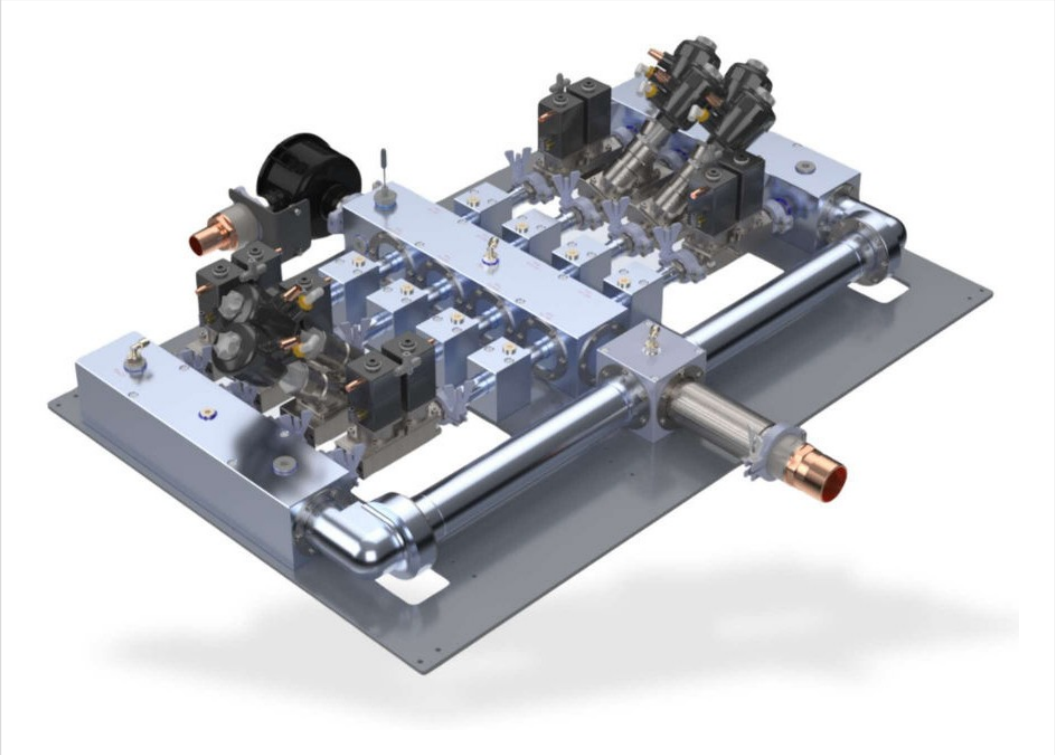
SNG-50

Technical Datasheet



Short Description

Sonic nozzle gallery for the calibration of flow meters. Several critical nozzles, switched individually or in combination, set flows of air or gases at different levels with very high stability. Gas meters, laminar flow elements, mass flow meters and other flow meters can thus be calibrated over a wide range with one compact system.

Identification

Product name	SNG-50
Type	Critical nozzle gallery
Design	DIN EN ISO 9300
Document status	12.11.2026

Design and Measuring Range

Nominal flow (inlet)	0 to 15 m^3/h (air equivalent)
Manifold nominal size	DN 50, pressure rating 0 to 10 bar
Throat diameter	10 µm to 5 mm; compliant with DIN EN ISO 9300 from 0.1 to 5 mm, below 0.1 mm manufactured based on the standard
Number of nozzles	4 critical nozzles, up to a maximum of 9
Inlet pressure	1 to 10 bar absolute
Manufacturing tolerance	±5 % of setpoint value (standard)
Calibration uncertainty (best possible)	±0.25 % rdg. (k=2)
Recalibration period	5 years for $Q < 2\,Nm^3/h$ 10 years for $Q \geq 2\,Nm^3/h$

rdg. = of reading. Nm^3/h referred to the standard conditions 1,000 mbar, 20 °C, 0 % RH.

Construction

Inlet manifold block	with manifold; 4 sensor connections (2 × pressure, temperature, relative humidity); up to 9 connections for nozzle adaptors, the one on the end face for the nozzle with the largest throat diameter
Nozzle adaptors	one critical plug-in nozzle each
Intermediate blocks	per nozzle line one (switching) valve and one pressure tapping to determine the minimum critical pressure ratio
Outlet manifold blocks	up to two, each with 3 sensor connections (1 × pressure, 2 × temperature) to monitor the critical pressure ratio and temperature gradients
Sealing	O-rings at the relevant joints

Nozzle Gradation

Individual operation	nozzles of any throat diameter, used individually and independently of each other
Binary gradation	nominal flow of the nozzles 2^0, 2^1 … 2^{n-1} times the nominal flow Q_1 of the smallest nozzle
Nominal flow of the gallery	1 to $(2^n - 1)$ times Q_1, at most about twice the nominal flow of the largest nozzle

Process Connections

Inlet manifold block	2 × G1 1/2", 3 × G1/2", 1 × G1/4" female thread
Outlet manifold block	2 × G1 1/2", 2 × G1/2", 1 × G1/4" female thread
Intermediate block	1 × G1/4" female thread

Operating Conditions

Operating temperature	0 to +50 °C
Operating mode	suction or pressure mode
Operation	manual or automated with pneumatic valves, per nozzle line in duplicate as a block-and-bleed design for leak testing against external and internal leakage; also as a complete system with sensors, controller and calculation and control software

Media Compatibility

Media	air; inert, non-flammable gases on request; oxygen*, hydrogen*, CO*; prerequisite in each case: compatible with stainless steel
Nozzle body material	stainless steel, other materials on request

* on request and subject to the Pressure Equipment Directive 2014/68/EU.

Calibration

Procedure	in suction or pressure mode
Calibration medium	air or pure gases
Calibration certificate	DAkkS or factory calibration certificate

DESIGN AND ADVICE

For the design of your nozzle gallery, contact us at **+49 7157 5387-0** or **info@tetratec.de**.