

Perfection in fluids.

The right *flow*
by German engineering.



SMF[®]- MFC | Mobile Flow Calibrator

Vakuum operation

Data Sheet EPE-147164



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Similar to Figure

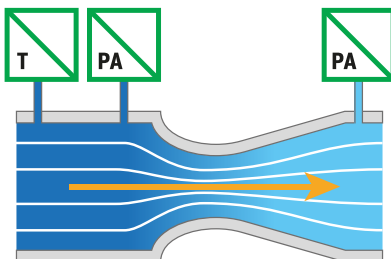
Technical data

Volume flow	0.0025...18 m ³ /h
Accuracy	bis 0.2% (PTB) bis 0.3% (DAkkS)
Medium	atm. Air, compressed air, natural gas, hydrogen, other gases
Dimensions (L x W x H)	500 x 400 x 420 mm
Weight	approx. 40 kg

Measurement sizes

Absolute pressure - environment	p _{amb}
Temperature - environment	T _{amb}
Absolute pressure - in front of nozzle	p _{NOZZLE UP}
Temperature - in front of nozzle	T _{NOZZLE}
Rel. humidity - in front of nozzle	rH _{NOZZLE}
Absolute pressure - downstream nozzle	p _{NOZZLE DOWN}

! This is only an **example** interpretation and is of course individually adaptable to your needs.



Measurement principle

SonicMasterFlow[®]

Mobile flow calibration with sonic nozzles

Operation with vacuum pump and atmospheric suction
Up to 8 sonic nozzles can be combined
Flow range 18 m³/h

Description

The series of SMF[®] nozzle test benches is specially designed for calibration with gases. Depending on customer requirements, up to 8 sonic nozzles can be combined. The resulting different circuits allow flow generation of 2⁸ = 256 different flows. With the nozzles, a precise flow can be stably set in a very short time (about 500 ms). The system is manufactured in block construction and equipped with appropriate sensors (temperature, pressure and humidity) for density determination. A vacuum pump, or the connection to the in-house vacuum network, ensures the creation of the necessary critical pressure ratio downstream of the nozzles. Alternatively, the operation can be realized with overpressure. The system is controlled by a PC with precise measurement data acquisition hardware and measurement and control software under LabVIEW.

Advantages

- ✓ Compact design
- ✓ Integrated inlet section
- ✓ Highest accuracy - up to 0.15% MV
- ✓ Approved by the PTB as a calibration standard
- ✓ Representation of volume flow or mass flow
- ✓ Flexible adaptation of nozzles to customer requirements
- ✓ Gas meter calibration up to G 10
- ✓ Best long-term stability - recalibration period up to 10 years for laval nozzles



Standard solutions

Application examples:



Gas- and flow measurement: Calibration stand for gas meters, MFM, MFC, LFE, venturi nozzles



Automotive: Adjustment test bench for valves, actuators, flowmeters, HFM, ...



Filter technology: Test bench for filters



Valve technology: Characteristic line test bench for valves



Chemical / Process Engineering: Dosing of process gases



Pharma: Inhaler test



Top-Innovator
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For special requirements we are happy to advise you. Subject to change. / EPE-147164 / Last update: 01/2018 / V01
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+49 (0) 79 32 . 6 06 66 - 0 / +49 (0) 79 32 . 6 06 66 - 11 / info@ep-e.com / www.ep-e.com