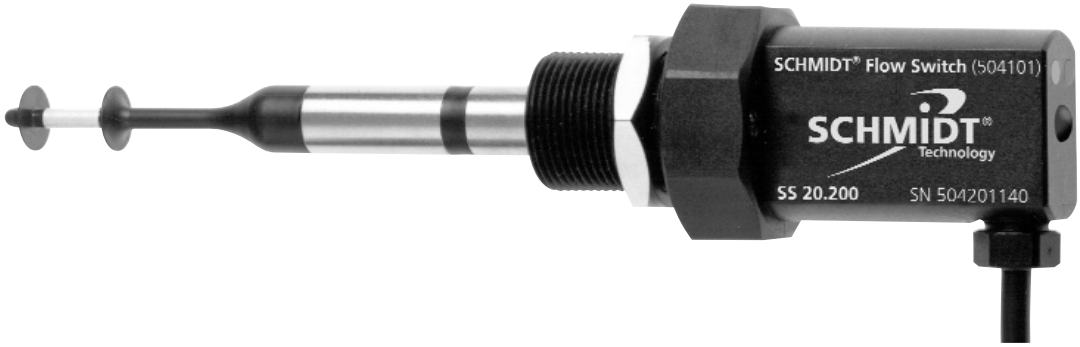
SCHMIDT® Flow Switch
SS 20.200
SS 20.201



Product description

Thermal flow sensor to monitor the flow velocity of air and gases. Patented sensor head, substantially direction-independent and dirt resistant. Adjustable or pre-programmed switching threshold. Optical display of switching and operating state. Increased media resistance through optional protective coating technology (SS 20.201).

Product advantages

- Rotation-invariant measurement, relative to the longitudinal axis of probe
- Compensated flow angle vertically to the longitudinal axis of probe: ± 45°
- Switch threshold adjustment with potentiometer or programmed in factory according to customer's requirements
- Signal of switching state by LED and switching output
- Resistant to dirt
- Suitable for very small flow velocities

Application examples

- Airflow monitoring
- Filter monitoring
- Cooling air monitoring
- Laboratory exhausts
- Workstation exhausts
- Semiconductor processing systems

SS 20.200

Standard sensor for atmospheric applications.
4 different probe lengths offer the possibility to always install the sensor according to the optimal measurement position (= middle of the tube).

SS 20.201

Same as SS 20.200 but pressure-resistant up to 10 bar, with protective coating (2-component polyurethane-resin) for use in air containing aggressive components. Generally, this coating is resistant to organic solvents, acids, caustics and their vapours. The sensor head is corrosion-resistant to the following vapours in air: Hydrochloric acid, sodium hydroxide solution, perchloroethylene, acetone, ethyl acetate, ethyl alcohol, xylene, petrol, motor oil (50 °C), cutting oil (50 °C), cleaning oil, ammonia, acetic acid, sulphuric acid. The suitability has to be checked in each individual case.

Technical Data

Measuring quantity	standard velocity w_N of air relative to standard conditions 20 °C and 1013.25 hPa	
Measuring range $w_{N,max}$	1 / 2.5 / 10 / 20 m/s	
Switching threshold (w_N)	0.1 m/s ... $w_{N, max}$	
Switching hysteresis	5 % of switching threshold; min. 0.1 m/s	
Adjustment switch threshold	potentiometer, single turn (270°) optionally preprogrammed	
Repeatability	± (2 % of switching threshold + 0.1 m/s)	
Response time (t_{90}: 0 → 5 m/s)	3 s	
Switch-on delay	20 s	
Operating temperature	medium: electronics :	-20 … +85 °C -20 … +70 °C
Storage temperature	-20 ... +85 °C	
Humidity range	0 ... 95 % rel. humidity (RH)	
Pressure range	700 ... 1300 hPa 0 ... 10 bar	(SS 20.200) (SS 20.201)
Supply voltage U_B	24 V DC ± 20 %	
Current consumption	70 mA max. (without load at relay)	
Switching output	semiconductor relay (make contact) max. 48 V / 100 mA / 300 mW $R_{ON, max}$ = 25 Ω	
Switching function	according to customer's requirements [1)]	
LED red (switching state)	according to customer's requirements [2)]	
LED green (operating state)	On: Off: Flashes:	sensor ready U_B < 19 V sensor defective
Electrical connection	cable 4 x 0.14 mm², fixed on housing, with insulated ferrules, PVC cable sheath	
Length of connecting cable	2 m (admissible: max. 100 m)	
Protection type	IP65 (housing) IP67 (probe)	
Housing material	PBT glass fibre reinforced	
Sensor head material	PBT glass fibre reinforced stainless steel 1.4571, aluminium	
Sensor tube material	stainless steel 1.4571	
Mounting	external thread M18 x 1 length 20 mm, with lock nut	
Dimensions	housing sensor head probe tube	Ø 32 mm x 66 mm Ø 9 mm x 61 mm Ø 9 mm
Mounting length L	90 / 160 / 360 / 500 mm optionally	
Total weight	approx. 75 g (L = 160 mm)	

