Micro Motion, Inc.

Mass Flowmeter Calibration Certificate

15333411

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	15333411	10500174	3.1	1	SN2301/361 S1
PUCK700	34283811				

Process

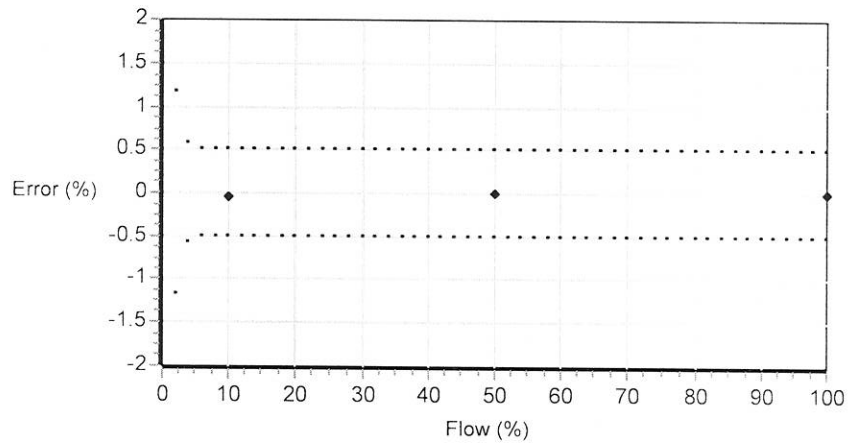
Process ID : 1.36932292
Process Time : 2022.09.06 7:50:49
Process Stand : TSM1C@SSCB:1
Stand Uncertainty : +/-0.030%
Fluid : H2O
100% Rate : 38.6 KG/MIN
Pickoff : 1
Max Rate P/T : 27.41 PSIG/22.2 C

Results

Status : PASS
D1 : 0
D2 : 1
K1 : 4088.735
K2 : 4258.664
DT : 4.25
FD : 0
DTG : 0
DFQ1 : 0
DFQ2 : 0
FlowCal : 139.114.50
FFQ : 0
FTG : 0
DensCal : 04089042594.25
FCF : 139.11
FT : 4.5

WILSON, NEIL
Technician
This certificate is produced by an electronic data system and is valid without signature.

Detail



Flow (%)	Flow Rate (kg/min)	Meter Total (kg)	Reference Total (kg)	Error (%)	Specification (±%)
100.0	38.6	39.51932	39.52069	-0.003	0.500
10.0	3.86	5.616815	5.619313	-0.044	0.500
50.0	19.3	19.18356	19.18308	0.003	0.500
100.0	38.6	39.26456	39.26558	-0.003	0.500

Micro Motion, Inc.

Transmitter Configuration Report

12219366

Product Code	Serial ID	Order ID	Line	Item	Customer Tag SN 23011361 S1
CNG050S290NCAAEZZZ	15333411	10500174	3.1	1	
2700I13ABAEZWZ	12219366	10500174	3.33	1	
PUCK700	34283811				

Process

Process ID : 1.36932850
Process Time : 2022.09.06 12:08:19
Process Stand : CONFIGURATION@SSCB

Sensor

D1 : 0
D2 : 1
DFQ1 : 0
DFQ2 : 0
DT : 4.25
DTG : 0
Dens PCF : 0
Density Meter Factor : 1
FCF : 139.11
FD : 0
FFQ : 0
FT : 4.5
FTG : 0
Flow PCP : 30
Flow PCF : 0
K1 : 4088.735
K2 : 4258.664
Mass Flow Meter Factor : 1
Volume Flow Meter Factor : 1

Units

Density Unit : G/CM3
GSV Flow Unit : SCFM
Mass Flow Unit : G/SEC
Pressure Unit : POUNDS/SQUARE INCH
Special GSV Base Time Unit : MIN
Special GSV Base Volume Unit : Standard cubic feet
Special GSV Conv Factor : 1
Special GSV Flow Unit Text : NONE
Special GSV Total Text : NONE
Special Mass Base Unit : G
Special Mass Conv Factor : 1
Special Mass Flow Text : NONE

Units

Special Mass Time Unit : SEC
Special Mass Total Text : NONE
Special Volume Base Unit : L
Special Volume Conv Factor : 1
Special Volume Flow Text : NONE
Special Volume Time Unit : SEC
Special Volume Total Text : NONE
Temperature Unit : C
Volume Flow Unit : L/MIN

MVD Channel Assignments

Channel B Power : Active (internally powered)

Assignments

Event 1 Variable : Density
Event 2 Variable : Density
Frequency1 Scaling Method : Frequency = Flow
Frequency Variable 1 : Mass Flow Rate
mA1 Variable : Mass Flow Rate

