MUELLER

Aquaient™ Ultrasonic Water Meter

Test Procedure Guide

TABLE OF CONTENTS **PAGE**

⚠ WARNING:

1. Read and follow instructions carefully. Proper training and periodic review regarding the use of this equipment is essential to prevent possible serious injury and/or property damage. The instructions contained herein were developed for using this equipment on fittings manufactured by Mueller only, and may not be applicable for any other use.

2. DO NOT exceed the pressure ratings of any components or equipment. Exceeding the rated pressure may result in serious injury and/or property damage.

3. Safety goggles and other appropriate protective gear should be used. Failure to do so could result in serious injury.

F14670 06/23

AQUAIENT™ ULTRASONIC METER TEST PROCEDURE

REQUIRED FOR TEST PROCEDURE

To achieve the most accurate test data from the Aquaient™ Ultrasonic Water Meter, American Water Works Association (AWWA) directs that the proper water flow rates and run volumes are used to accomplish this task, as follows:

1. Install the Aquaient meter in the proper configuration for your application. See page 3 for AWWA approved testing standard.

2. A Calibrated Test Bench or Field Test Unit that meets AWWA standards. Assorted wrenches, screwdrivers, small spade, and pry bar based on test site location.

This list is not all inclusive and you may require specialized tools based on your installation requirements.

3. Clean rag for wiping hands, meters and tools.

4. Record all testing data including the model, size, serial number, test flow rates and test flow volumes from each Aquaient meter.

5. Record the starting totalizer and the ending totalizer from the LCD display with the math used to determine your accuracy calculation.

6. Record the calibrator multiplier used for the field test unit at each flow rate in the calculation of accuracy.

GENERAL TEST PROCEDURE

The following steps document the entire recommended test process from start to finish.

The Aquaient ultrasonic meter should always be tested per the AWWA M6 and C-715 standard recommendations. Before beginning a volumetric test, flush the Aquaient meter for a minimum of 100 gallons close to the maximum flow rate as possible to ensure that the meter flow lines and test system is free of air and that the meter tubing is filled with water. The initial test flow rate should begin with the high flow and then proceed to the mid and finally the low flow, according to AWWA.

Type I Meter flow rates are typically those used in typical residential applications where a positive displacement meter may have been installed previously. The emphasis of this testing is on starting flow and low flow accuracy where the purpose of this testing is the capture of gallons per-minute flow rates which are important in determining total usage and detecting small leaks and backflow occurrences.

Type II Meter flow rates are those typically associated with higher sustained flow rates in commercial/industrial applications where a high degree of accuracy is required across a broad range of flows. The emphasis of the testing is the mid to high range flow rates which generate significant revenue for utility customers while continuing to provide outstanding low flow capabilities for the capture of leaks and backflow occurrences. If maximum test rates cannot be achieved, run the high flow test at the highest test rate possible.

AQUAIENT™ ULTRASONIC METER TEST PROCEDURE

The following test flow rates are recommended for the 5/8 x 1/2" and 5/8 x 3/4" Aquaient meters.

RECOMMENDED TEST RATES PER AWWA C-715-18 STANDARD AND ADDENDUM TO AWWA MANUAL M6

	MAXIMUM RATE				INTERMEDIATE RATE				MINIMUM RATE			
METER SIZE	Flow Rate	Test		Accuracy Limit	Flow Rate	Test		Accuracy	Flow Rate	Test		Accuracy
inches	*gpm*	*gal*	*ft³*	%	*gpm*	*gal*	*ft³*	%	*gpm*	*gal*	*ft³*	%
5/8 x 1/2 and 5/8 x 3/4	15	100	10	98.5-101.5	0.4	10	1	98.5-101.5	0.13	10	1	95-105

1. Flush the Aquaient meter at the high flow rate for a minimum of 100 gallons or 10 CF to purge air from the line and to assure the meter tubing is completely full of water.

2. When two or more meters are being tested simultaneously in a single line, it will require at least five diameters of straight pipe between the outlet of one meter and the inlet of the next meter in line.

3. Wait for the empty pipe symbol to disappear before running any flow tests.

4. Ensure back pressure of at least 20 PSI off the last meter on the line.

5. Ensure meters are face up and level to the ground. Do not change orientation of the meter during the test.

6. Ensure water must flow in the direction of the engraved arrow on the brass tube and into the flow strainer.

7. Run the AWWA test flows for the high, mid and low flow to the required volume as indicated in the above chart.

Document all associated meter test data including date, time, meter model, size, test flow rates, test volumes for each rate.

8. Document all math used to establish accuracy including starting totalizer value, ending totalizer value, totalizerM difference from start to end of test, tester accuracy for each flow rate, and the final conversion from volume to accuracy percentage.

9. Store all test documentation for future reference.

For more information about Mueller or to view our full line of water products, please visit muellersystems.com or call Mueller customer service at 1.800.423.1323.

F14670 06/23

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