

Simply a question of better measurement

Flow sensors for air and gases



SCHMIDT® Flow Sensors

Solutions for measuring technology in practice

SCHMIDT Technology is a specialist in the development and production of stationary flow sensors for air and gases. With more than 35 years of experience in the fields of compressed air, clean-room/pharma, industrial processes and air-conditioning, we can provide you with perfect solutions for a multitude of measuring tasks.

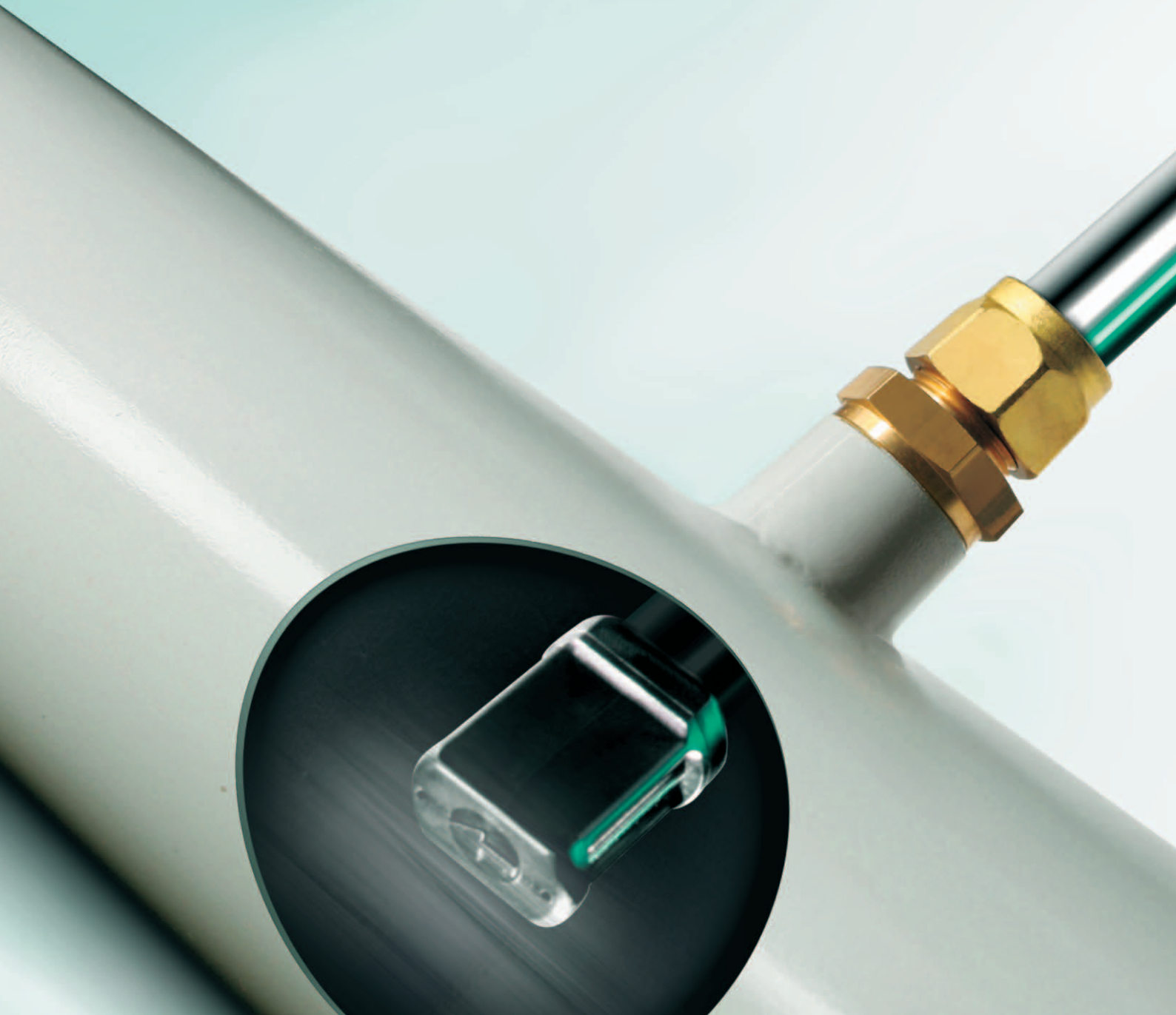
Precise, reliable, safe

Our sensors – Your benefits:

- Energy saving and energy efficiency by simple measurement of actual values
- Precise determination of volume and mass flow consumption data
- Quality assurance of processes
- Control of ventilators and dampers
- Functional monitoring of machines and manufacturing processes

The advantages of SCHMIDT® flow sensors:

- Stable measurement over years without any drift
- No wearing parts and thus no maintenance or follow-up costs
- Extreme measuring ranges – for both low and high flow applications
- Sturdy sensors, including versions for hazardous areas, high pressures and aggressive media
- Modern combined sensors, whereby one sensor can measure several parameters simultaneously
- Easy assembly and quick startup on site





Durability

High quality and sturdy design ensures that our sensors measure every single day and over many years without requiring any maintenance. "Fit and Forget".