Ranges

Event 1 Setpoint : 0
Event 1 Type : Event Low (Event "OFF" if PV > SP)
Event 2 Setpoint : 0
Event 2 Type : Event Low (Event "OFF" if PV > SP)
Frequency1 Active State : Active High
Frequency1 Hertz : 1000
Frequency1 Output Mode : Single
Frequency1 Pulses/Unit : 1.554404
Frequency1 Rate : 643.3333
Frequency1 Units/Pulse : 0.6433333
mA1 LRV : 0
mA1 URV : 643.3333

Faults

Frequency1 Fault Behavior : Upscale

SN 23011361 S1

Faults

Frequency1 Fault Value	15000
mA1 Fault Behavior	Downscale (Default)
mA1 Fault Value	2

Other

Calibration Process ID	1.36932292
Core Software Rev	35
Density Cutoff	0.2
Density Damping	0.8
Density High Limit	5
Density Low Limit	0
Direction	FORWARD
Fault Dwell Time	0
Feature Key	1
Flow Damping	0.8
HART Device ID	4261421
LD Type	0
Mass Flow Cutoff	1.836
Pressure Comp Line Pressure	0
Pressure Compensation State	OFF
RS485 Baud	1200 baud
RS485 Parity	Odd
RS485 Protocol	HART
Slug Duration	0
Tag	
Temperature Damping	2.4
Transmitter Software Rev	80
Volume Flow Cutoff	0.11016

Tulsa Gas Technologies, Inc.
4809 S. 101st East Ave Tulsa, OK 74146
PHONE: 918-665-2641 FAX: 918-665-2657

1/12/2023
Dispenser Serial Number 23011361 (H1)

Micro Motion Transmitter Configuration

Required settings for correct operation of Micro Motion mass flow meter.

Transmitter Model Number:	2700
Sensor Model Number:	CNG050
Transmitter Serial Number:	12219366
Sensor Serial Number	15333411
Flow Calibration Factor:	139.114.50
Flow Units	LB/min

Communication on RS-485

Protocol	Modbus ASCII 7 Bit
Modbus Address	1
Baud Rate	9600
Parity	Even
Stop Bits	1

HART Communication

Superimposed on Primary mA (PV)

Analog Output (4-20 mA)

Analog Variable (PV)	Mass Flow
Lower Range Value	0.2500 lb/min
Upper Range Value	300.000 lb/min
mA Cutoff	0.0000 lb/min

Freq/Rate

Frequency variable (TV)	Mass Flow
Frequency Cutoff	0.2500 lb/min
Pulses per Unit	1000.00000 per lb

Temperature

Temp Units	deg F

Micro Motion, Inc.

Mass Flowmeter Calibration Certificate

15335180

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	15335180	10500174	3.1	2	SN 23011361 S2
PUCK700	34283617				

Process

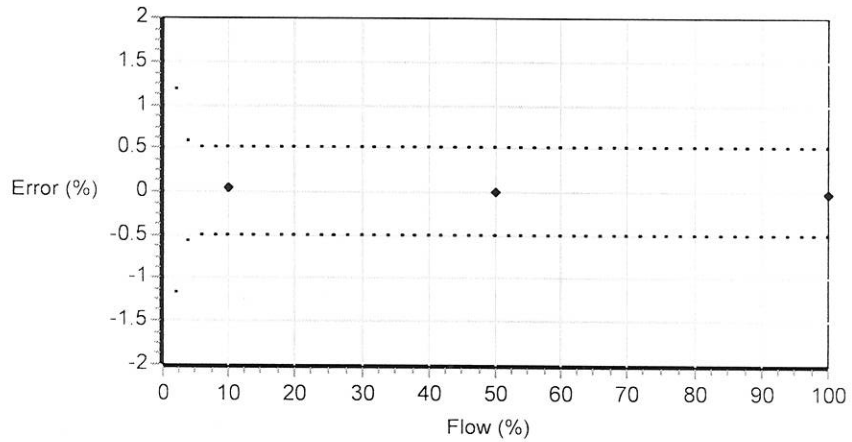
Process ID : 1.36931201
Process Time : 2022.09.03 0:00:21
Process Stand : TSM1C@SSCB:1
Stand Uncertainty : +/-0.030%
Fluid : H20
100% Rate : 38.6 KG/MIN
Pickoff : 1
Max Rate P/T : 29.93 PSIG/22.3 C

Results

Status : PASS
D1 : 0
D2 : 1
K1 : 4069.268
K2 : 4237.435
DT : 4.25
FD : 0
DTG : 0
DFQ1 : 0
DFQ2 : 0
FlowCal : 139.724.50
FFQ : 0
FTG : 0
DensCal : 04069042374.25
FCF : 139.72
FT : 4.5

DINESH KARKI
Technician
This certificate is produced by an electronic data system and is valid without signature.

