

# SCHMIDT® Flow Sensor

## SS 20.501

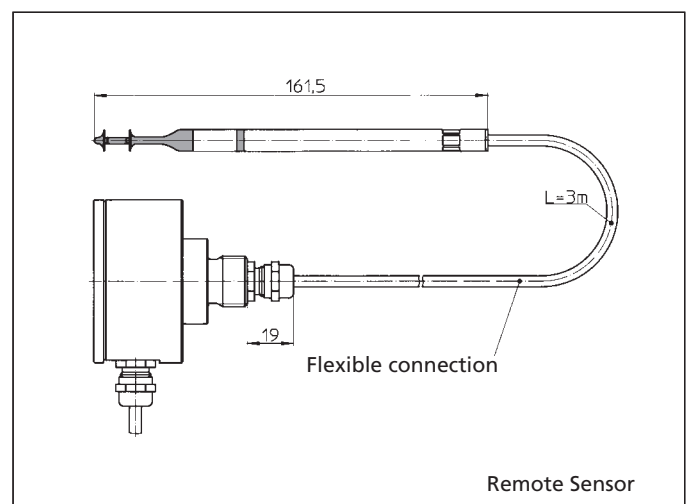
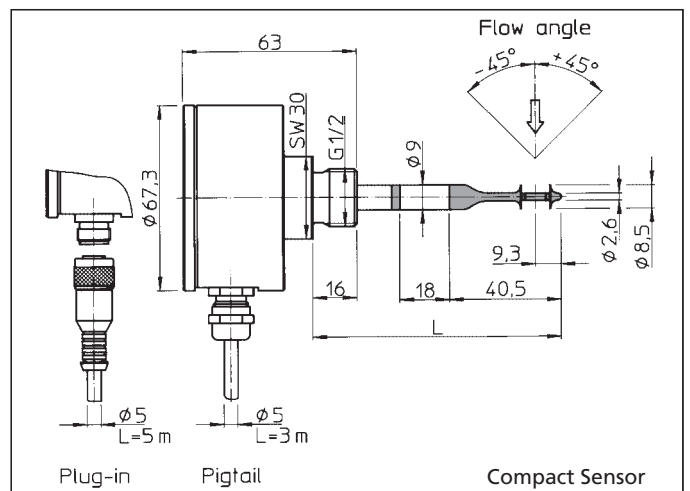
## SS 20.502



Applications	Product description
<ul style="list-style-type: none"> <li>• Air conditioning</li> <li>• Climate control</li> <li>• Bio systems</li> <li>• Process control</li> <li>• Clean-room technology</li> <li>• Pollution measurements</li> <li>• Car industry</li> </ul>	<p>Flow sensor with integrated transducer for flow measurement of air and gases. No moving parts. Optimized sensor head resulting in widely independent direction characteristics. Active temperature compensation for the overall specified temperature range. Analog output signal independent of pressure and temperature.</p>

Examples of use	Measuring method
<ul style="list-style-type: none"> <li>• VAV systems</li> <li>• Ventilator control</li> <li>• Filter monitoring</li> <li>• Exhaust-air control</li> <li>• Laminar flow control</li> <li>• Airspeed measurement outside as well as in wind tunnels</li> <li>• Pneumatic conveyor</li> <li>• Air volume measurements</li> <li>• Pneumatic supply systems</li> </ul>	<p>The principle of the flow measurement is based on the heat transfer (calorimetric) method. A heated thermistor is kept at a constant higher temperature relative to the medium (CTD-mode). The heat dissipation into the medium increases with increasing flow. The heating current thus determines the flow velocity.</p>

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<p>The standard version is pressure proof up to 10 bar and available in different tube lengths (L). Together with the mounting flange suitable for L = 160 mm or longer), a simple mounting and precise sensor position is possible. This is in addition to the normal thread mounting supplied as standard.</p>	<p>component polyurethane resin on polyacrylate/polyurethane basis. This coating is generally resistant against organic solvents, acids and caustic solutions as well as its vapours. The flow sensor SS 20.502 is corrosion-protected against the following vapours in air: hydrochloric acid, sodium hydroxide, perchlorethylene, acetone, ethyl acetate, ethyl alcohol, xylene, gasoline, engine oil (50° C), cutting oil (50° C), cleaning oil, ammonia, acetic acid, sulphuric acid. The suitability has to be tested individually.</p>
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<p>Corrosion and pressure proof version with protective coating for applications in air containing aggressive components. The protective coating consists of a two-</p>	



Technical data overleaf

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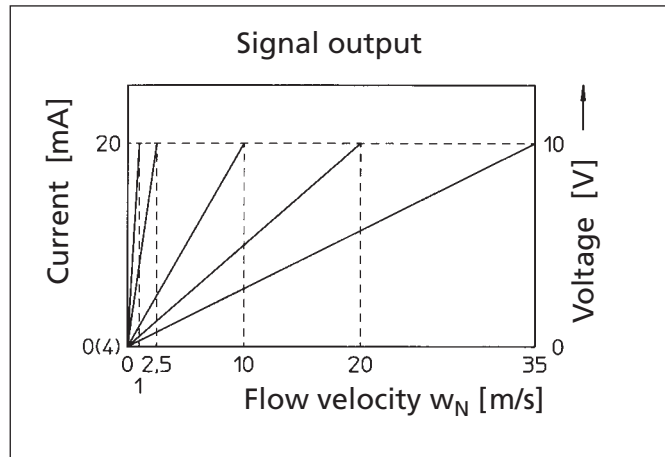
## SS 20.502



