

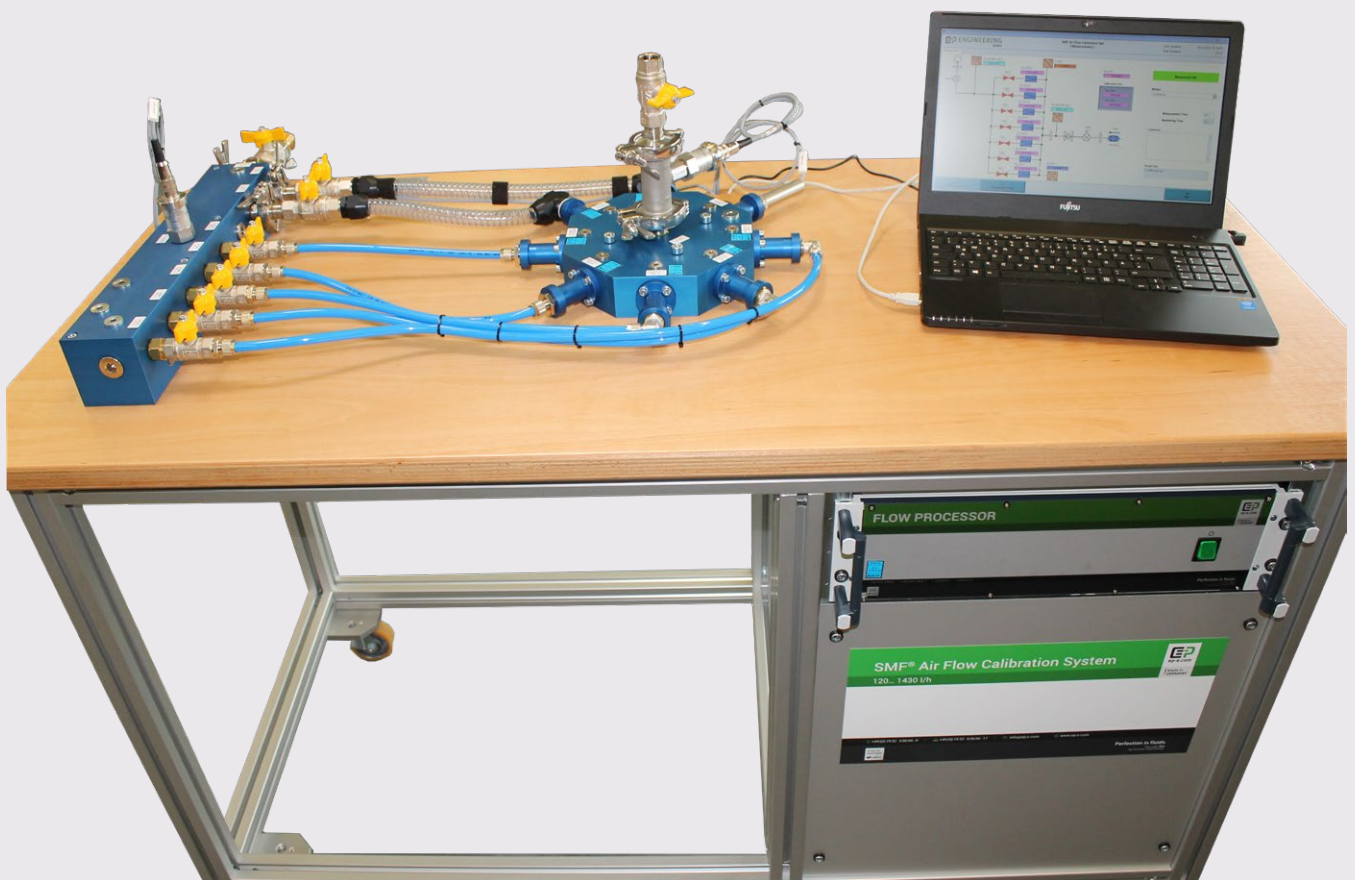
Perfection in fluids.

The right *flow*
by German engineering.



SMF[®]18 - BD SonicMasterFlow[®]

Data sheet EPE-159071



Made in
GERMANY

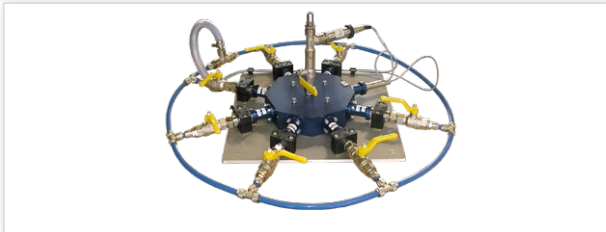
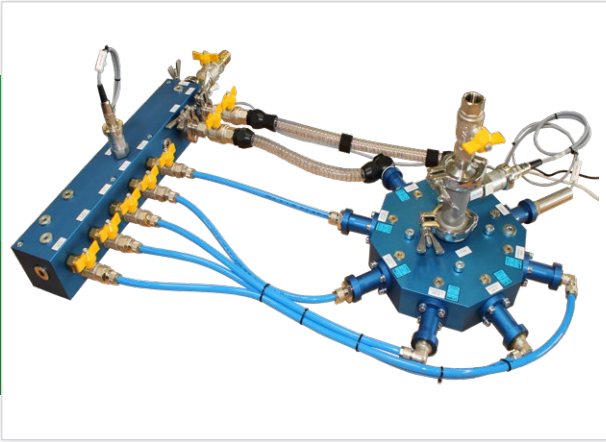


SMF[®]18 - BD SonicMasterFlow[®]

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Calibration rig with sonic nozzles Block Design

Calibration rig with up to 8 sonic nozzles
Flow generation up to 18 m³/h
Nozzle equipment according to customer requirements

Description

The series of SMF[®] nozzle test benches has been specifically designed for calibration with air. Depending on customer requirements, up to 8 sonic nozzles can be combined. The different circuits resulting therefrom allow a flow generation of 2⁸=256 different flow rates. A precise flow can be adjusted in a very short period of time (about 500 ms). The register is made of block construction and equipped with appropriate sensors (temperature, pressure and humidity) for density determination. A calibration assembly provides an atmospheric suction through the test item and the nozzle barrel. A vacuum pump, or the connection to the house vacuum power, ensures the necessary sonic pressure ratio downstream of the nozzles. Alternatively, operation can also be realised with overpressure, according to customer requirements.

The system is controlled by a PC with precise data acquisition hardware and control software in LabVIEW.

Advantages

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

Technical data

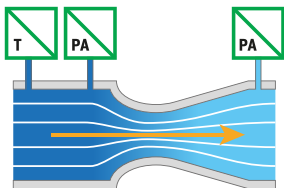
Similar to figure

Volume flow	0.001...18 m ³ /h
Medium	atm. air, compressed air
Dimensions (L x W x H)	1200 x 780 x 1000 mm
Weight	approx. 150 kg

Measurement parameters

Absolute pressure – ambient	p_{amb}
Temperature - ambient	T_{amb}
Absolute pressure – in front of nozzles	$p_{NOZZLE UP}$
Temperature – in front of nozzles	T_{NOZZLE}
rel. humidity - in front of nozzle	rH_{NOZZLE}
Absolute pressure – downstream from nozzle	$p_{NOZZLE DOWN}$

This is only an application example and can change to your needs.



Measurement
principle



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, ...



Pharma & medicine: Flow tester for inhaler



Energy technology: Determination of complex cross sections: Injectors, burners, turbine blades



Valve technology: Characteristic test bench for valves



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For special requirements we are happy to advise you. Subject to change. / EPE-159071 / Last update: 01/2018 / V02
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