Easy handling

Easy handling on-site ensures precise measurement and real "Plug and Play".

Acting locally on a global basis

Our global philosophy is based on competent consultation by regional employees or specialised partners who together work locally with you to find a suitable solution.

Competence and quality are not like stars from heaven

Our efficient and forward thinking research & development department using in house high precision reference wind tunnels leads to innovative products and complete customer satisfaction.

Customised sensors – tailor-made

We also develop and manufacture customised flow sensors specifically for your measurement tasks and measurement environment.

Individual and quick

SCHMIDT Technology provides a suitable sensors within days.

The right sensor for every application

The technology behind SCHMIDT® Flow Sensors

All SCHMIDT® flow sensors operate on the hot wire principle: The passing medium cools the temperature-controlled sensor head. The energy required to maintain the sensor temperature is proportional to the flow velocity of the medium. The benefit of this measurement principle is that it allows direct measurement of the actual volume or mass flow even at overpressure.

The **dumb-bell head sensor** is dust and dirt resistant, the coated versions are also resistant to aggressive media. The wide measuring range and large inflow angles allow for flexible use.

The **chamber head sensor** is best suited for high flow velocities. The design provides excellent protection against mechanical forces and is extremely sturdy – also for use with media at high temperatures.

The **thermopile sensor** was developed specifically for low velocities: extremely quick response times and the extremely small design make this sensor a specialist for clean gases.

Pressure or temperature compensation requiring additional sensor cost in other measurement principles are not required with these sensors.

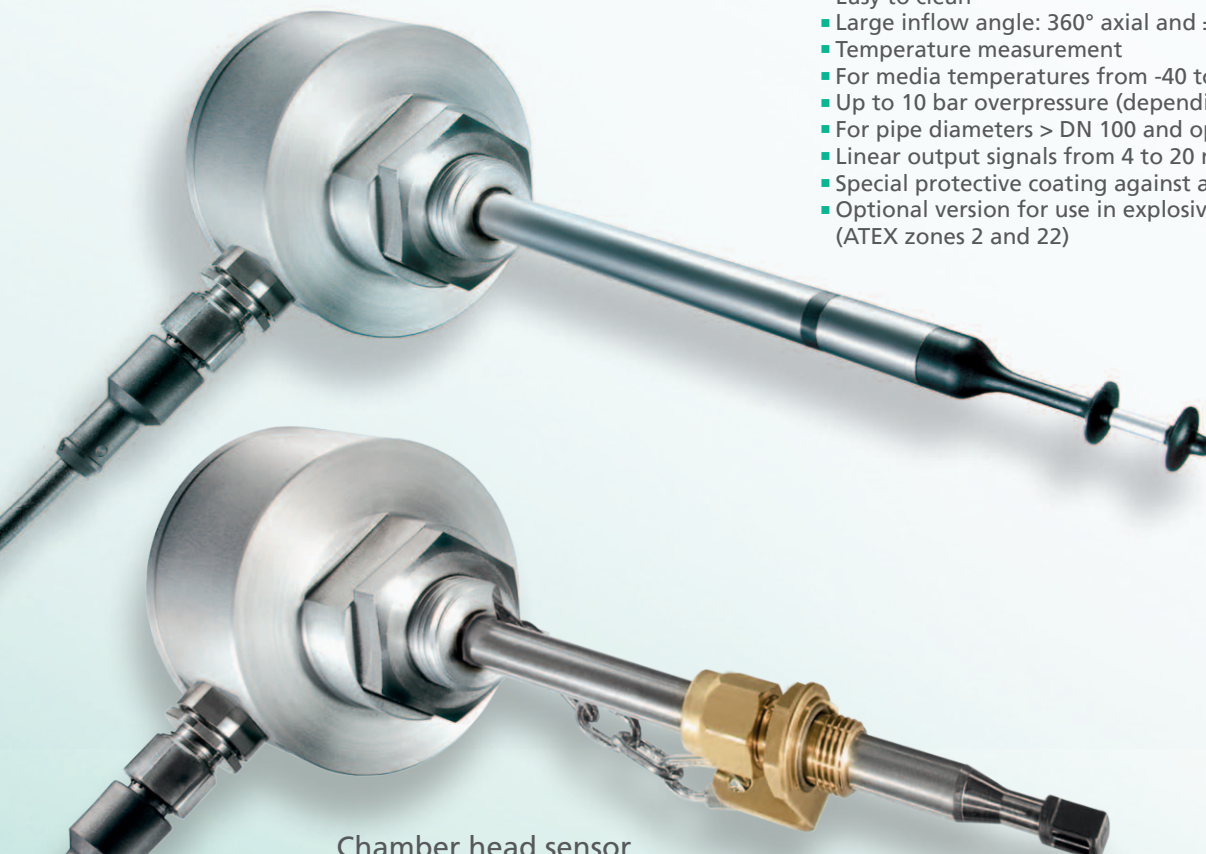
Depending on requirements and the measuring application, **SCHMIDT Technology** offers you a choice of different sensor types designed to specifically meet the relevant applications. Our sensors are divided into five main sensor types and are differentiated by their design:

The **inline head sensor** is characterised by its innovative MPM technology (Multi-Point-Measurement) and its low obstruction of the pipe cross-section. Even the shortest inlet and outlet distances of only 3 x D are sufficient to achieve good measurement results.

