



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Meter Indicating Volume
Digital Ultrasonic Water Meter
Model: Axioma Qalcosonic W1 (See Table 1 for Model Designations, Meter Size, and Flow Rates)

Submitted By:

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Standard Features and Options

Standard Features:

- All Digital Display
- Unit(s): U.S. Gallons (gal) or Cubic Feet (ft³)
- Flow Direction Arrow is Molded Into Threaded Meter Body.
- Integrated Radio Transmitter (radio not tested)
- Maximum Operating Pressure: 232 psi
- Composite Casing
- Cold or Hot Water Certified
- All Positions Certified

Testing Notes: To insure proper testing, the test bench should be run for a minimum of 5 minutes or until all air bubbles have been eliminated from the system before testing meters. Additionally, a minimum back pressure of 30 psi should be maintained on the outflow of the water meter test bench during testing and installation. It is also recommended that one meter be tested at a time. If multiple meters are tested at one time an adequate distance between tested meters is required with at least 14 inches between each meter. As well, it is recommended that no more than 2 meters inline should be tested at a time. If the air indicator icon (figure 5) on the meter display is active while testing, then likely there is air entrained in the line. In this case, the test should be rerun but not until the bench has been cleared of air bubbles and the air indicator is inactive (figure 6). It is also recommended that any bypass valves should be closed. Lastly, it is recommended that the high flow tests be run for 4 to 5 minutes to achieve the best accuracy.

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of *Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices*. Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages. *Editorial changes, not affecting the type or metrological content, corrected this certificate.

Ivan Hankins
Chairman, NCWM, Inc.

Hal Prince
Chair, NTEP Committee
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iFlow Energy Solutions, Inc.
Meter Indicating Volume / Axioma Qalcosonic W1

Application: Certified for use as a domestic water meter in utility billing, commercial metering systems, and legal submetering applications. All positions for hot and cold.

Identification: All required identification information is located on the face of the water meter. Water flow direction is marked on the meter body. The required identification (ID) markings detailing the make, model, serial number, meter size, flow direction arrow and National Type Evaluation Program (NTEP) Certificate of Conformance (CC) number are labeled on the meter. Figures 1, 2, 3 and 4 show a meter with the required markings.

Table 1. Model Designations		
Meter Size (Inch)	Model Number (s)	Flow Rates (U.S. Gallons/Minute)
5/8" x 3/4"	Qalcosonic W1	0.15 to 25 U.S. Gallons/minute
0.75"	Qalcosonic W1	0.15 to 30 U.S. Gallons/minute
1"	Qalcosonic W1	0.3 to 50 U.S. Gallons/minute
1.5"	Qalcosonic W1	0.6 to 100 U.S. Gallons/minute

Sealing: No sealing is required. There are no metrological features that can be changed or altered. The meter is of a single piece design.

Operation: Ultrasonic flow meters measure the difference of the transit time of an ultrasonic sound wave beam propagating in and against the flow direction of time. This time difference is a measure for the average velocity of the fluid along the path of the ultrasonic beam. By using the absolute transit times, both the average fluid velocity and the speed of sound can be calculated. This meter is to be tested as "other than multi-jet" per the National Institute of Standards and Technology (NIST) Handbook 44 Specifications and Tolerances, Section 3.36. Water Meters, Table T.1. Accuracy Classes and Tolerances for Water Meters

Test Conditions: The emphasis of the evaluation was on the device design, marking requirements, accuracy, and repeatability of the meter. Two 1" cubic feet and two 1" gallon meters, and two 3/4" meters were submitted for evaluation on cold water (33 degrees F to 90 degrees F) and hot water (91 degrees F to 150 degrees F). The meters were tested gravimetrically for accuracy when mounted horizontally with the register facing up, inverted horizontal, and vertically in the up-stream and down-stream positions. After passing the initial testing at the flow rates specified in 2022 NIST Handbook 44, permanence tests were conducted after 204 000 gallons of water throughput was completed. All results were within specified tolerance and repeatability requirements.

Evaluated By: A. Katalinic (NCWM/NTEP)

Type Evaluation Criteria Used: Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices, 2022 Edition. NCWM Publication 14: Weighing Devices, 2021 Edition.

Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Information Reviewed By: D. Flocken (NCWM)



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Meter Indicating Volume / Axioma Qalcosonic W1

Example(s) of Device:



Figure 1: Register Face



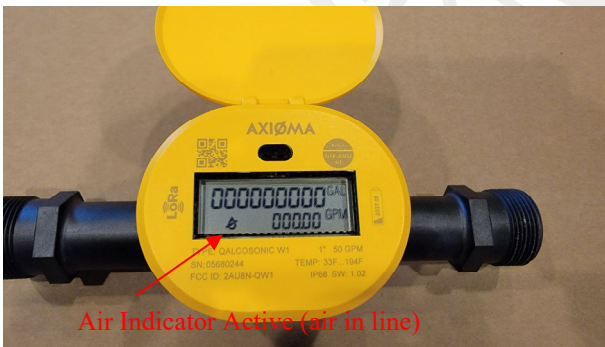
Figure 2: Side View



Figure 3: Flow Direction Arrow

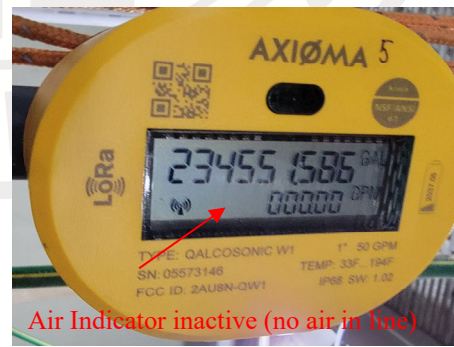


Figure 4: NTEP Stamp Placement



Air Indicator Active (air in line)

Figure 5: Air Indicator Icon (active)



Air Indicator inactive (no air in line)

Figure 6: Air Indicator Icon (inactive)