SCHMIDT[®] Flow Sensor SS 20.015 SS 20.016



Applications

Product description

- Air conditioning
- Climate control
- Bio systems
- Process control
- Clean-room technology
- Pollution measurements

Very compact sensor with integrated electronics for measuring the flow velocity of air and gases and for measuring the temperature of the medium simultaneously. Pressure and temperature independent measurement of the normal flow velocity. No moving parts. Aerodynamic dumb-bell head with optimum flow characteristics. Extensively independent of direction and insensitive to contamination.

Measuring method

The flow measurement is based on the heat-transfer

calorimetric method. A heated thermistor is kept at a

constant temperature above the medium level (CTD

into the medium increases

with increasing flow. The

heating voltage is a direct

- Volume flow control
- Ventilator control

Examples

- Office air circulation
- Air inlet and exhaustcontrol
- Filter monitoring
- Laminar flow control
- Airspeed measurement in wind tunnels
- Pneumatic conveyors
- Air volume measurement in burners and combustion engines

SS 20.015

Standard version available in different tube lengths (L). Together with the mounting flange (suitable for L = 160mm or longer) a simple mounting and precise sensor tip positioning is possible.

Pressure-proof version up to 10 bar with protective coating for application in air with aggressive components. The protective coating consists of a two-component polyurethane resin on a polyacrylate/polyurethane base. This synthetic coating is generally resistant against organic solvents, acids and caustic solvents as well as their vapours. The flow sen-

SS 20.016



Calibration certificate

For enhanced measurement accuracy, each sensor type can be supplied with an individual measurement report for the flow velocity output signal according to DIN EN ISO 9001.

Technical Data overleav





SCHMIDT[®] Flow Sensor SS 20.015 SS 20.016

Technical data



Measuring range Flow (W_N) 0 ... 20 m/s - 40 ... + 85 °C Temperature - 20 ... + 50 °C Operating temperature Elektronics - 40 ... + 85 °C Sensor tip Humidity range 0 ... 95 % RH Operating pressure Atmospheric 700 ... 1300 hPa (SS 20.015) 0 ... 10 bar (SS 20.016) Overpressure Measuring sensitivity non linear Flow 60 mV/K related to 4 V at 0 °C Temperature Lower detection limit 0.06 m/s ± 2% Reproducibility Flow Temperature \pm 0.5 K under flow conditions **Relative Measurement** ± (0.12 m/s + 4.5 %) of tolerance measurement value Response time (t₉₀) Flow 1 s (Step from 0 to 5 m/s) typ. - 0.005 % / °C of Temperature-Sensor tip dependence (flow) measured voltage level refer red to a nominal temperature of 20 °C Flectronics 0% at a nominal temperature of 20 °C, max ± 5 % of measured voltage level at 20 °C in the temperature measuring range Not measurable up to ca. 30 °C Humidity dependence max. \pm 5 % of measurement value within humidity range referred to 55 % RH at 80 °C Independent of orientation in Flow-angle characteristics the longitudinal axis, compensated within a flowangle range from - 45 ° to + 45 0...10 V Output voltage Flow 0...10 V, 4 V at 0 °C Temperature Load resistance \geq 10 k Ω (permissible) Supply voltage 24 VDC ± 20 % Current consumption 100 mA max. Hexagonal lock nut on M18 Mounting external thread, length 20 mm Electrical connection 4-wire cable (4 x 0.14 mm^2) pigtail with core end sleeves 5 m Cable length Cable length 15 m (permissible) Housing Glass fibre reinforced PBT Ø 32 x 66 (mm) Dimensions Housing Sensor tip Ø 9 x 41 (mm) Sensor tube Ø 9 mm Mounting length 90, 160, 360, 500 (mm) L Weight by mass ca. 100 g (L = 160 mm)

Flow characteristics



Temperature characteristics



Mounting instructions