The **double-pin sensor** has been designed to meet the needs of so-called "heavy-duty applications" and, thanks to the sensor elements being completely encapsulated in stainless steel, is ideally suited for demanding applications such as the generation of bio-gas and the like and is resistant to aggressive media, too..

Dumb-bell head sensor

- Dust and dirt resistant
- Wide flow measuring range from 0.06 to 50 m/s
- Easy to clean
- Large inflow angle: 360° axial and ± 45° horizontal
- Temperature measurement
- For media temperatures from -40 to +85 °C
- Up to 10 bar overpressure (depending on model)
- For pipe diameters > DN 100 and open space applications
- Linear output signals from 4 to 20 mA or 0 to 10 V
- Special protective coating against aggressive gases (optional)
- Optional version for use in explosive atmospheres (ATEX zones 2 and 22)



Chamber head sensor

- Wide measuring range from 0.2 to 220 m/s
- Temperature measurement (optional)
- For normal air with low dust content
- Sturdy design up to 40 bar overpressure (depending on model)
- For media temperatures between -40 and +350 °C
- Reacts quickly to changes in flow and media temperature
- Cleaning with water or by blowing out
- Ideal for pipe diameters > DN 25
- Linear output signals from 4 to 20 mA or 0 to 10 V
- Special protective coating against aggressive gases (optional)
- Optional version for use in explosive atmospheres (zones 2 and 22)

Detection of overflow

Air intake/ gas ratios

Compressed air distribution

Detection of leakages

Exhaust velocities

Flow velocities

Measurement of air intake and exhaust

Determination of compressed air consumption

Drying air (gas) measurement

Determination of air volumes

Determination of gas volumes

Determination of air volumes and volume flows

Laminar flow measurement

Double pin sensor

- Sensor elements completely encapsulated in stainless steel for heavy-duty applications
- Wide flow measuring range from 0.1 to 220 m/s
- Temperature measurement
- For air and gases in applications with harsh conditions (medium with aggressive components, contamination, high humidity)
- Very robust design and overpressure resistant up to 16 bar
- For medium temperatures from -20 to +120 °C
- Easy cleaning due to encapsulated stainless steel surface
- Ideal for pipe diameters from DN 40
- Linear output signals 4 to 20 mA or 0 to 10 V
- Pulse output
- Optional version for use in explosive atmospheres (zones 2 and 22)

Thermopile sensor

- Ideal for clean gases
- For low velocities between 0.05 to 20 m/s
- Precise determination of flow direction
- Extremely quick response times from 0.01 sec.
- For media temperatures from 0 to +60 °C
- Sturdy all-metal housing
- Extremely small design of only 9 mm diameter allows easy installation
- Linear output signals from 4 to 20 mA or 0 to 10 V
- Optional bidirectional flow measurement
- Optional version for use in explosive atmospheres (zone 2)

Inline sensor with Multi-Point-Measurement (MPM)

- Integrated measuring section allows for easy installation
- Direct measurement of norm flow volumes from 0.15 to 712 Norm-m³/h
- Suitable for media temperatures from -20 to +60 °C
- Up to 16 bar overpressure
- Marginal obstruction of pipe cross section
- Temperature measurement
- For pipe diameters from DN 15 to DN 50
- Linear output signals from 4 to 20 mA
- **SCHMIDT**® MPM technology from 1" upwards
- Highest measuring accuracy, even in poor flow profiles and in combination with flow obstacles
- Shortest inlet and outlet distances (3 x D each is sufficient)
- Modularly expandable:
 - Wireless data transmission with **SCHMIDT**® **Bluetooth**® module BT 10.010
 - Sensor parameterisation via **Bluetooth**® module BT 10.010 or cable programming kit (PC)
 - Free **SCHMIDT**® Sensor App
 - **SCHMIDT**® measured value display module MD 10.020





Compressed air technology

Air measurement controls energy costs

Regardless of large or small compressed air units – be on the safe side with **SCHMIDT Technology** flow sensors. They are ideal for continuous consumption measurement, for any compressor controls required and to precisely detect any leakage during non-operation. Using **SCHMIDT** flow sensors you will always be "in control" of compressed air costs.

