

Sonic Nozzle Gas Flow Meter

This sonic nozzle gas flow meter is a precision instrument designed for accurate gas flow measurement and control. The multi-channel setup includes individual sonic nozzles with digital displays and a computer interface for data analysis.



Overview

Precision Gas Flow Calibration

The Sonic Nozzle Gas Flow Meter is a high-precision testing facility designed for automated, reliable gas meter calibration. Utilizing Venturi nozzle technology and advanced microcontroller systems, it ensures repeatable results with an accuracy test repeatability of $\pm 0.15\%$. The system minimizes human error and increases throughput by automating data collection, barcode scanning, and volume measurement, making it an essential tool for industrial gas flow management.

Performance Metrics

Accuracy Repeatability

0.15 %

Flow Rate Repeatability

Sensor Specifications

Sensor Range and Uncertainty

Sensor Type	Range	Uncertainty
Atmospheric Pressure	86-106 kPa	d0.075%
Equalising Pressure	0 to -5 kPa	d0.1%
Differential Pressure	-500 to 500 Pa	d0.1%
Vacuum Pressure	0 to -100 kPa	d0.25%
Temperature	0 to 50 °C	d0.2%
Humidity	0% to 100%	d3.0%

System Features

Automation Features

- Automatic barcode scanning for serial numbers
- Photoelectric sensors for automatic volume detection
- Venturi nozzle master standard
- Automated gear ratio calculation
- Continuous air flow for shortened proving cycles

Supported Gear Adjustment Methods

One-point (Q_{max}), Two-points (Q_{max}, 0.2Q_{max}), Three-points (Q_{max}, 0.2Q_{max}, Q_{min})