

Alicat Scientific, Inc.

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Calibration Data Sheet

Certification Number: 143537

Customer: University of North Dakota
Sales Order Number: SO330214
Serial Number: 134577
Model Number: MCW-2SLPM-D-SV-PCV30
Software Version: 6v13.0-R22
P/D/I Values: 100 / 5000 / 0
Adder Codes: 5M, LIN, 5IN, GAS: Air, DS, P1: 700 mbarA, P2: 100 mbarA -500 mbarA
Process Gas: Selectable
Calibration Gas: Air
Range: 2.000 SLPM
Gas Temperature: 26.11°C
Ambient Humidity: 44.02%
Calibration Procedure/Rev. #: DOC-AUTOCAL-GASFLOW/Rev. 88
Calibrated By: Brian Wong
Calibration Date: 6/29/2016
Full Scale Pressure: 60.00 PSIA
Full Scale Pressure Accuracy: +/-0.5% of Full Scale
Temperature Accuracy: +/-1.5°C
Standard Temp. & Pressure: 25.00°C, 14.69595 PSIA
Normal Temp. & Pressure: 0.00°C, 14.69595 PSIA
Calibration due 1 yr. after receipt:

Equipment Used

Voltage: TOOL-CMTR23
Tool Due Date: 4/1/2017
Manufacturer/Model: FLUKE 87V
Device Uncertainty: +/- (0.1% + 1 digit)

Temperature: TOOL-TEMP18
Tool Due Date: 6/8/2017
Manufacturer/Model: SELCO
Device Uncertainty: +/- 0.75°C

Flow: TOOL-FLOW39
Tool Due Date: 8/3/2016
Manufacturer/Model: Alicat / MCM-5SLPM-D
Device Uncertainty: +/- (0.3% Reading + 0.2% F.S.)

Pressure: TOOL-PRESSURE8
Tool Due Date: 3/9/2017
Manufacturer/Model: Alicat / P-100PSIG-D
Device Uncertainty: +/- 0.2% of full scale

All test equipment used for calibration is NIST traceable.

Calibration

Uncertainty: +/- (0.8% of Reading + 0.2% of Full Scale)
Units of measure: SLPM

Calibration Pressure: Inlet: 700 mbar(A)
Outlet: 100-500 mbar(A)

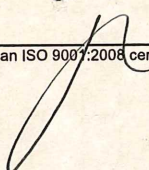
Output 1 Configuration
mini-DIN Pin #6

Output 2 Configuration
mini-DIN Pin #2

D.U.T.	Actual	In Tolerance	Output 1	Output 2
0.000	0.000	Yes	0.000 Vdc	5.12 Vdc
0.501	0.500	Yes	1.252 Vdc	5.12 Vdc
1.002	0.999	Yes	2.505 Vdc	5.12 Vdc
1.502	1.499	Yes	3.760 Vdc	5.12 Vdc
2.001	2.000	Yes	5.000 Vdc	5.12 Vdc

Notes: Local set-point. Analog set-point configured for 0-5V.