SCHMIDT® LED
measured value display
MD 10.010 / 10.015



Sensor App



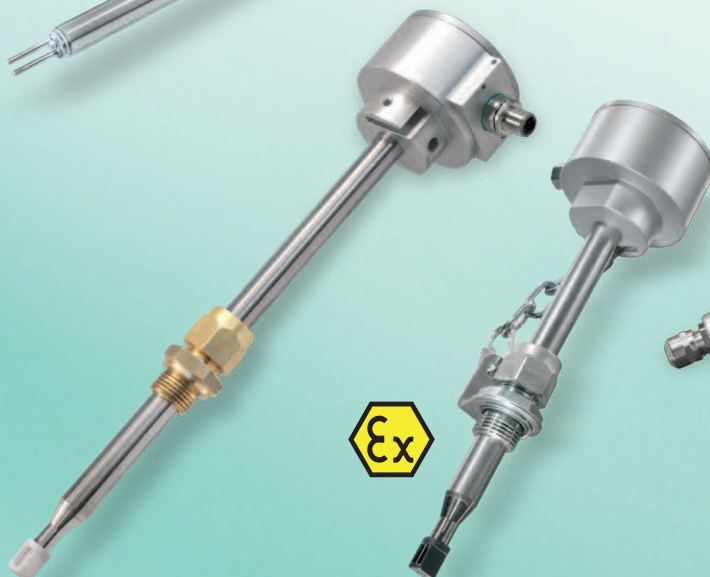
BT 10.010



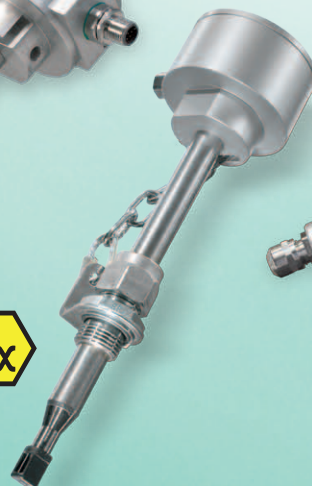
SS 20.700



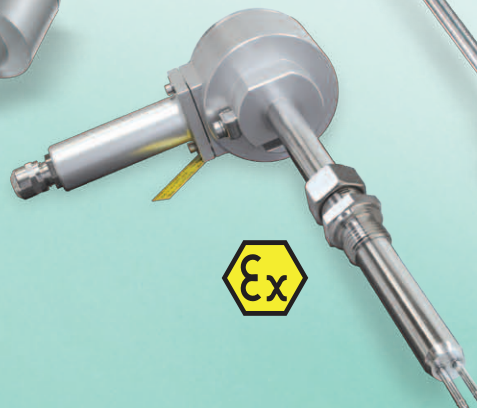
IL 30.0xx MPM



SS 20.651



SS 20.600



SS 23.700 Ex

SS 20.261



SCHMIDT® Flow Sensors

SS 20.651 Chamber head sensor

- For monitoring drying processes and air compressors
- Measuring range: air velocities from 0.2 to 60 m/s; temperatures up to +350 °C; up to 16 bar overpressure
- Very precise due to high precision adjustment with calibration certificate (optional)
- Installation length: standard up to 1000 mm
- Robust construction with full-metal design
- Additional impulse output for easy determination of total volumes via a (consumption) counter
- Easy installation and replacement via through-bolt joint
- Also available as fieldbus version (PROFIBUS/DeviceNet)

SS 20.600 / SS 20.600 Ex Chamber head sensor

- Measuring range: air velocities from 0.2 to 220 m/s; up to 40 bar overpressure
- Robust construction with full-metal design
- Pipe diameters: DN 25 to DN 2000; also available with special sensor length up to 1000 mm or as remote version (electronics housing splittet from sensor tube, connected by cable with a length between 1 m and 10 m)
- Additional impulse output for easy determination of total volumes via a (consumption) counter
- Easy installation and replacement via ball valve and through-bolt joint
- Also available as fieldbus version (PROFIBUS/DeviceNet)
- Optional version for hazardous environments ((ATEX category 3, zones 2 and 22; oxygen > 21 %; grease-free))
- Very precise due to high precision adjustment with factory calibration certificate (optional)



SS 20.700 Double pin sensor

- Sensor elements completely encapsulated in stainless steel for „heavy-duty“ applications
- Measuring range: normal velocities from 0.1 to 220 m/s, temperatures from -20 to +120 °C
- Installation length: 250 or 600 mm, remote sensor (optional)
- Factory calibration certificate (optional)
- Ideal for pipe diameters from DN 40
- Linear output signals 4 to 20 mA or 0 to 10 V
- Additional pulse output
- For air and gases in applications with harsh conditions (medium with aggressive components, contamination, high humidity, e.g. bio-gas)
- Very robust design and overpressure resistant up to 16 bar
- Easy cleaning due to encapsulated stainless steel surface
- Explosion protection / ATEX: SS 23.700 Ex (zones 2 and 22)

SCHMIDT® Bluetooth® Module BT 10.010

- Radio module featuring Bluetooth® wireless technology for modular functional expansion of the SCHMIDT® Mass Flow Sensor IL 30.0xx MPM
- Remote transmission of measured values
- Free-of-charge SCHMIDT® Sensor App
- Display and real-time recording of measuring values
- Processing of recorded data
- Plug-and-Play



IL 30.0xx MPM InLine Mass Flow Sensor

- Integrated measuring section
- Measuring range: volume flows up to 712 m³/h
- Analog and pulse output
- Easy installation (plug-and-play)
- Pipe diameters: DN 15 to DN 50
- Up to 16 bar over pressure