Detail



Flow (%)	Flow Rate (kg/min)	Meter Total (kg)	Reference Total (kg)	Error (%)	Specification (±%)
100.0	38.6	39.54827	39.55923	-0.028	0.500
10.0	3.86	5.616107	5.61407	0.036	0.500
50.0	19.3	19.12341	19.12299	0.002	0.500
100.0	38.6	39.39066	39.39795	-0.019	0.500

Traceable to one or more of the following National Metrology Institutes: NIM-China, NIST-USA, and VSL-The Netherlands

Micro Motion, Inc.

Transmitter Configuration Report

12219365

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	15335180	10500174	3.1	2	SN23011361 SL
2700I13ABAEZWZ	12219365	10500174	3.33	2	
PUCK700	34283617				

Process

Process ID : 1.36932785
Process Time : 2022.09.06 11:21:33
Process Stand : CONFIGURATION@SSCB

Sensor

D1 : 0
D2 : 1
DFQ1 : 0
DFQ2 : 0
DT : 4.25
DTG : 0
Dens PCF : 0
Density Meter Factor : 1
FCF : 139.72
FD : 0
FFQ : 0
FT : 4.5
FTG : 0
Flow PCP : 30
Flow PCF : 0
K1 : 4069.268
K2 : 4237.435
Mass Flow Meter Factor : 1
Volume Flow Meter Factor : 1

Units

Density Unit : G/CM3
GSV Flow Unit : SCFM
Mass Flow Unit : G/SEC
Pressure Unit : POUNDS/SQUARE INCH
Special GSV Base Time Unit : MIN
Special GSV Base Volume Unit : Standard cubic feet
Special GSV Conv Factor : 1
Special GSV Flow Unit Text : NONE
Special GSV Total Text : NONE
Special Mass Base Unit : G
Special Mass Conv Factor : 1
Special Mass Flow Text : NONE

Units

Special Mass Time Unit : SEC
Special Mass Total Text : NONE
Special Volume Base Unit : L
Special Volume Conv Factor : 1
Special Volume Flow Text : NONE
Special Volume Time Unit : SEC
Special Volume Total Text : NONE
Temperature Unit : C
Volume Flow Unit : L/MIN

MVD Channel Assignments

Channel B Power : Active (internally powered)

Assignments

Event 1 Variable : Density
Event 2 Variable : Density
Frequency1 Scaling Method : Frequency = Flow
Frequency Variable 1 : Mass Flow Rate
mA1 Variable : Mass Flow Rate

Ranges

Event 1 Setpoint : 0
Event 1 Type : Event Low (Event "OFF" if PV > SP)
Event 2 Setpoint : 0
Event 2 Type : Event Low (Event "OFF" if PV > SP)
Frequency1 Active State : Active High
Frequency1 Hertz : 1000
Frequency1 Output Mode : Single
Frequency1 Pulses/Unit : 1.554404
Frequency1 Rate : 643.3333
Frequency1 Units/Pulse : 0.6433333
mA1 LRV : 0
mA1 URV : 643.3333

Faults

Frequency1 Fault Behavior : Upscale

SN 23011361 S2

Faults

Frequency1 Fault Value	15000
mA1 Fault Behavior	Downscale (Default)
mA1 Fault Value	2

Other

Calibration Process ID	1.36931201
Core Software Rev	35
Density Cutoff	0.2
Density Damping	0.8
Density High Limit	5
Density Low Limit	0
Direction	FORWARD
Fault Dwell Time	0
Feature Key	1
Flow Damping	0.8
HART Device ID	4261415
LD Type	0
Mass Flow Cutoff	1.836
Pressure Comp Line Pressure	0
Pressure Compensation State	OFF
RS485 Baud	1200 baud
RS485 Parity	Odd
RS485 Protocol	HART
Slug Duration	0
Tag	
Temperature Damping	2.4
Transmitter Software Rev	80
Volume Flow Cutoff	0.11016

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1/12/2023
Dispenser Serial Number 23011361 (H2)

Micro Motion Transmitter Configuration

Required settings for correct operation of Micro Motion mass flow meter.

Transmitter Model Number:	2700
Sensor Model Number:	CNG050
Transmitter Serial Number:	12219365
Sensor Serial Number	15335180
Flow Calibration Factor:	139.724.50
Flow Units	LB/min

Communication on RS-485

Protocol	Modbus ASCII 7 Bit
Modbus Address	1
Baud Rate	9600
Parity	Even
Stop Bits	1

HART Communication

Superimposed on Primary mA (PV)

Analog Output (4-20 mA)

Analog Variable (PV)	Mass Flow
Lower Range Value	0.2500 lb/min
Upper Range Value	300.000 lb/min
mA Cutoff	0.0000 lb/min

Freq/Rate

Frequency variable (TV)	Mass Flow
Frequency Cutoff	0.2500 lb/min
Pulses per Unit	1000.00000 per lb

Temperature

Temp Units	deg F