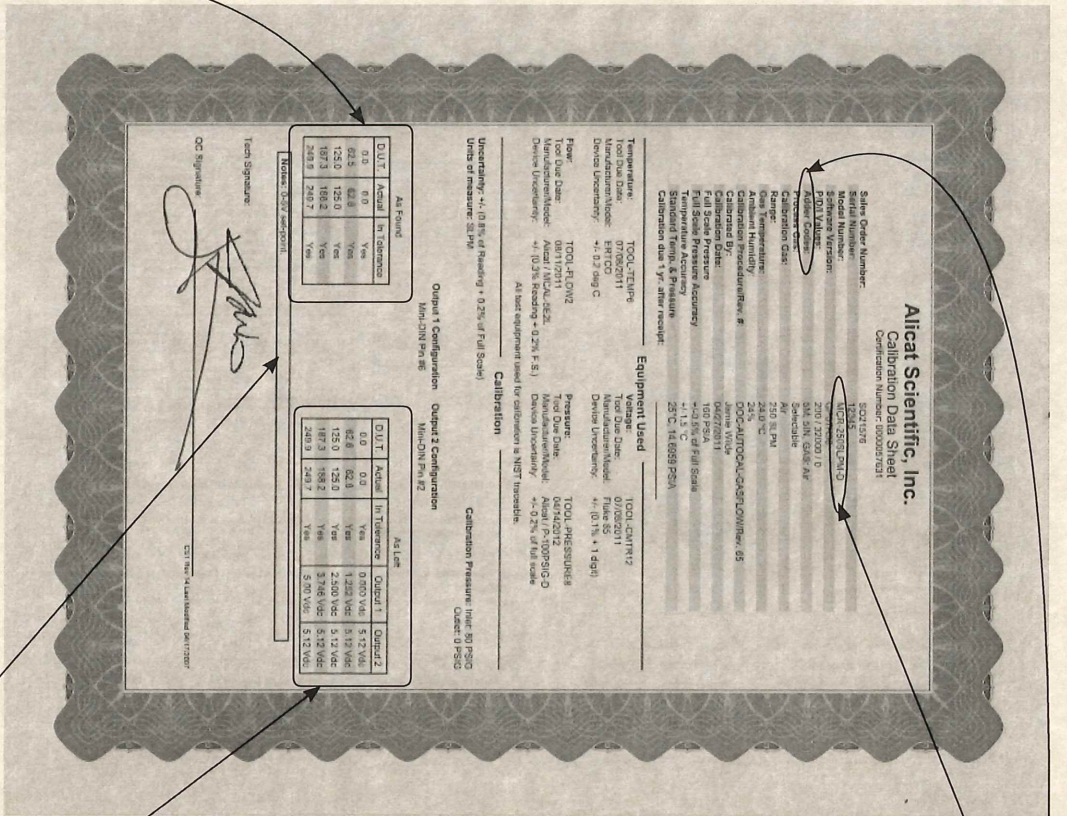
Tech Signature: 

QC Signature: 

Alicat Scientific, Inc. is an ISO 9001:2008 certified company.

CS1 Rev 16 Last Modified 01/18/2013





These three columns appear only on Recalibration Certificates.
D.U.T. = What this device reads/shows at corresponding "Actual" value.
Actual = Readings of the Calibrator while this unit was showing the number under "D.U.T." as received from the customer.
In Tolerance = Yes/No as to whether or not this unit was in spec as received from the customer.

Model Type
M = mass flow meter
V = volumetric flow meter
P = pressure gauge
MC = mass flow controller
MCV = mass flow controller integrated shutoff valve
MCP = mass flow controller moderate flow valve
MCR = mass flow controller, high flow
VC = volumetric controller
VCR = volumetric controller, high flow
PC = pressure controller
PCR = pressure controller, high flow
PCD = dual valve pressure controller
L = liquid meter
LC = liquid controller
LCR = liquid controller, high flow
MS = mass flow meter*
MCS = mass flow controller*
MCRS = mass flow controller, high flow*
PS = pressure gauge*
PCS = pressure controller*
PCRS = pressure controller, high flow*
* "S" adder indicates aggressive gas configuration

Key to Common Adder Codes:	
Parameters	
M = Mass	P = Pressure
T = Temperature	V = Volumetric
Analog Output Signals	
1M, 1P, 1T or 1V = 1-5V primary output	
12M, 12P, 12T, or 12V = 1-5V secondary output	
5M, 5P, 5T or 5V = 0-5V primary output	
52M, 52P, 52T or 52V = 0-5V secondary output	
10M, 10P, 10T or 10V = 0-10V primary output	
102M, 102P, 102T or 102V = 0-10V secondary output	
CM, CP, CT or CV = 4-20mA primary output	
C2M, C2P, C2T or C2V = 4-20mA secondary output	
Set Points (controllers only)	
11N = 1-5V set-point	101N = 0-10V set-point
51N = 0-5V set-point	C1N = 4-20mA set-point
Others	
GAS = primary calibration gas	TOT = totalizer
DS = downstream valve	
<i>For explanation of additional adder codes please contact Alicat.</i>	

D.U.T. (Device Under Test) = What this device reads/shows at corresponding "Actual" value.
Actual = Readings of the Calibrator while this unit was showing the number seen under "D.U.T." - after calibration adjustments.
In Tolerance = Yes/No as to whether or not this unit was in spec after calibration.
Output Columns = The output value on stated pin when "D.U.T." reads corresponding value.

Any special configuration information will appear here.