SS 20.261 Chamber head sensor

- Cost-effective flow sensor (immersion type)
- Measuring range: air velocities up to 90 m/s
- Temperatures up to +85 °C; up to 10 bar overpressure
- Pipe diameters: DN 25 to DN 600
- Easy installation with through-bolt joint (content of delivery)
- Very precise due to high precision adjustment with factory calibration certificate (optional)

MD 10.010/015 LED measured value display

- Display of flow velocity or flow volume
- Easy installation through sturdy wall housing (IP 65)
- Electrical supply via mains (i.e. 230 V) or 24 V DC
- Electrical supply of connected sensor
- Model with accumulator function and dual measuring signal input
- Automatic switching of current or voltage outputs depending on load
- Output signals freely scalable and 2 relay outputs (230 V, 2 A) with alarm function
- Can also be used for other sensors with standard outputs (i.e. pressure, temperature, humidity)
- Detection of flow direction (patented)

SCHMIDT® Measuring value module MD 10.020

- 2-line display module for modular functional expansion of the SCHMIDT® Mass Flow Sensor IL 30.0xx MPM
- Direct display of standard volume flow (VN) and medium temperature (TM)
- Remote display for optimal readability
- No extra power supply necessary (powered by the flow sensor)
- Plug-and-Play



Industrial processes

Whatever the application, there is a suitable sensor

The field of industrial processes is extremely varied. **SCHMIDT Technology** offers suitable flow sensors for widely differing segments, such as chemicals, food & beverage, environmental technology, construction materials, semi-conductor production, paper/printing/textiles as well as plant and equipment engineering.

Flow sensors are used for functional monitoring, equipment control and quality assurance. **SCHMIDT® flow sensors** not only measure air precisely and quickly, but also numerous gases and gaseous mixtures.

SCHMIDT® LED
measured value display
MD 10.010 / 10.015



BT 10.010

SS 20.420



HVAC 100



SS 20.651



SS 20.600

SS 20.500

SS 20.200

SS 20.260

SS 20.261



IL 30.0xx MPM

SS 20.700



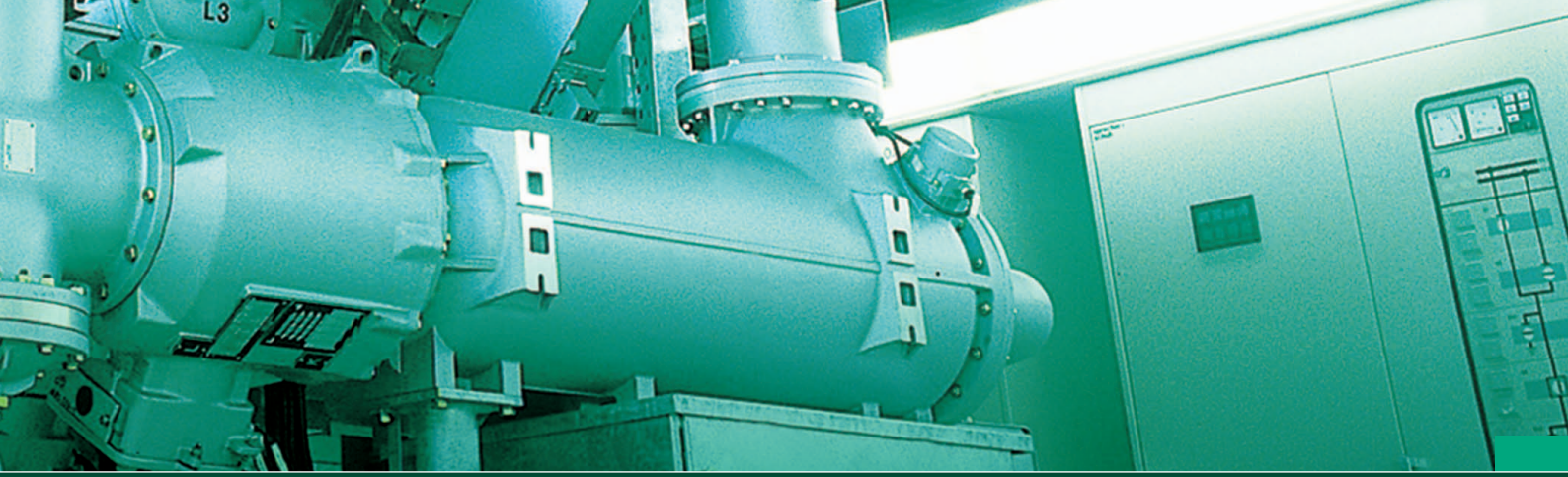
BT 10.010

SS 20.700

IL 30.0xx MPM

SS 20.700

SS 20.261



SCHMIDT® Flow Sensors

SS 20.651 Chamber head sensor

- For monitoring drying processes and air compressors
- Measuring range: air velocities from 0.2 to 60 m/s; temperatures up to +350 °C; up to 16 bar overpressure
- Very precise due to high precision adjustment with calibration certificate (optional)
- Installation length: standard up to 1000 mm
- Robust construction with full-metal design
- Additional impulse output for easy determination of total volumes via a (consumption) counter
- Easy installation and replacement via through-bolt joint
- Also available as fieldbus version (PROFIBUS/DeviceNet)

