



Innovative Flow Measurement Technology in Ventilation

WEINMANN Emergency sets new standards in modern ventilation technology with the unique FlowCheck sensor. Users demand reliability and precision for continuous monitoring of inspiratory and expiratory tidal and minute volume.

The robust construction of the new FlowCheck sensor satisfies their needs. Under the toughest conditions during emergency responses and hygienic reprocessing, the sensor withstands outside influences and up to 50 reprocessing cycles. The unique chip technology ensures delivery of highly precise measurements. With low dead space of only 9 ml, the FlowCheck sensor is suitable for both children and adults. It is available as a disposable or reusable sensor to fulfill all requirements.

MEDUMAT Standard² combined with the FlowCheck sensor offers:

- Display of expiratory tidal and minute volume and respiratory frequency for better ventilation monitoring
- ASB (pressure support) in CPAP and SIMV modes CPAP und SIMV for top results in Non Invasive Ventilation
- Pressure and flow curves displayed for monitoring purposes



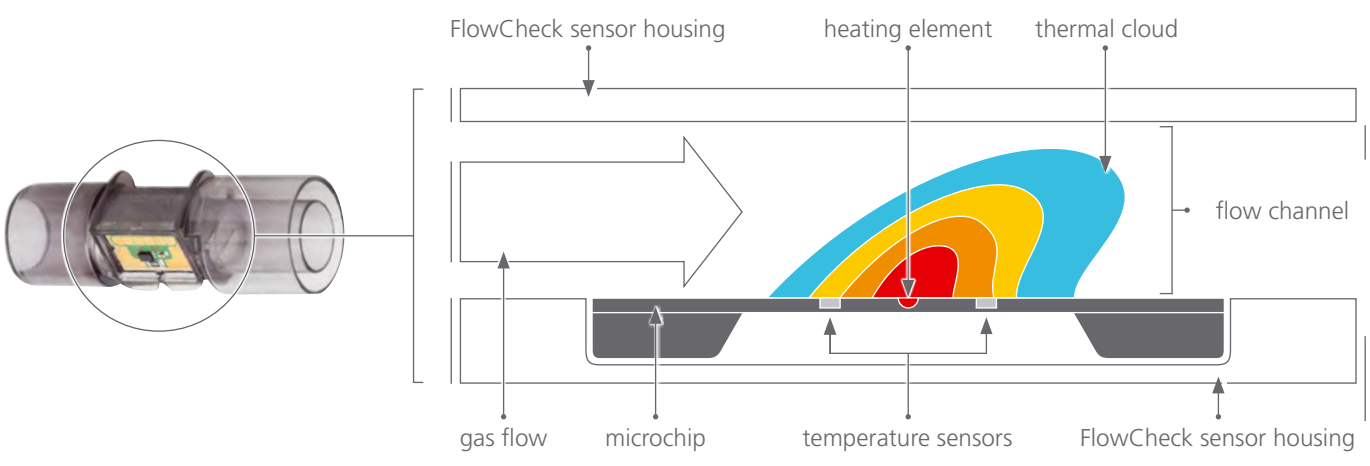
The Working Principle of the FlowCheck Sensor

The principle of thermal mass flow measurement has been used successfully in the exact measuring and dosing of gas flows for more than 30 years. This process is now being applied for the first time in expiratory flow measurement during mechanical ventilation - in MEDUMAT Standard².

Unlike conventional hot-wire processes, our sensor works without a fine wire. Flow measurement is not conducted by such sensitive wires but rather by two temperature sensors - and that's what makes the FlowCheck sensor so robust.

Exactly how does flow measurement work?

Both temperature sensors and the heating element are mounted on a microchip. The heating element generates a thermal cloud in the flow channel. The gas flow, which streams to or from the patient, causes the thermal cloud to shift towards one of the two temperature sensors (see diagram).



The size of the temperature difference measured between the two sensors determines the amount of flow. The higher the temperature difference, the higher the flow and thus the displayed volume.

This technology is particularly advantageous because it delivers fast and accurate measurements even under changing environmental conditions. An additional heating element on the sensor prevents condensation from forming in the sensor and thereby ensures that measurements can be made without interference from moisture.

Technical Data/Operating Conditions

Temperature range	-18° C to 70° C
Relative humidity	0 % RH to 95 % RH
Altitude	-500 m to 5000 m
Displayed measurements	V _{te} , M _{Ve} , f(fsp), V _{leak}
Tolerance of volume monitoring	±15 % over the entire measurement range