

SFM3000 Mass Flow Meter for Medical Applications

- Bidirectional Flow Measurement (± 200 slm)
- Low Pressure Drop (< 150 Pa)
- Excellent Accuracy (2% m.v.)
- Ultra Fast Measurement Speed (0.5 msec)
- Medical-Grade Design



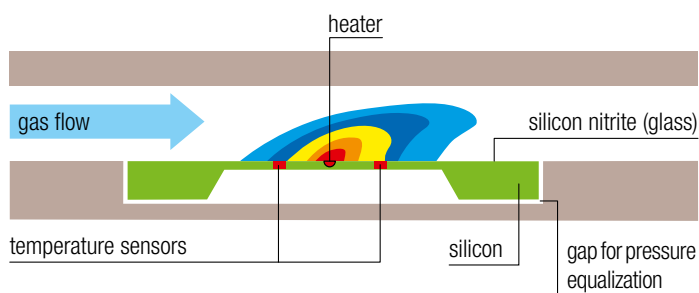
Designed for demanding medical applications!



The SFM3000 is a digital flow meter especially suitable for high-volume applications. The design of the flow channel results in very low pressure drop through the sensor element, making it highly suitable for medical ventilation and respiration applications. The SFM3000 bidirectionally measures the flow of air and other non-aggressive gases at rates up to 200 slm with excellent accuracy and extremely high speed. It outputs a 14-bit digital signal at a 2 kHz update rate. The signal is internally linearized and temperature compensated. Furthermore, the SFM3000 flow meter operates at a 5 Vdc supply voltage and features a digital 2-wire interface, making it easy to connect directly to a microcontroller.

High-Performance Measurement Principle

The outstanding performance of the SFM3000 sensor is based on Sensirion's patented CMOSens[®] Technology, which combines the sensor element, signal processing and digital calibration on an integrated MEMS microchip. The gas is measured by a thermal sensor element to provide an extended dynamic range and enhanced long-term stability compared to other flow measuring technologies. Thanks to this proven CMOSens[®] Technology, the flow meter is perfectly suited for high-quality mass production and is the ideal choice for demanding and cost-sensitive OEM applications.



Thermal measurement principle for CMOSens[®] flow sensors

Specifications

| | Condition | Value | Unit |
|------------------------------|--------------------|---------------------------|-------------------------------------|
| Flow Ranges | Air/N ₂ | -200 ... +200 | slm |
| Processing Time | 14 bit | 0.5 | ms |
| Accuracy (typ.) ¹ | span | ± 2 | % m.v. |
| | offset | ± 0.05 | slm |
| Repeatability (typ.) | span | ± 0.75 | % m.v. |
| | offset | ± 0.05 | slm |
| Pressure Drop @60slm | inlet mesh | < 100 / < 0.4 | Pa/"H ₂ O |
| | no inlet mesh | < 20 / < 0.08 | Pa/"H ₂ O |
| Pressure Drop @200slm | inlet mesh | < 600 / < 2.4 | Pa/"H ₂ O |
| | no inlet mesh | < 150 / < 0.6 | Pa/"H ₂ O |
| Supply Voltage | - | 5 | Vdc |
| Operating Pressure | absolute | 0.7 ... 1.3 | bar |
| Fitting | - | 22 mm | Conical connector (ISO 5356-1:2004) |
| Interface | - | digital, I ² C | - |

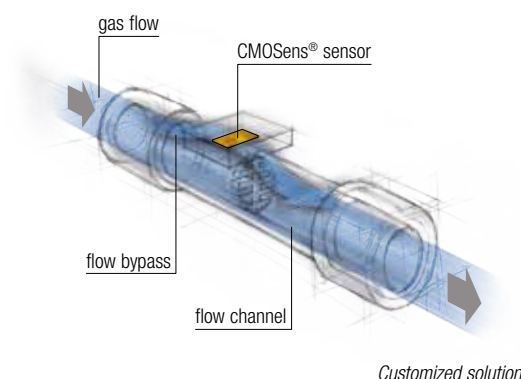
¹ The total error is a sum of span and offset error.

Applications

- Ventilation
- Anaesthesia
- Respiratory Devices
- Supply of Medical Gases

OEM Solutions on Demand

Our cutting-edge sensor technology empowers us to meet complex requirements with innovative sensor solutions. Sensirion is ready and able to modify existing standard designs or develop new solutions tailored for specific customer needs. Please contact us to discuss your requirements.



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