Simply a question of
better measurement

SCHMIDT® Technology

SCHMIDT® Flow Switch SS 20.200

Reliable and safe, independent of temperature

- Industrial processes
- Cleanroom/pharmaceuticals
- Ventilation/air-conditioning

SCHMIDT® Flow Switch SS 20.200

Reliable signalization of flow limit values

For many applications the detection of exceeding and shortfall of air/volume flows is a process and quality relevant factor. In order to document exact threshold values, common flow switches, working as “yes/no-indicators”, are insufficient. For demanding applications the SS 20.200 is the ideal solution.

Technical Base: A flow sensor

The SCHMIDT® Flow Switch SS 20.200 is based on the thermal measuring principle. The sensor is of the same high technology like a flow sensor and can be used for over pressures up to 10 bars. The output signal is different however: Instead of an analog signal a switching signal is put out by the Flow Switch. The medium temperature is detected and integrated. Thus the SS 20.200 is temperature compensated. In practise that means flow detection independent of temperature variations.

The dumbbell head technology

With the dumbbell head technology used and the high flow angle (radial: 360°, axial: ±45°), the Flow Switch can be positioned in the gas flow safely and quickly. It can be easily installed by means of a flange or a press fitting. The switching point can be fixed either on site by means of a setting potentiometer or as customized pre-programmed value. When reaching the threshold the switch can be used optionally as closing or opening contact.

Protected from dust and aggressive gases

Due to the patented dumbbell head the Flow Switch can also be used in dusty gases. In case the sensor tip gets dirty it can be cleaned by the user without any problems. On request the flow switch can be delivered with a special protective coating that makes it resistant to aggressive mediums like salt acid, acetone, sulfuric acid and a lot more.

Typical applications of the SCHMIDT® Flow Switch SS 20.200 dumbbell head technology include:

- Monitoring the minimum air flow (ventilator control)
- Ensuring the minimum volume flow in exhaustions
- Avoiding the shortfall of volume flows in compressed air equipments
- Control of supply air in cooling air channels (protection of equipment)
- Compliance with minimum speed in drying processes
- Control of filters

Everything in view

Dual LED’s clearly indicate the sensor is energized and that the operation is "OK". The setting potentiometer is located behind the protective cover.

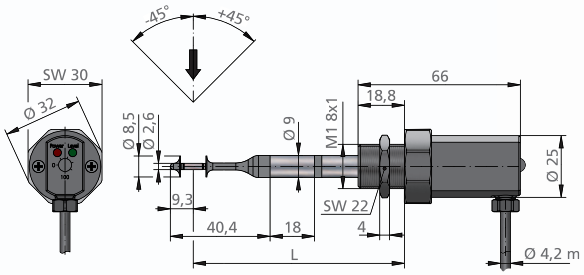
Accessories

Compression fitting for atmospheric pressure
stainless steel Art. No. 532 160 brass Art. No. 517 206

Weelding sleeve
steel Art. No. 524 916
stainless steel Art No. 524 882

Physical dimensions (mm)

Flow angle



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 medium.

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 protective coating is available as an option.

Compression fittig, max 10 bar
brass Art. No. 524 891
stainless steel Art. No. 524 919

Mounting flange
Art. No. 301 048

Technical Data

Measuring data	
Measurement values w_N	standard flow velocity w_N normalized to T_N = 20 °C and p_N = 1013.25 hpa
Measuring fluid	air, nitrogen, other gases on request
Measuring range $w_{N\,max}$	0 ... 1/10/20 m/s
Threshold w_N	0,1 m/s up to the end of measuring range
Accuracy	
Switching hysteresis	± 5 % of threshold; min. 0,1 m/s
Setting threshold	potentiometer (270 °), optionally pre-programmed
Accuracy threshold (pre-programmed)	± (3 % of measuring value + 0,1 m/s)
Repeatability w_N	± (2 % of threshold + 0,1m/s)
Response time t_{90} w_N	3 s (jump from 0 to 5 m/s air)
Switch-on delay	20 s
Temperature gradient w_N	< 2 K/min @ 5 m/s
Operating temperature	
Sensor	-20 °C ... +85 °C
Electronics	-20 °C ... +70 °C
Storage temperature	-20 °C ... +85 °C
Material	
Housing	PBT fibre-glass reinforced
Sensor tube	stainless steel 1.4571
Sensor head	PBT fibre-glass reinforced aluminium, anodized
Protective coating	polyurethane derivative
Connecting cable	PVC
General Data	
Medium environment	non-condensing (up to 95 % rF)
Maximum pressure	0 ... 10 bar
Display	LED green: operating status LED red: switching status
Supply voltage	24 V DC ± 20 %
Current consumption	type < 70 mA
Switching output	semiconductor relais; max. 30 V/100 mA/ 300 mW; R_{ON} max = 25 Ω
Electrical connection	permanently connected cable, 4-pin, length 2 m
Admissible cable length	100 m max.
Mounting position	any
Minimum inmersion	58 mm (< 58 mm on request)
Protection class	housing: IP65/III, sensor head: IP67
MTTF value (per 01.01.2011)	> 50 years
Sensor length	100/200/350/500 mm
Weight	approx. 100 g (L = 350 mm)

Order information SCHMIDT® Flow Switch SS 20.200

	Description	Article number				
Basic sensor	SCHMIDT® Flow Switch SS 20.200; with swichting output, cable length 2 m, **without** protective coating	504 475 -	X	Y	S	N xx
	SCHMIDT® Flow Switch SS 20.200; with swichting output, cable length 2 m, **with** protective coating	505 504 -	X	Y	S	N xx
	Options					
Mechanical type	Sensor length 100 mm		1			
	Sensor length 200 mm		2			
	Sensor length 350 mm		3			
	Sensor length 500 mm		4			
Measuring ranges and calibration	Measuring range 0 ... 1 m / s			1		
	Measuring range 0 ... 2,5 m / s			2		
	Measuring range 0 ... 10 m / s			3		
	Measuring range 0 ... 20 m / s			4		
Signalization Relais/LED	Flow velocity w_N > threshold: relais closes/LED on				1	
	Flow velocity w_N > threshold: relais opens [1]/LED on				2	
	Flow velocity w_N < threshold: relais closes [1]/LED on				3	
	Flow velocity w_N < threshold: relais opens [1]/LED on				4	
Setting threshold	with setting potentiometer, without pre-setting					P 00
	with setting potentiometer, selectable pre-setting of 5 up to 95 % of measuring value					P 05 ... 95
	selectable pre- programming (not changeable) from 5 up to 95 % of measuring range					F 05 ... 95
	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 G ½, atmospheric pressure	532 160				
	Compression fitting brass G ½, atmospheric pressure	517 206				
	Compression fitting stainless steel G ½, max. 10 bar, with protection against pressure losses	524 919				
	Compression fitting brass G ½, max. 10 bar, with protection against pressure losses	524 891				
	Welding sleeve steel G ½, according to EN 10241, 5 pieces	524 916				
	Welding sleeve stainless steel G ½, according to EN 10241, 2 pieces	524 882				

[1] In case of an alarm the configuration "relay opens" is called "fail safe" because a voltage breakdown as well as a cable break can also be signalized as alarm.

SCHMIDT Technology GmbH

Feldbergstrasse 1
78112 St. Georgen / Germany

Phone +49 (0) 77 24 / 89 90
Fax +49 (0) 77 24 / 89 91 01

sensors@schmidttechnology.de
www.schmidttechnology.de

Form No. 1097/11/11/3000/2 · Art. No. 504477.02 · Data subject to change