



5300 Series Gas Flow Multi-Meter Calibration Certificate

TSI Inc., 500 Cardigan Rd, Shoreview, MN 55126 USA



Model: 531005 **Rev:** A
Serial Number:
Verification date: 24-Oct-2023
Certificate Number:
 1120756-53102343001

Summary Status	
<input type="checkbox"/> As-Found	<input checked="" type="checkbox"/> In Tolerance
<input checked="" type="checkbox"/> As-Left	<input type="checkbox"/> Out of Tolerance

Environmental Conditions
Pressure: 97.5 kPa
Temperature: 22.3°C

Customer Name:

Carbon Dioxide Flow

Actual (SLPM)	Measured (SLPM)	Allowable Min	Range Max
0.000	-0.000	-0.050	0.050
0.283	0.301	0.233	0.333
2.264	2.311	2.214	2.314
6.519	6.541	6.389	6.649
15.51	15.41	15.19	15.82
38.49	38.48	37.72	39.26
77.41	77.35	75.86	78.96
99.59	99.59	97.59	101.6
PASS			

Pressure**

Tolerance: ±0.110 psia

Actual (psia)	Measured (psia)	Allowable Min	Range Max
14.16	14.24	14.05	14.27
21.18	21.26	21.07	21.29
PASS			

Temperature**

Tolerance: ±1.000 °C

Actual (°C)	Measured (°C)	Allowable Min	Range Max
22.19	21.95	21.19	23.19
PASS			

Low Pressure

Uncertainty (cmH2O) -153 to 153 ± 0.58

Reference (cmH2O)	Measured (cmH2O)	Allowable Min	Range Max
-151.0	-151.0	-150.3	-151.8
-73.39	-73.36	-73.03	-73.76
0.000	-0.004	-0.150	0.150
75.30	75.26	74.93	75.68
151.2	151.2	150.4	152.0
PASS			

Flow Measurement Uncertainty

Flow (SLPM)	CO2
0	NA
0.01-0.02	6.1%
0.03-0.05	4.1%
0.06-0.10	2.4%
0.11-0.20	2.0%
0.21-0.40	1.5%
0.41-0.80	1.2%
0.81-1.60	1.1%
1.61-3.00	1.0%
3.01-50	0.81%

Internal Calibration Reference(s)

Measurement Type	Reference (FC15)	Due for Calibration
Flow	E010037	31-Jan-2024
Pressure	E010038	31-Jan-2024
Temperature	E010039	31-Jan-2024

TSI Std Conditions: 70 °F (21.11 C) and 14.7 psia

If applicable, Air-Oxygen mixtures are corrections based on the Air calibration.

If applicable, Nitrogen flows are corrections based on the Air calibration.

If applicable, Nitrous Oxide flows are corrections based on the CO2 calibration.

This flowmeter has been calibrated using TSI procedures 10000021269 and 10000006845.

*Tolerance specified: whichever is greater

**Not Within ISO 17025 scope of accreditation

TSI does hereby certify that the above described instrument conforms to the manufacturer's specifications (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the International System of Units (SI) through National Metrology Institutes that are members of the CIPM MRA or have been derived by the ratio type of self-calibration techniques. TSI is registered to ISO 9001:2015. TSI is accredited to ISO 17025:2017 by ANAB Certificate Number AC-2850. The aforementioned uncertainty values represent expanded uncertainty and are based on a standard uncertainty multiplied by a coverage factor k=2 providing a confidence level of approximately 95%. This report may not be reproduced unless permission is obtained in writing from the TSI calibration service department issuing this report. The unit is found to have passed when the readings are within the specification limits of the device as presented as the allowable range stated with each measurement above. The customer shall assess the results and uncertainty in order to determine if the results meet their needs.

	Print Below	Sign Below
Performed By		
Approved By		
Date Approved		