



DIGITAL ORIFICE FLOW CALIBRATOR

Available Models

PSI-OFC1

PSI-OFC2

PSI-OFC3

Calibration is the process of comparing a measurement device against an equal or a better standard to verify the closeness of the measurement device to the standard. The standard instrument, commonly called a calibrator, is generally required to be more accurate than the instrument under calibration. Calibrators are characterized by high accuracy, reproducibility, high reliability and stability. A calibrator's accuracy itself needs to be verified against a known primary or secondary standard and is called traceability of calibration.

In order to ensure that the accuracy of the measurement stays within the claimed specifications, calibration of flow (also pressure and temperature) measuring instruments needs to be carried out on a periodic basis which may be once in six months to once a year as stipulated by the regulatory authorities.

Polltech's Digital Orifice Flow Calibrator is an easy to use air flow calibrator which can be used for accurately and quickly calibrating high flow rotameters and other instruments. It can also be used to calibrate volumetric device such as Dry Gas Meter or other volume totalizers.



PSI-OFC2 & PSI-OFC3

Salient Features

- ☞ Based on internationally accepted orifice flow metering
- ☞ Uses Pressure sensors and Temperature sensor for measurement of Orifice Parameters
- ☞ Microprocessor based electronics
- ☞ Measurement accuracy $\pm 2\%$ of reading
- ☞ Three different models covering all ranges of flow up to 300 LPM



PSI-OFC1

Digital Orifice Flow Calibrator employs a high-precision orifice assembly for measurement of flow. The orifice assembly consists of an orifice plate mounted in a specially designed cylindrical tube and is fitted with push fit unions for air inlet and outlet. In the case of PSI-OFC1 this assembly is a stand alone unit which is kept separate from the electronic unit, while for PSI-OFC2 and PSI-OFC3 it is fitted at the back of the electronic unit. The differential pressure that develops across the orifice because of the flow is measured with a precision solid state pressure sensor. Another solid state pressure sensor and a temperature sensor measures absolute pressure and temperature at the inlet of the orifice. The flow rate is computed programmatically from these measurements using stored calibration constants.

The electronic unit is a microprocessor based unit which houses the pressure and temperature sensors and performs the tasks of interfacing with sensors, timing, computations and operator interface. The 32 character alphanumeric display provides information about flow at operating condition as well as flow value corrected to ASTP (760 mmHg & 25° C). In addition absolute gas pressure and gas temperature at operating conditions is also displayed. The volume totalisation mode can be used for calibrating gas volume meters since it provides total integrated volume of gas flow over a particular time.

The performance of Digital Orifice Flow Calibrator is carefully characterized during its design and development to ensure good linearity over entire measurement range. The multi-point linearization further helps in the calibrator achieving accuracy of better than $\pm 1\%$ of F.S. Calibration certificates traceable to NPL New Delhi are provided.

The three models are designed to cover wide flow ranges viz. 30.0 to 300.0 LPM, 10.0 to 120.0 LPM, 2.00 to 30.00 LPM. Every model can carry out volume totalization up to 9999.9 Liters.

Detailed Technical Specifications :

Model → Specification↓	PSI-OFC 1	PSI-OFC 2	PSI-OFC 3
Flow Range	30.0 to 300.0 LPM	10.0 to 120.0 LPM	2.00 to 30.00 LPM
Display	32 Characters LCD Module		
Parameters displayed	Flow at Operating conditions, Flow at SATP (760 mmHg & 25° C) conditions, Operating conditions Pressure and Temperature, Total Time, Total Volume		
Operating Key Functions	Mode, Start and Stop (for Time & Volume)		
Totalizing Timer Range	1 Second to 60 Minutes		
Totalized Volume range	9999.9 Liters	0.1 to 9999.9 Liters	0.1 to 9999 Liters
Flow sensing technique	Orifice differential pressure, Gas Inlet absolute pressure & Temperature		
Sensors	Solid State Sensors for Orifice ΔP & inlet Pressure and gas Temperature		
Absolute pressure Range	600 to 800 mm Hg		
Temperature Sensor Range	5 to 60° C		
Flow computation	Computed programmatically using a 10 point Calibration table.		
Volume Totalization	Computed programmatically using the flow rate and the totalizing time		
Orifice assembly location	Stand alone housing	Fitted at the back of Electronic unit housing	
Orifice material	Precision machined SS		
Inlet / Outlet Connection	Pushfit Union for 16 mm OD tube	Push fit Union for 12mmOD tube	
Power Supply	6 VDC through 230 V AC adaptor (Optional- Li-ion battery)		
Dimensions & Weight	35x10x8 Cm for Orifice housing .21x20x5 Cm for Display unit Total Weight- 2.5 Kg	Size - 25 x 25 x 8 Cm Wt.- 1.2 Kg.	

Accessories

Filter cartridges, Carrying case / bag

Related Services

Flow calibration of own- and third-party instruments

Related Products

Air Flow Calibrator PSI-AFC-1L, PSI-AFC-1M, PSI-AFC-1H

LFE Gas Flow Calibrator Model-PSI-LGFC-1

Low Flow Digital Calibrator Model PSI-DFC-1L

Top Loading Orifice Calibrator Model PSI-TLOC1 & PSI-TLOC2

Digital Flow Meter Model PSI-DFM-1L, Model PSI-DFM-1M, Model PSI-DFM-1H

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