SS 20.600 / SS 20.600 Ex Chamber head sensor

- Measuring range: air velocities from 0.2 to 220 m/s; up to 40 bar overpressure
- Robust construction with full-metal design
- Pipe diameters: DN 25 to DN 2000; also available with special sensor length up to 1000 mm or as remote version (electronics housing splitted from sensor tube, connected by cable with a length between 1 m and 10 m)
- Additional impulse and relays output
- Easy installation and replacement
- Also available as ATEX version (category 3, zones 2 and 22)
- Easy to clean (blowing out or cleaning with water)
- Also available as fieldbus version (PROFIBUS/DeviceNet)
- Impulse output



SS 20.500 / SS 20.500 Ex Dumb-bell head sensor

- Measuring range: air velocities from 0.06 to 50 m/s
- Very precise due to high precision adjustment with factory calibration certificate (optional)
- Sturdy full-metal housing
- Also available as ATEX version (category 3, zones 2 and 22)
- Also available as remote version (sensor tube and electronics housing separated)
- Special coating against aggressive gases (optional)
- Easy installation with through-bolt joint or mounting flange



SS 20.200 Dumb-bell head flow switch

- Monitoring flow with switching output
- Switching range: flow velocities up to 20 m/s
- LED display if value exceeds or drops below switching point
- Switching point can be set with integrated potentiometer
- Temperature compensation prevents any influence on switching point in case of temperature changes
- Special protective coating against aggressive gases (optional)

SS 20.260 Chamber head sensor

- Flow and temperature measurement under atmospheric pressure
- Measuring range: flow velocities up to 60 m/s; temperatures up to +120 °C
- Easy installation due to compact design
- Installation lengths: 50 to 500 mm
- Very precise due to high precision adjustment with factory calibration certificate (optional)
- Integrated temperature measurement (optional)

SS 20.261 Chamber head sensor

- Cost-effective flow sensor (immersion type) up to 10 bar overpressure of media
- Measuring range: air velocities up to 90 m/s
- Temperatures up to +85 °C
- Pipe diameters: DN 25 to DN 600
- Easy installation with through-bolt joint (content of delivery)
- Very precise due to high precision adjustment with factory calibration certificate (optional)

SS 20.700 Double pin sensor

- Sensor elements completely encapsulated in stainless steel for „heavy-duty“ applications
- Measuring range: normal velocities from 0.1 to 220 m/s, temperatures from -20 to +120 °C
- Installation length: 250 or 600 mm, remote sensor (optional)
- Factory calibration certificate (optional)
- Ideal for pipe diameters from DN 40
- Linear output signals 4 to 20 mA or 0 to 10 V
- Additional pulse output
- For air and gases in applications with harsh conditions (medium with aggressive components, contamination, high humidity, e.g. bio-gas)
- Very robust design and overpressure resistant up to 16 bar
- Easy cleaning due to encapsulated stainless steel surface
- Explosion protection / ATEX: SS 23.700 Ex (zones 2 and 22)

SCHMIDT® Measuring value module MD 10.020

- 2-line display module for modular functional expansion of the SCHMIDT® Mass Flow Sensor IL 30.0xx MPM
- Direct display of standard volume flow (VN) and medium temperature (TM)
- Remote display for optimal readability
- No extra power supply necessary (powered by the flow sensor)
- Plug-and-Play

Applications	SS 20.651	SS 20.600	SS 20.500	SS 20.200	SS 20.260	SS 20.261	SS 20.420	HVAC 100	SS 20.700	SS 23.700 Ex	IL 30.0xx MPM
Meas. of air intake and exhaust	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Filter monitoring	✓		✓	✓	✓		✓	✓			
Determination of air volumes		✓	✓		✓	✓	✓	✓	✓	✓	✓
Drying air (gas) measurement	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Exhaust velocities			✓	✓	✓	✓	✓	✓			
Flow velocities	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Determination of gas volumes		✓	✓			✓			✓	✓	✓
Air intake / gas ratios	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
ATEX		zones 2 & 22	zones 2 & 22							zones 2 and 22	



Cleanroom and pharma

Better safe than sorry

SCHMIDT® flow sensors are also of interest to both users and manufacturers of cleanrooms and pharmaceutical equipment.

Our flow sensors will reliably register the predefined air flow required by different standards as well as provide energy-efficient measurement of overflow from cleanroom to cleanroom..

Our high quality standard is especially relevant for quality assurance. Of course, every sensor can be supplied with an ISO factory calibration certificate to document its precision in black and white.