Form 1067/04/06/1000/2 · Artikel-Nr. 504477.02 · Technische Änderungen vorbehalten – Data subject to change

Bitte wenden – Turn over

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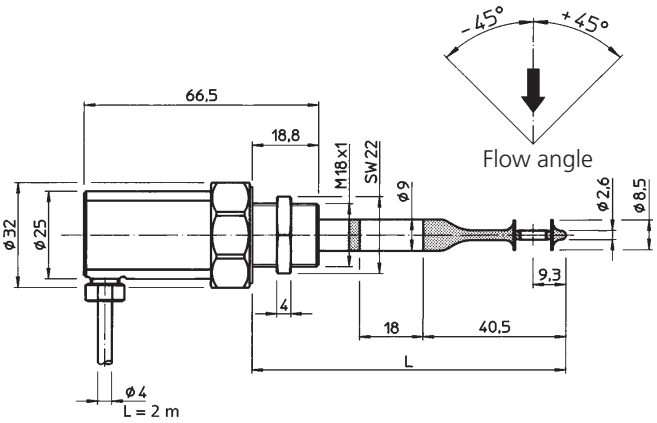
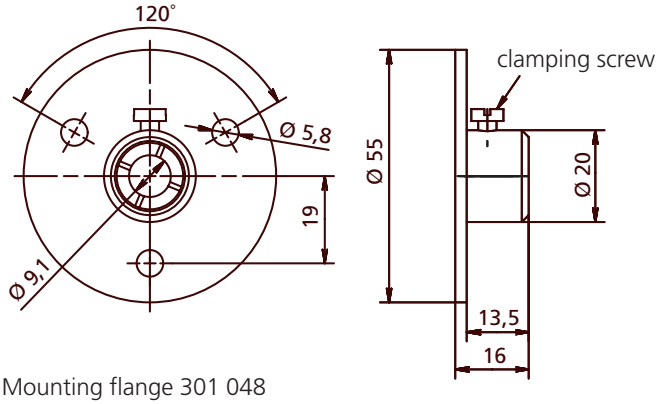
Connection diagram

Dimensional drawing

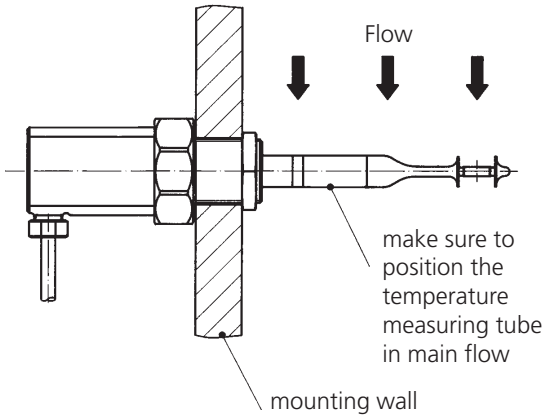


Accessories



Mounting flange 301 048
For sensors from 160 mm in length

Installation instructions



Ordering information

Design [3]	Order no.	X	Mounting length L	Y	Measuring range w_N	S	Signalling Relay LED	L	[%] xx	Adjustment of switching threshold [4]
							for: w_N > L			
SS 20.200		1	90 mm	1	0 ... 1 m/s	1		P	00	potentiometer not configured
Uncoated	504475-XYSLxx	2	160 mm	2	0 ... 2.5 m/s	2			05 .. 95	potentiometer preset [5]
							for: w_N < L			
SS 20.201		3	360 mm	3	0 ... 10 m/s	3		F	05 .. 95	pre-programmed [6]
Coated	505504-XYSLxx	4	500 mm	4	0 ... 20 m/s	4				(cannot be changed)

Explanation:
[1] Alarm in case of falling below or exceeding the switching threshold. Switching output in case of an alarm optionally opened or closed.
[2] LED lights up in case of an alarm.
[3] Both sensors SS 20.200 and SS 20.201 can be ordered in each configuration.
[4] Switching threshold (L = level) is preset in % of the measuring range.
[5] Setting accuracy: ± (5 % of switching threshold + 0.1 m/s)
[6] Setting accuracy: ± (2 % of switching threshold + 0.05 m/s)

Note: The configuration "Output Open" is designated as "fail-safe" in case of an alarm because in this case both a power failure and a defective cable will be signalled as an alarm.