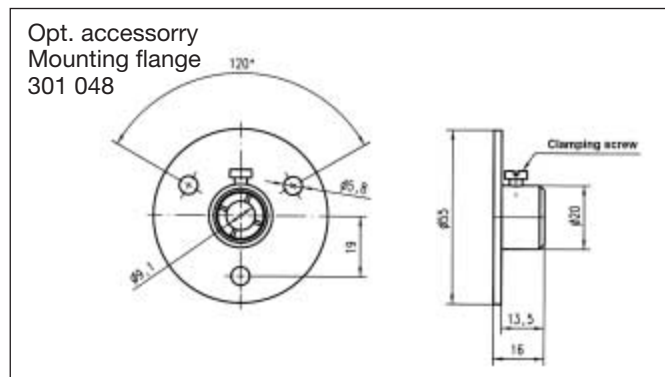
### Technical data

Measuring parameter	Standard flow velocity $w_N$ based on $\vartheta_N = 20\text{ }^{\circ}\text{C}$ , $p_N = 1013.25\text{ hPa}$		
Measuring range ( $w_N$ ) Y	0 ... 35 m/s 0 ... 20 m/s 0 ... 10 m/s 0 ... 2.5 m/s 0 ... 1 m/s	to be selected when ordering	
Operating temperature – sensor head – electronics	-20 ... +85 $^{\circ}\text{C}$ 0 ... +60 $^{\circ}\text{C}$		
Storage temperature	-20 ... +85 $^{\circ}\text{C}$		
Humidity	0 ... 95 % RH		
Operating pressure – Atmospheric – Overpressure	700 ... 1300 hPa 0 ... 10 bar (for compact sensor)		
Repeatability Measurement inaccuracy	$\pm 2\%$ of measurement value $\pm (0,15\text{ m/s} + 6\%$ of measurement value) for measuring ranges 2.5, 10, 20 m/s		
Response time ( $t_{90}$ )	1 s (0 to 5 m/s)		
Temperature dependence	Compensated within operating temperature range		
Pressure dependence	Independent within pressure range		
Flow-angle characteristics	independent in longitudinal axis, compensated within a flow-angle range from -45 $^{\circ}$ ... +45 $^{\circ}$		
Output range Z	0 ... 10 V 0 ... 20 mA 4 ... 20 mA	to be selected when ordering	
Load resistance (perm.)	$\geq 10\text{ k}\Omega$ (voltage output) $\leq 300\text{ }\Omega$ (current output)		
Supply voltage	24 VDC $\pm 20\text{ }\%$		
Current consumption	103 mA max. (without load)		
Starting current	160 mA max. for 2 s		
Mounting	Thread G 1/2 x 16		
Electrical connection A	3-wire cable (3 x 0.56 mm <sup>2</sup> ), with core end sleeves, pigtail or plug-in connection		
Cable length A	3 m (pigtail) or 5 m (plug-in)		
Extension length (perm.)	15 m (voltage output) 100 m (current outputs)		
Dimensions/Material			
– Housing	$\varnothing 67 \times 64\text{ (mm)}$	Aluminium anodized (AlMgSiPb F28)	
– Sensor tip	$\varnothing 9 \times 41\text{ (mm)}$	PBT glass enforced	
– Sensor tube	$\varnothing 9\text{ mm}$	Stainless steel 1.4571 (X 6 CrNiMoTi 17 12 2)	
Mounting length (L) X	90, 160, 360, 500 (mm) tube or 161.5 mm with 3 m flexible connection		
Weight by mass	approx. 200 g (without cable)		
Enclosure class	IP 65		

### Flow characteristics

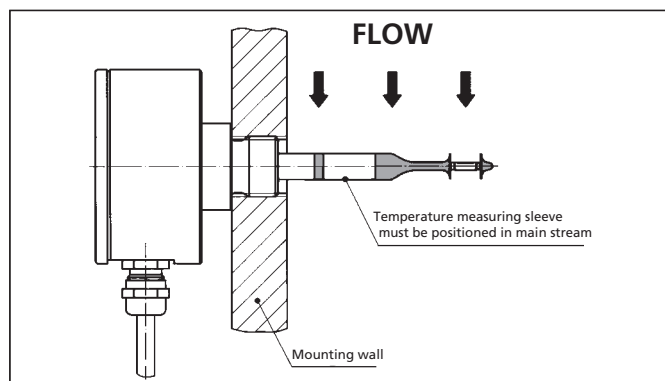


### Mounting flange



Order no. 300227

### Mounting instructions



Type	Order No.	Mounting length		Measuring range	Output	Connection
		X	L (mm)	Y	Z	A
<b>SS 20.501</b> Pressure proof up to 10 bar	300410-XYZA	1	90	1	0 ... 20	1
		2	160	2	0 ... 10	2
<b>SS 20.502</b> Pressure proof up to 10 bar. Measuring tip coated	300428-XYZA	3	360	3	0 ... 2.5	3
		4	500	4	0 ... 35	
		5	3000 (flexible)	5	0 ... 1	