	Article number
Accessories	Mounting flange, steel, galvanic zinc-plated	301 048
	Wall-mounting flange, stainless steel, PTFE- clamping ring	520 181
	Compression fitting, stainless steel, G½, atmospheric pressure	532 160
	Compression 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	524 882
	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_2O_2 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

Form 1090/04/2024/250/2 · Art. No. 528829.02 Subject to technical changes

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