

Appendix C1

Flow Meter Calibration Datasheets



Instrument & Valve Services Co
12001 Technology Drive, M/S BN07
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October 12, 2015

Magnetic Flowmeter Flow Facility Calibration

Consistent with ISO 10474 3.1B

RMA Number: # 1443954 / Laurentide Controls

Customer PO Number: P467351973

Flowmeter Calibration Number: 0992905609755005

Model Number: 8705TSA080C1W0N0

Serial Number: 0231346

Tag Number:

Calibration Date: 9/22/15

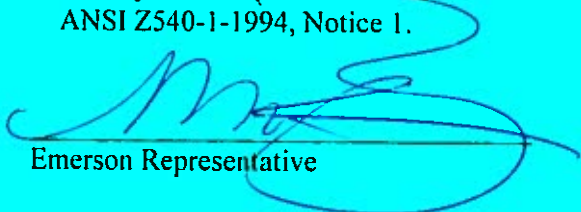
See Attached Data Sheet for Calibration Information

* The percent deviation from actual flowrate is calculated from data taken during flow testing with a nominal calibration number. It may not be possible to repeat the above values exactly due to variation in the conditions under which the flowmeter was tested.

Certification

This is to certify that the Magnetic Flowmeter System listed above meets the following requirements:

1. Meets applicable Rosemount Specifications.
2. Has successfully passed hydraulic calibration in the Rosemount Flow Facility.
3. Hydrostatic tested at 150% of rated static line pressure per the applicable Rosemount test Procedures.
4. Performs in accordance with the guaranteed accuracy specifications at reference conditions.
5. Measuring and test equipment used in the manufacture and inspection of the above system are directly traceable to the National Institute of Standards and Technology to meet the intent of ANSI Z540-1-1994, Notice 1.


Emerson Representative

Rosemount Production Flow Facility Calibration Data

12001 Technology Drive, Eden Prairie, MN 55344 USA

****FAIL****

Model number: **8705TSA080C1W0N0**

Serial Number: **0231346**

Reference K factor: **38.480**

Trace number: **399256901**

Frequency: **5Hz**



Calibration Date: **Sep 22, 2015**

Sales Order: **RMA1443954**

Left Calibration number: **09974068**

Right Calibration number: **09755005**

Comment: **AS FOUND**



Run #	Flow rate % FS ¹	Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m ³ /hr	Deviation % rate
1	102.0%	10.2	3.11	1590	361	-0.57%
2	102.0%	10.2	3.11	1590	361	-0.57%
3	102.0%	10.2	3.11	1590	361	-0.59%
4	12.8%	1.3	0.39	199	45.2	-1.45%
5	12.8%	1.3	0.39	199	45.2	-1.45%
6	12.6%	1.3	0.39	197	44.7	-1.39%
7	31.0%	3.1	0.95	484	110	-0.85%
8	31.0%	3.1	0.95	484	110	-0.84%
9	31.0%	3.1	0.95	484	110	-0.77%

Calibration conditions:

¹100% flow rate = 10 ft/sec (3.05 m/s) in schedule 40 pipe.

Water temperature = 69.8 °F (21.0 °C)

Water conductivity > 200 µMho

Rosemount Production Flow Facility Calibration Data
12001 Technology Drive, Eden Prairie, MN 55344 USA

Model number: **8705TSA080C1W0N0**

Serial Number: **0231346**

Trace Number: **399256901**

Sales Order: **1443954**

Calibration Date: **Sep 22, 2015**

Calibration Number: **0992905609755005**

Comments: **AS LEFT**

Run #	Flow rate % FS ¹	Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m ³ /hr	Deviation % rate
1	102.0%	10.2	3.11	1590	361	-0.03%
2	102.0%	10.2	3.11	1590	361	-0.04%
3	102.0%	10.2	3.11	1590	361	-0.03%
4	31.1%	3.1	0.95	485	110	0.03%
5	31.1%	3.1	0.95	485	110	0.08%
6	31.0%	3.1	0.95	484	110	0.01%
7	12.7%	1.3	0.39	198	45.0	-0.09%
8	12.6%	1.3	0.39	197	44.7	-0.07%
9	12.6%	1.3	0.38	196	44.5	0.00%

Calibration conditions:

Water temperature = 69.7 °F (21.0 °C) Water conductivity > 200 µMho

¹100% flow rate = 10 ft/sec (3.05 m/s) in schedule 40 pipe.

