Micro Motion, Inc.

Mass Flowmeter Calibration Certificate

15052883

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	15052883	10319160	1.1	2	20041289A

Process

Process ID : 9.25691738
Process Time : 2019.01.30 10:47:38
Process Stand : SSF1E@SSCCL:1
Stand Uncertainty : +/-0.030%
Fluid : H20
100% Rate : 38.6 KG/MIN
Pickoff : 1
Max Rate P/T : 41.69 PSIG/21.3 C

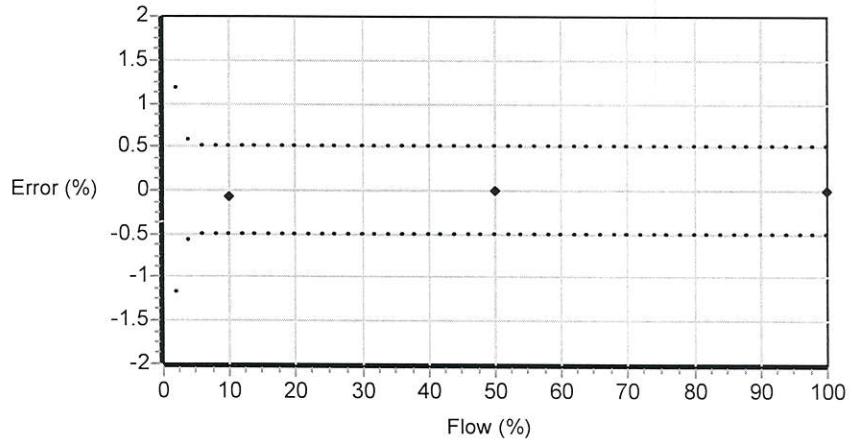
Results

Status : PASS
D1 : 0
D2 : 1
K1 : 4039.897
K2 : 4210.966
DT : 4.25
FD : 0
DTG : 0
DFQ1 : 0
DFQ2 : 0
FlowCal : 138.564.50
FFQ : 0
FTG : 0
DensCal : 04040042114.25
FCF : 138.56
FT : 4.5

By Bob Carter

SEBASTIAN, GHERMAN
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	38.33173	38.33009	0.004	0.500
10.0	3.86	3.92028	3.922699	-0.062	0.500
50.0	19.3	19.80083	19.80092	0.000	0.500
100.0	38.6	38.20306	38.2025	0.001	0.500

Micro Motion, Inc.

Transmitter Configuration Report

3427925

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	15052883	10319160	1.1	2	20041289A
2700I13ABAEZWZ	3427925	10319160	1.33	2	
PUCK700	26018672				

Process

Process ID : 1.35025316
Process Time : 2019.02.17 14:53:54
Process Stand : SSCB-CONFIG1@SSCB

Sensor

D1 : 0
D2 : 1
DFQ1 : 0
DFQ2 : 0
DT : 4.25
DTG : 0
Density Meter Factor : 1
FCF : 138.56
FD : 0
FFQ : 0
FT : 4.5
FTG : 0
Flow PCP : 30
Flow PCF : 0
K1 : 4039.897
K2 : 4210.966
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
Special Mass Time Unit : SEC

Units

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
Frequency1 Fault Value : 15000

20041289A

Faults

mA1 Fault Behavior	Downscale (Default)
mA1 Fault Value	2

Other

Calibration Process ID	9.25691738
Core Software Rev	35
Density Cutoff	0.2
Density Damping	1.6
Density High Limit	5
Density Low Limit	0
Direction	FORWARD
Fault Dwell Time	0
Feature Key	1
Flow Damping	0.8
HART Device ID	3645326
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	4.8
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

6/18/2020
Dispenser Serial Number 20041289
Side A

Micro Motion Transmitter Configuration

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

Transmitter Model Number:	2700
Sensor Model Number:	CNG095
Transmitter Serial Number:	3427925
Sensor Serial Number	15052883
Flow Calibration Factor:	138.564.50
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	00000 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

15084276

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	15084276	10369180	1.1	1	200412898

Process

Process ID : 9.27030714
Process Time : 2020.05.18 10:56:53
Process Stand : SSF1E@SSCCL:1
Stand Uncertainty : +/-0.030%
Fluid : H20
100% Rate : 38.6 KG/MIN
Pickoff : 1
Max Rate P/T : 41.67 PSIG/21.2 C

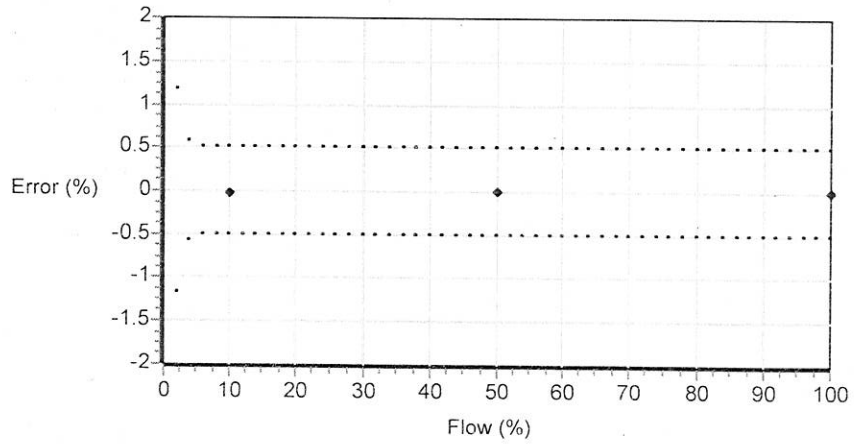
Results

Status : PASS
D1 : 0
D2 : 1
K1 : 4047.446
K2 : 4217.476
DT : 4.25
FD : 0
DTG : 0
DFQ1 : 0
DFQ2 : 0
FlowCal : 139.954.50
FFQ : 0
FTG : 0
DensCal : 04047042174.25
FCF : 139.95
FT : 4.5

By Bob Foster

ANDREI SZABO
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	38.25839	38.26104	-0.007	0.500
10.0	3.86	3.898021	3.898654	-0.016	0.500
50.0	19.3	19.8047	19.80399	0.004	0.500
100.0	38.6	38.22494	38.22476	0.000	0.500

Micro Motion, Inc.

Transmitter Configuration Report

3463379

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	15084276	10369180	1.1	1	Z0041289B
2700I13ABAEZWZ	3463379	10369180	1.33	1	
PUCK700	26094994				

Process

Process ID : 1.35816744
Process Time : 2020.06.10 13:05:39
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 : 139.95
FD : 0
FFQ : 0
FT : 4.5
FTG : 0
Flow PCP : 30
Flow PCF : 0
K1 : 4047.446
K2 : 4217.476
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

20041289B

Faults

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

Other

Calibration Process ID	9.27030714
Core Software Rev	35
Density Cutoff	0.2
Density Damping	1.6
Density High Limit	5
Density Low Limit	0
Direction	FORWARD
Fault Dwell Time	0
Feature Key	1
Flow Damping	0.8
HART Device ID	6084349
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	4.8
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

6/18/2020
Dispenser Serial Number 20041289
Side B

Micro Motion Transmitter Configuration

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

Transmitter Model Number:	2700
Sensor Model Number:	CNG095
Transmitter Serial Number:	3463379
Sensor Serial Number	15084276
Flow Calibration Factor:	139.954.50
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	00000 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