SCHMIDT® LED
measured value display
MD 10.010 / 10.015



SS 20.420



SS 20.715



SS 20.250 HD



SS 20.250

SS 20.415



SS 20.515



SS 20.200



SS 23.400



SS 20.400



SS 20.415 Twin

SS 20.450
Verification
Probe

SS 20.415 Twin



HVAC – Heating, Ventilation and Air-Conditioning

Energy efficiency for a secure future

In this field, the topics energy efficiency, CO₂ reduction and saving on operational costs play an especially important role and is largely dependent on the reliability of measured values. Considering the trend towards volume reduction in air conditioning and ventilation units, you can cover the entire measuring spectrum from “virtually zero” to extremely high flow velocities with a **SCHMIDT® flow sensor**.

Flow sensors by **SCHMIDT Technology** can help you in achieving maximum energy efficiency, monitoring and controlling measured values and in providing optimum operation on a continuous basis. The quick and easy installation of the sensors at the duct is also extremely helpful: drill the hole, fit the sensor using a mounting flange, wire the electric – ready for operation.

SCHMIDT® LED
measured value display
MD 10.010 / 10.015



HVAC 100



SS 20.250



SS 20.500



SS 20.200

SS 20.260



SCHMIDT® Flow Sensors

SS 20.250 Dumb-bell head sensor

- Cost-effective flow sensor (immersion type)
- Integrated temperature measurement
- Measuring range: flow velocities from 0.06 to 20 m/s
- Very precise due to high precision adjustment with factory calibration certificate (optional)
- Special protective coating against aggressive gases (optional)
- Easy installation due to compact tube design with through-bolt joint or mounting flange
- Voltage supply: 24 V AC or DC
- Automatic switching of output signal depending on load
- Installation lengths: 300 and 500 mm

SS 20.500 / SS 20.500 Ex Dumb-bell head sensor

- Integrated temperature measurement
- Measuring range: air flow from 0.06 to 50 m/s
- Very precise due to high precision adjustment with factory calibration certificate (optional)
- Sturdy full-metal housing
- Also available as ATEX version (category 3, zones 2 and 22)
- Also available as remote version (sensor tube and electronics housing separated)
- Special protective coating against aggressive gases (optional)
- Automatic switching of output signal depending on load
- Easy installation with through-bolt joint or mounting flange
- Voltage supply: 24 V AC or DC
- Installation lengths: available up to 1000 mm



SS 20.200 Dumb-bell head flow switch

- Monitoring flow with switching output
- Switching range: flow velocities up to 20 m/s
- LED display if value exceeds or drops below switching point
- Switching point can be set with integrated potentiometer
- Quick response time: less than 3 sec.
- Temperature compensation prevents any influence on switching point in case of temperature changes
- Special protective coating against aggressive gases (optional)

SS 20.260 Chamber head sensor

- Integrated temperature measurement (optional)
- Measuring range: flow velocities up to 60 m/s
- Temperatures from -20 °C to + 120 °C
- Easy installation due to compact design
- Installation lengths: 50 to 500 mm
- Very precise due to high precision adjustment with factory calibration certificate (optional)

HVAC 100

- Low-cost immersion type sensor for monitoring and individual control of building ventilation and exhaust air systems and for filter monitoring
- Measuring range: flow velocity from 0.2 to 20 m/s and temperatures up to +60 °C
- Pipe diameter: from DN 60, sensor can be extended for infinitely variable immersion depth
- Easy installation due to supplied mounting bracket (suitable for both wall and pipe mounting)
- Easy to clean (anti-dust design)
- Omni-directional measurement (no alignment with air flow required)

Anwendungen

	SS 20.250	SS 20.500	HVAC 100	SS 20.200	SS 20.260
Meas. of air intake and exhaust	✓	✓	✓	✓	✓
Filter monitoring	✓	✓	✓	✓	✓
Determination of air volumes and volume flows	✓	✓	✓		✓
Control of ventilators	✓	✓	✓		✓
ATEX		zones 2 and 22			



Competence from Research to Service

Research and Development

The employees of SCHMIDT Technology distinguished by their competence and knowledge in physics and technology. Our large research and development department continuously works on creating cutting edge product innovations.

Consulting

Our competent application consultants are pleased to help you find the optimum technical and economical solution for your measuring requirements.

Aftersales Service

In the event of sensor failure, we offer a fast and reliable repair service within a few working days!

Factory calibration and accredited calibration (DAkkS accredited calibration) ①

We offer our flow sensors with a factory calibration as standard and leave it up to you to decide whether you want to have confirmation of compliance with the specifications solely by means of a factory certificate 2.1 in accordance with DIN EN 10204 or whether a factory calibration certificate should be issued. Factory calibrations are often also known as ISO calibrations.

When configuring the flow sensor, you define the required adjustment accuracy. Here you can choose between the two options standard precision adjustment and high-precision adjustment. With standard precision adjustment, a factory calibration certificate can be issued optionally at an extra charge. For high-precision adjustment, a factory calibration certificate is always included.

The applied standards for our SCHMIDT® factory calibrations are firmly anchored in our quality management system. The factory calibrations are also carried out following DIN EN ISO/IEC 17025.

In addition, we offer you the possibility of having our flow sensors calibrated in our calibration laboratory accredited ① according to DIN EN ISO / IEC 17025. This calibration is confirmed by a corresponding accredited calibration certificate (DAkkS accredited calibration) ①.

