

Product Code CNG050S290NCAAEZZZ Serial ID 13285808 Order ID 10344506 Line 1.1 Item 1 Customer Tag 19091269A

Process ID : 5.28037236 Process Time : 2019.08.22 14:50:01 Process Stand : TSGCNG@SSCN:1 Stand Uncertainty : +/-0.030%

Fluid : H2O 100% Rate : 38.6 KG/MIN Pickoff : 1 Max Rate P/T : 48.42 PSIG/25.7 C

Status : PASS

D1 : 0 D2 : 1 K1 : 4055.443 K2 : 4227.622 DT : 4.25 FD : 0 DTG : 0 DFQ1 : 0 DFQ2 : 0 FlowCal : 138.574.50 FFQ : 0 FTG : 0 DensCal : 04055042284.25 FCF : 138.57 FT : 4.5

Meter Total (kg) 38.15288 Reference Total (kg) 38.15547 Error (%) -0.007 Specification (±%) 0.500

Flow Rate (kg/min) 38.6 Flow Rate (kg/min) 3.86 Reference Total (kg) 3.819421 Error (%) -0.029 Specification (±%) 0.500

Flow Rate (kg/min) 19.3 Reference Total (kg) 19.79891 Error (%) -0.033 Specification (±%) 0.500

Flow Rate (kg/min) 38.6 Reference Total (kg) 39.55342 Error (%) -0.018 Specification (±%) 0.500

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Process Detail



Process ID : 5.28037236

Process Time : 2019.08.22 14:50:01

Process Stand : TSGCNG@SSCN:1

Stand Uncertainty : +/-0.030%

Fluid : H2O

100% Rate : 38.6 KG/MIN

Pickoff : 1

Max Rate P/T : 48.42 PSIG/25.7 C

Results

Status : PASS

D1 : 0

D2 : 1

K1 : 4055.443

K2 : 4227.622

DT : 4.25

FD : 0

DTG : 0

DFQ1 : 0

DFQ2 : 0

FlowCal : 138.574.50

FFQ : 0

FTG : 0

DensCal : 04055042284.25

FCF : 138.57

FT : 4.5

WANG, TENGFEI

Technician

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

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	13285808	10344506	1.1	1	
2700I13ABAEZMZ	3447539	10344506	1.33	1	
PUCK700	26053052				

19091269A

Process

Process ID : 1.35425346
 Process Time : 2019.09.19 21:34:04
 Process Stand : CONFIGURATION@SSCB

Sensor

Units

D1 : 0
 D2 : 1
 DFQ1 : 0
 DFQ2 : 0
 DT : 4.25
 DTG : 0
 Dens PCF : 0
 Density Meter Factor : 1
 FCF : 138.57
 FD : 0
 FFQ : 0
 FT : 4.5
 FTG : 0
 Flow PCP : 30
 Flow PCF : 0
 K1 : 4055.443
 K2 : 4227.622
 Mass Flow Meter Factor : 1
 Volume Flow Meter Factor : 1

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)

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

Faults

Frequency1 Fault Behavior : Upscale

Faults

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

Other

Calibration Process ID : 5.28037236
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 : 3741125
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

19091269A



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

10/8/2019

Dispenser Serial Number 19091269A

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: 3447539
Sensor Serial Number: 13285808
Flow Calibration Factor: 138.574.50
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

Product Code CNG050S290NCAAEEZZZ Serial ID 13285801 Order ID 10344506 Line 1.1 Item 2 Customer Tag 19091269B

Process ID : 5.28037446 Process Time : 2019.08.22 15:28:25 Process Stand : TSGCNG@SSCN:1 Stand Uncertainty : +/-0.030%

Fluid : H2O 100% Rate : 38.6 KG/MIN Pickoff : 1 Max Rate P/T : 46.43 PSIG/25.7 C

Status : PASS D1 : 0 D2 : 1 K1 : 4041.856 K2 : 4213.347 DT : 4.25 FD : 0 DTG : 0 DFQ1 : 0 DFQ2 : 0 FlowCal : 139.044.50 FFQ : 0 FTG : 0 DensCal : 04042042134.25 FCF : 139.04 FT : 4.5

Flow (%) 100.0 10.0 50.0 100.0 Meter Total (kg) 38.08469 3.794123 19.68986 39.52704 Reference Total (kg) 38.08618 3.79426 19.69616 39.52649 Error (%) -0.004 -0.004 -0.032 0.001 Specification (±%) 0.500 0.500 0.500 0.500

Flow (kg/min) 38.6 3.86 19.3 38.6

Flow (%) 100.0 10.0 50.0 100.0

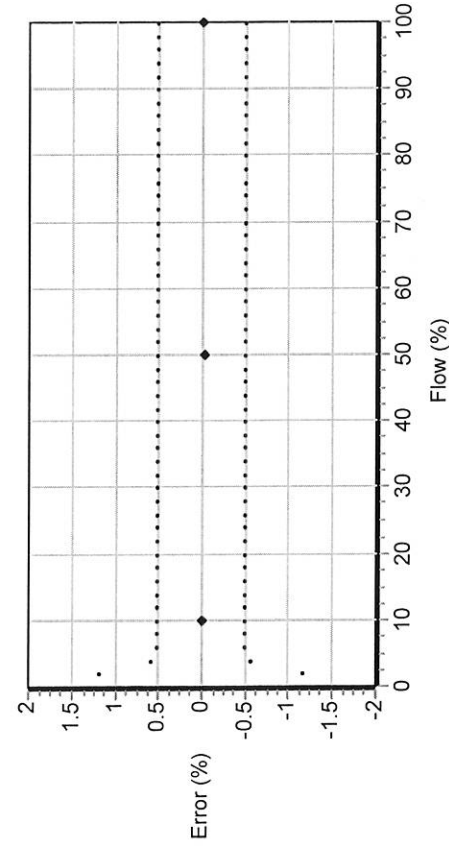
Meter Total (kg) 38.08469 3.794123 19.68986 39.52704

Reference Total (kg) 38.08618 3.79426 19.69616 39.52649

Error (%) -0.004 -0.004 -0.032 0.001

Specification (±%) 0.500 0.500 0.500 0.500

Process Detail



Results

WANG, TENGFEI Technician

Signature

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

Product Code	Serial ID	Order ID	Line	Item	Customer Tag
CNG050S290NCAAEZZZ	13285801	10344506	1.1	2	
2700I13ABAEZWZ	3448052	10344506	1.33	2	
PUCK700	26053045				

9091269B

Process

Process ID : 1.35425639
 Process Time : 2019.09.20 7:33:38
 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 : 139.04
 FD : 0
 FFQ : 0
 FT : 4.5
 FTG : 0
 Flow PCP : 30
 Flow PCF : 0
 K1 : 4041.856
 K2 : 4213.347
 Mass Flow Meter Factor : 1
 Volume Flow Meter Factor : 1

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)

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

Faults

Frequency1 Fault Behavior : Upscale

Faults

Frequency1 Fault Value : 15000
mA1 Fault Behavior : Downscale (Default)
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Other

Calibration Process ID : 5.28037446
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 : 6045764
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

19091269B



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Sensor Model Number: CNG095
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Flow Units: lb/min

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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
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Freq/Rate

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Frequency Cutoff: 0.2500 lb/min
Pulses per Unit: 1000.00000 per lb

Temperature

Temp Units: deg F