SD-20.250

Flow Sensor for universal use and high-performance

SENSOR DATA

SD-20.250

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 measure precisely and quickly over an extremely wide range from “almost zero” to the maximum value.

Typical applications of the Flow Sensor SD-20.250 with dumbbel head technology include:

- Monitoring and energy-efficient controling 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 SD-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.

Measuring accuracy in black and white

Optionally, the SD-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.

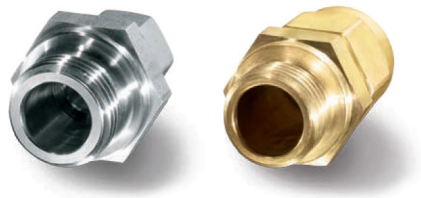
Protection from dust and aggressive gases

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 special two protective coating, which makes it resistant to aggressive media such as hydrochloric acid, acetone, sulfuric acid and many more.

Accuracy in black and white

On request the flow sensor SD-20.250 can be delivered with an ISO calibration certificate which documents the high accuracy und reproducibility of flow measurement on the basis of real measuring values and deviations. Sensor Data carries out the measurement in reference channels. This calibration can be renewed by the user at any time.

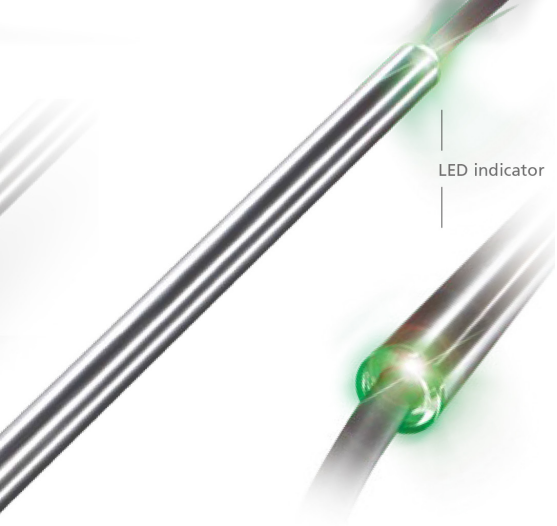
Accessories



Compression fittings

Welding sleeves

Mounting flange



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 (PM, black) or Parylene (transparent) is available as an option.

Accessories

LED display in wall housing

Wall mounting flange

Technical specifications

Measurement specific data	
Measurement values	Standard velocity wN, based on standard conditions of 20 °C and 1,013.25 hPa Temperature of the medium T_M
Medium to be measured	Air or nitrogen, other gases upon request
Measuring range w_N	0 ... 1 / 10 / 20 m/s / selectable
Lower detection limit w_N	0.06 m/s
Measuring range	T_M -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 w_N (optional)	± (3 % of measured value + [0.4 % of final value; min. 0.02 m/s]) 1
Reproducibility	wN ± 1.5 % of measured value
Response time (t90) w_N	3 s (jump from 0 to 5 m/s of air)
Temperature gradient w_N	< 2 K/min at 5 m/s
Measurement accuracy T_M (for w_N > 2 m/s)	± 1 K (10 ... 30 °C); ± 2 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, Stainless steel 1.4571
Protective coating (optional)	Polyurethanderivat, Parylene
Connecting cable	PVC, halogen-free
General data	
Medium environment	Non-condensing (up to 95 % RH)
Operating pressure	Atmospheric (700 ... 1,300 hPa)
Display	Dual LED green / red
Supply voltage	24 V AC/DC ± 10 %
Current consumption	< 60 mA (typical), max. 100 mA
Output signals for temperature and flow Auto U/I	0 ... 10 V / 4 ... 20 mA (short-circuit protected): voltage output: RL > 500 Ω current output: RL < 500 Ω hysteresis: 50 Ω
Connection	Permanently connected cable, 5-pin, length 2 m or selectable
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 (SELV) or PELV
Sensor length	300 / 500 mm
Weight	200 g max.

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