Due to the accreditation of our laboratory, we are in constant and close exchange with other accredited laboratories within the framework of the DKD technical committee and work together on the further development of calibration methods and the reduction of measurement uncertainties.



① Accredited services correspond to the scope of accreditation listed in Document Annex D-K-21939-01-00. All other services do not include an accredited report and are consequently not covered by the EA MLA



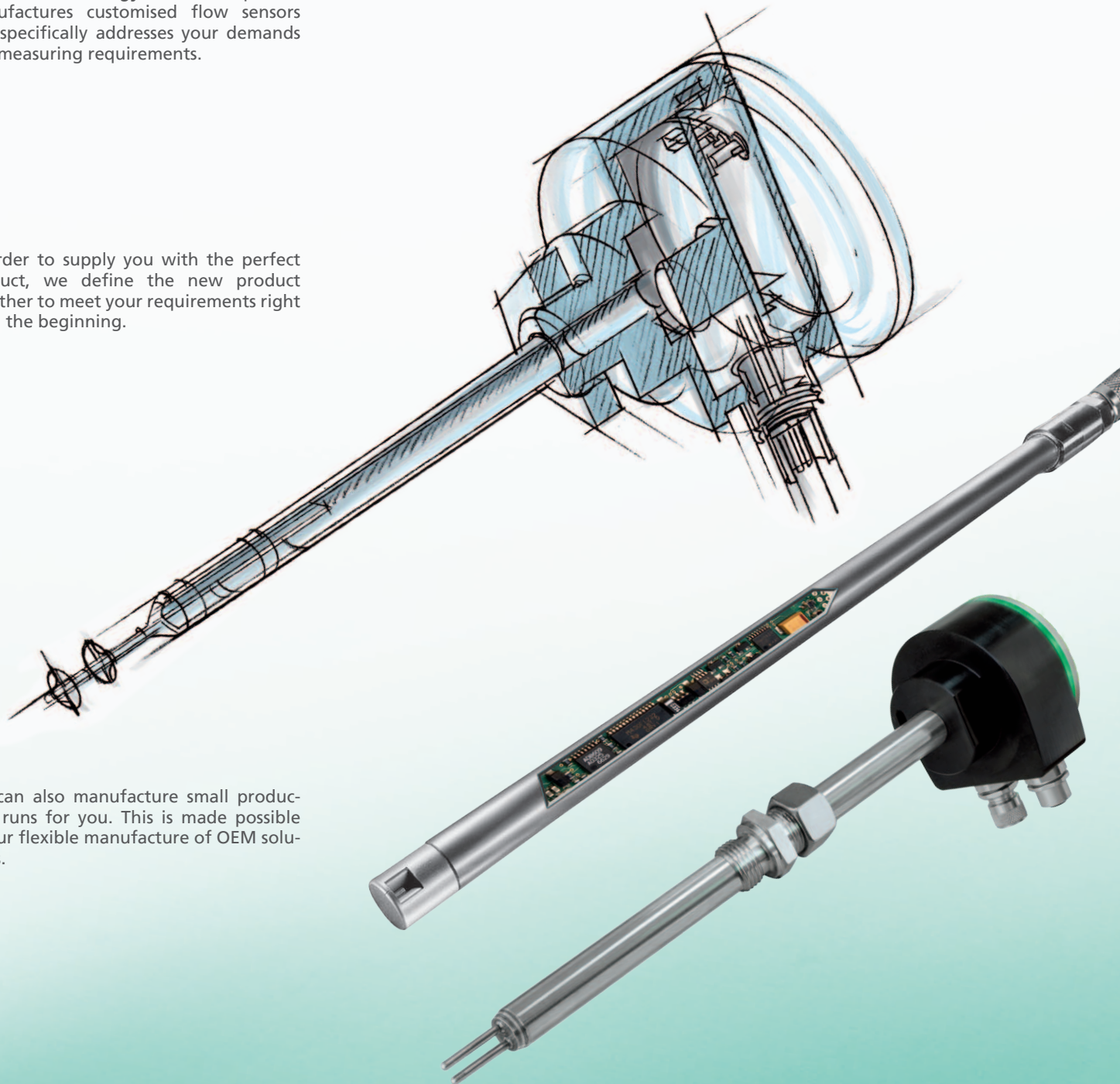
You require more flexibility?

Customised OEM solutions from SCHMIDT Technology

SCHMIDT Technology also develops and manufactures customised flow sensors and specifically addresses your demands and measuring requirements.

In order to supply you with the perfect product, we define the new product together to meet your requirements right from the beginning.

We can also manufacture small production runs for you. This is made possible by our flexible manufacture of OEM solutions.



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Near you – worldwide.

Consultation and support on site are a matter of principle at **SCHMIDT Technology** – both prior to and after sales. We are represented by agencies in numerous industrial markets worldwide. Our well trained local employees or specialised partners will give you optimum support in the selection and practical use of **SCHMIDT® flow sensors**.

Our website offers you further information, data sheets, documentation as well as national and international contact data.

A visit certainly pays off:
www.schmidttechnology.de