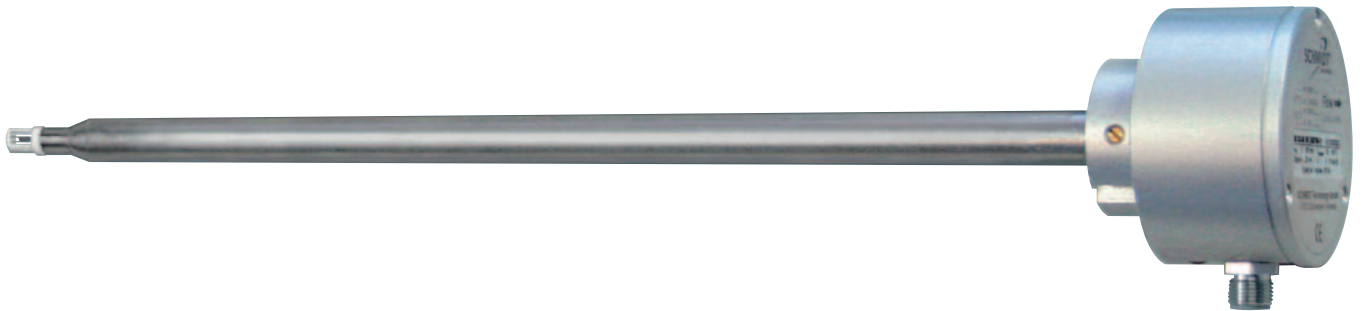


SCHMIDT® Flow Sensor SS 20.60 HT 350 °C



Product description

Flow sensor for measuring velocity and temperature in gases at a medium temperature of up to 350 °C.

The sensing element in the sensor tip is protected against mechanical influence and placed in an aerodynamically optimized chamber. Slight tilting and turning of the tip will therefore effect measuring results only insignificantly.

Additionally to analog outputs for velocity and temperature the sensor contains a digital impulse output which enables direct air or gas consumption measuring, e. g. in connection with the **SCHMIDT® Display unit SS 20.031**.

In addition to that the **SS 20.60 HT-FB** version has a fieldbus interface for PROFIBUS DP or DeviceNet.

Product advantages

- Direct measuring of standard flow velocity without additional pressure- and temperatures sensors
- No moving parts
- Effective temperature compensation over the complete specified temperature range
- High turn down range of 1:100
- High allowable temperature gradient
- Temperature output
- Easy economical mounting
- Digital impulse output for easy installation of consumption measurement or energy saving systems
- 4 LED's for various status displays
- Optional with integrated fieldbus interface

Application examples

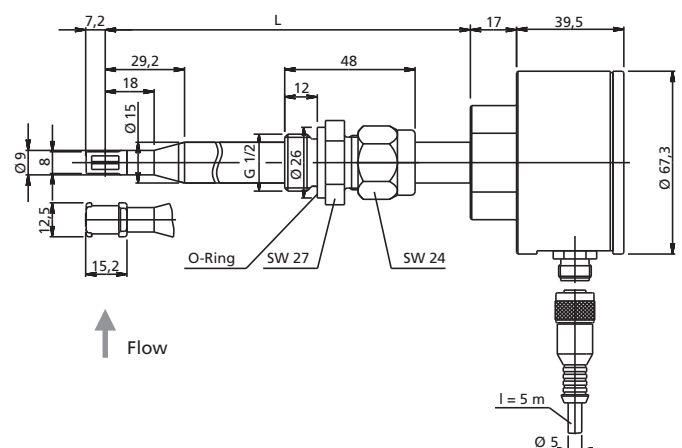
- Measuring of volume or mass flow of burners and combustion engines
- Control of air flow at block heat and power plants and fuel cells

Recommended tube diameter

Probe length	Recommended inner tube diameter (min)	Recommended inner tube diameter (max)
400 mm	80 mm*	600 mm

*) Smaller tube diameters on request

Dimensions



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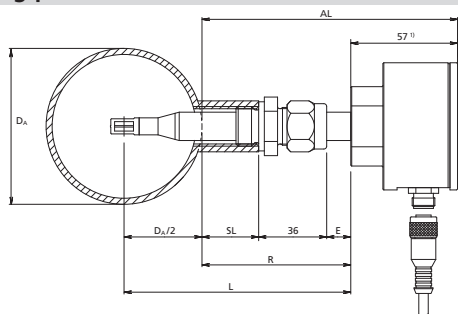


