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 detect 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 dumbbell head technology include:
· Monitoring and energy-efficient control 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: ± 45°), 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.

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 a special protective coating, which makes it resistant to aggressive media such as hydrochloric acid, acetone, sulfuric acid and many more.
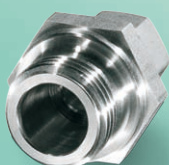
Measuring accuracy in black and white
Optionally, the SCHMIDT® Flow Sensor SS 20.250 can also be delivered with high-precision calibration and ISO calibration certificate, which documents its high precision and reproducibility. You can have this calibration renewed at any time.

With protective coating

Accessories

Compression fitting

Welding sleeves

Mounting flange

LED indicator

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 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 1013.25 hPa temperature of the medium T_M
Medium to be measured	air or nitrogen, other gases upon request
Measuring range of flow w_N	0 ... 1 / 10 / 20 m/s
Lower detection limit w_N	0.06 m/s
Temperature T_M measuring range	-20 ... +70 °C
Measuring accuracy	
Standard w_N	± (5 % of measured value + [0.4 % of final value; min. 0,02 m/s]) [1]
High precision (optional) w_N	± (3 % of measured value + [0.4 % of final value; min. 0,02 m/s]) [1]
Reproducibility w_N	± 1.5 % of measured value
Response time (t_{90}) w_N	3s (jump from 0 to 5 m/s of air)
Temperature gradient w_N	< 2 K/min @ 5 m/s
Measuring accuracy T_M	± 0.4 K (10 ... 30 °C); ± 1 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, anodized aluminum
Connecting cable	PVC halogen-free
General data	
Medium environment	non-condensing (up to 95 % of relative humidity)
Operating pressure	atmospheric (700 ... 1300 hPa)
Display	dual LED green / red
Supply voltage	24 V AC/DC ± 10 %, max. 100 mA
Current consumption	< 60 mA (typical)
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
Admissible cable length	100 m max.
Installation position	any
Minimum immersion depth	58 mm (< 58 mm upon request)
Ingress protection / protection class	IP 65 / III (PELV)
Sensor length	300 / 500 mm
Weight	200 g max.

[1] under reference conditions

Order information SCHMIDT® Flow Sensor SS 20.250

	Description	Article number	X	Y	Z	P	A
Basic sensor	SCHMIDT® Flow Sensor SS 20.250; 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 ranges and calibration	measuring range 0…1 m/s			1			
	measuring range 0…10 m/s			2			
	measuring range 0…20 m/s			3			
	standard calibration				1		
	high-precision flow calibration, including ISO calibration certificate				2		
Protection type	without protective coating					1	
	with protective coating					2	
Connecting cable	cable length 2 m						1
	special cable length: _____ m						2

	Description	Article number
Accessories	mounting flange made of galvanized steel	301 048
	wall mounting flange, stainless steel, PTFE clamping ring	520 181
	compression fitting stainless steel G½, atmospheric pressure	301 082
	compression fitting brass G½, atmospheric pressure	517 206
	welding sleeve steel G½, according to EN 10241, 5 pieces	524 916
	welding sleeve stainless steel 1.4571, G½, according to EN 10241, 2 pieces	524 882
	LED display in wall housing for volumetric flow and flow velocity*	527 320
	LED display in wall housing, similar to 527 320 but with an additional sum function and a second measuring input*	527 330

* available from 4th quarter 2010