Measuring and test equipment used in the manufacture and inspection of the above flowmeter are directly traceable to the National Institute of Standards and Technology to meet the intent of ANSI Z540-1-1994.

Production Flow Facility Calibration Data

Ave. Miguel de Cervantes 111, Complejo Industrial Chihuahua, Chihuahua, Mexico 31109

Model number: **8705TSA040C1W0N0Q4**

Serial Number: **0292681**

Calibration Date: **Nov 12, 2015**

Trace Number: **1030232501**

Calibration Number: **0898805908940005**

Sales Order: **4412838**

Run #	Flow rate % FS ¹	Velocity ft/s	Velocity m/s	Flow rate US gpm	Flow rate m ³ /hr	Deviation % rate
1	100.1%	10.0	3.05	397	90.2	0.01%
2	100.1%	10.0	3.05	397	90.2	-0.05%
3	100.1%	10.0	3.05	397	90.2	-0.03%
4	31.5%	3.2	0.96	125	28.4	0.11%
5	31.5%	3.2	0.96	125	28.4	0.14%
6	31.5%	3.2	0.96	125	28.4	0.12%
7	11.2%	1.1	0.34	44.5	10.1	-0.04%
8	11.2%	1.1	0.34	44.4	10.1	-0.05%
9	11.2%	1.1	0.34	44.3	10.1	0.24%

Calibration conditions:

Water temperature = 75.5 °F (24.2 °C) Water conductivity > 200 µMho

¹100% flow rate = 10 ft/sec (3.05 m/s) in schedule 40 pipe.

Measuring and test equipment used in the manufacture and inspection of the above flowmeter are directly traceable to the National Institute of Standards and Technology to meet the intent of ANSI Z540-1-1994.

November 13, 2015

Emerson Process Management
F R Tecnologías de Flujo, S.A. de C.V.
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua, CHIH MEXICO 31136

Certificate of Calibration - Consistent with ISO 10474 3.1B or EN 10204 3.1

Customer Information Name: LAURENTIDE CONTROLS LTD Purchase Order: P928	Manufacturer Information Sales Order: 4412838 Line Number: 1
Device Information Device Type: Magnetic Flowmeter Model Number: 8705TSA040C1W0N0Q4 Serial Number: 0292681 Trace Number: 1030232501	Calibration Information Calibration Date: November 12, 2015 Calibration Number: 0898805908940005

Flow Sensor Calibration Test

Calibration Data - Velocity referenced to sch 40 pipe

Velocity (ft/s)	Velocity (m/s)	Flow Rate (US gpm)	Flow Rate (m ³ /hr)	Deviation % Rate
10.01	3.05	397.18	90.21	-0.03%
10.01	3.05	397.06	90.18	0.01%
10.00	3.05	396.94	90.15	-0.05%
3.16	0.96	125.35	28.47	0.12%
3.16	0.96	125.33	28.47	0.14%
3.16	0.96	125.31	28.46	0.11%
1.12	0.34	44.47	10.10	-0.04%
1.12	0.34	44.38	10.08	-0.05%
1.12	0.34	44.35	10.07	0.24%

This document certifies the Magnetic Flowmeter listed above meets the applicable Rosemount specifications. Measuring and test equipment used in the manufacture and inspection of the above flow sensor are traceable to the National Institute of Standards and Technology. The calibration system was designed to meet the intent of ANSI Z540-1-1994.



Oswaldo Orozco
Quality Manager