Technical data

Measuring quantity	standard flow velocity w_N normalized to $T_N = 20\text{ °C}$ und $p_N = 1,013.25\text{ hPa}$
Measuring fluid	air, nitrogen, other gases on request
Measuring range w_N	0 ... 10 / 20 m/s
Lower range limit w_N	0.2 m/s
Measuring inaccuracy w_N	$\pm (3\text{ \% of meas. value} + 0.4\text{ \% of meas. range})$
Repeatability w_N	$\pm 0.5\text{ \% of measured value}$
Response time t_{90}	3 s (at 0 to 5 m/s transient)
Temperature gradient	8 K/min @ $w_N = 5\text{ m/s}$
Temperature dependence	compensated within operating temperature range
Pressure dependence	independent of pressure of medium
Recovery time constant	6 s (at $\Delta\vartheta_{\text{Luft}} = 40\text{ K}$ @ $w_N = 5\text{ m/s}$)
Measuring range T_m	0 ... 400 °C (at $w_N > 2\text{ m/s}$)
Measuring inaccuracy T_m	$\pm 2\text{ °C}$
Operating temperature	
- tip	0 ... + 350 °C (max. 400 °C for $t < 10\text{ min}$)
- electronics	-20 ... +70 °C
Operating pressure	700 ... 1300 hPa
Supply voltage U_B	24 V DC $\pm 20\text{ \%}$
Current consumption	100 mA typ. @ $w_N = 20\text{ m/s}$ and $T_m = 350\text{ °C}$
Switch-on current	140 mA for max. 5 s
Stabilization time	approx. 10 s after switch-on
Electrical connection	
- Probe	plug (male), M12, 8-pin
- Connection cable	socket (female), 8 x 0.34 mm ² , length 5 m, stripped core ends tinned

Cable length (standard)	5 m
Line length (admissible)	
- Voltage output	15 m
- Current output	100 m
- Digital output	100 m
Analog outputs	type selectable when ordering
- Function	1 flow, 1 temperature
- Type voltage	0 ... 10 V $R_L \geq 10\text{ k}\Omega$
- Type current	0 / 4 ... 20 mA $R_L \leq 400\text{ }\Omega$
Digital output	pulse output
	high level: $\geq U_B - 1.5\text{ V}$
	low level: $\leq 0.7\text{ V}$
	load current: $\leq 400\text{ mA}$
Frequency digital output	0 ... 10 / 16 / 20 / 40 / 100 Hz
Pulse duration min.	1 / (2 x f_{max})
Material	
- Housing	aluminium AlMgSiPb, anodized
- Probe	stainless steel X6 CrNiMoTi 1.4571
- Probe tip	ceramic
Mounting	press fitting brass, G 1/2 x 12
Mounting tolerance	$\pm 3^\circ$ relative to flow direction
Installation position	as desired
Dimensions	
- Housing standard	67.3 mm x 56.5 mm (\varnothing x H)
- Probe tip	12.5 mm x 8 mm x 15.2 mm (W x H x D)
- Probe tube	15 mm (\varnothing)
Mounting length L	400 mm
Weight	550 g max. (without cable)
Protection class	IP 65

Mounting parameters



D_A = tube outer dimension
 SL = welding stud length
 E = probe tube setting length
 AL = projection length
 R = reference length
 L = probe tube mounting length



To avoid overheating of the sensor electronics E has to be $> 70\text{ mm}$. No isolation in this section is allowed so tube can function as a heat sink.

Accessories

ISO Calibration Certificate	518 427
SS 20.031 calibration certificate	300 838
Power supply 24 V DC, supply 115 / 230 V AC	300 640
Electrical connection cable, 8-pole, length 5 m	511 607
Press fit mounting	515 814
G 1/2 x 12, brass (multiple detachable)	

Scope of delivery:

Standard sensor is delivered with press fit mounting and electrical connection cable.

Fieldbus versions are supplied without cable.

Ordering information

Article number: **511 800 – K Y Z S F**

Description: **SCHMIDT® Flow Sensor SS 20.60 HT**

Type K	Measuring range Y w_N	Analog outputs Z	Digital output S	Frequency digital output F
1 Standard	2 0 .. 10 m/s	1 0 .. 10 V	1 Impuls	2 0 .. 100 Hz
2 DeviceNet with cable bushing	3 0 .. 20 m/s	2 0 .. 20 mA		3 0 .. 40 Hz
3 PROFIBUS with cable bushing		3 4 .. 20 mA ¹⁾		4 0 .. 20 Hz
4 DeviceNet with plug connection				5 0 .. 16 Hz
5 PROFIBUS DP with plug connection				6 0 .. 10 Hz

¹⁾ Option not possible on field bus versions