

Certificate of Gauge Calibration

Issued by: Retrotec
Date of Calibration: **2016-03-14**

Certificate Number: 405166105659
Results: As Found



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This calibration laboratory has been assessed by the ANSI-ASQ National Accreditation Board and meets the requirements of international standard ISO/IEC 17025:2005.

Instrument:

Description: Pressure and Flow Gauge
Manufacturer: Retrotec
Model Number: DM32 4A
Serial Number: 405166

Calibrated By: **Mike Shtunyk**

A handwritten signature in black ink, appearing to read "Michael Shtunyk".
Signature

Environmental conditions:

Temperature: 20°C ±2°C
Relative Humidity: 50% ±10%
Mains Voltage: 120V ±10V
Mains Frequency: 60Hz ±1Hz

Comments:

Results recorded as received. No adjustment performed.

Calibration Information:

The instrument was calibrated against laboratory standards whose values are traceable to recognized national standards. The results and uncertainty limits refer to the measured values only, with no account being taken of the instrument's ability to maintain its calibration.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with ANSI/ISO/IEC 17025:2005 requirements.

Calibration Procedure:

CP-35-01

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Calibration Results

Channel A		
Applied Value (Pa)	Reading (Pa)	Error (%)
-14.99	-14.99	0.00
-24.98	-24.74	0.96
-49.98	-49.85	0.26
-74.99	-74.80	0.25
-149.99	-149.32	0.45
-300.01	-298.48	0.51
-600.00	-595.60	0.73
-749.99	-743.35	0.89
15.00	15.00	0.00
25.00	24.90	0.40
50.00	49.62	0.76
75.00	74.80	0.27
150.00	149.50	0.33
300.00	298.43	0.52
599.99	596.06	0.66
749.97	743.89	0.81

Channel B		
Applied Value (Pa)	Reading (Pa)	Error (%)
-14.99	-14.90	0.60
-24.98	-24.90	0.32
-49.98	-49.80	0.36
-74.99	-74.90	0.12
-149.99	-149.60	0.26
-300.01	-298.58	0.48
-600.00	-595.93	0.68
-749.99	-743.30	0.89
15.00	15.02	0.13
25.00	24.90	0.40
50.00	49.94	0.12
75.00	74.81	0.25
150.00	149.70	0.20
300.00	298.67	0.44
599.99	596.06	0.66
749.97	743.82	0.82

Instrument display resolution is 0.1 Pa.

Uncertainties, Channel A and Channel B

Pressure Range 0 Pa to ±1000 Pa: (0.1 + 0.05 % rdg) Pa

MS
Initial

The Pressure Range uncertainty limits are compliant with (meets or exceeds requirements from) the following standards or guidelines:

NFPA 2001 ±1 Pa ±(10 to 50) Pa	EN13829 ±2 Pa (up to ±60 Pa)	ATTMA: TS1 ±2 Pa (up to ±100 Pa)	ASTM E779-10 ±5% or 0.25 Pa whichever is greater	CGSB ±1 Pa (up to ±50 Pa)	GAP50-784 ±1% or 1 Pa whichever is greater
ISO14520 ±1 Pa (up to ±60 Pa)	EN15004 ±1 Pa (up to ±100 Pa)	USACE ±1% or 0.25 Pa ±(25 to 250) Pa	TITLE 24 ±1% or 0.2 Pa whichever is greater	RESNET ±1% or 0.5 Pa whichever is greater	