

**State of California**  
Department of Food and Agriculture  
Division of Measurement Standards

Certificate Number: 5415(a)-07  
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***California Type Evaluation Program***  
***Certificate of Approval***  
***for Weighing and Measuring Devices***

**For:**

Hot Water Meter  
Multi-Jet Domestic Style (140 °F Max)  
Models: 5/8" 140 °F, 3/4" 140 °F, and 1" 140 °F  
Sizes: 5/8", 3/4", and 1"

**Submitted by:**

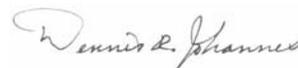
Utility Submeter Applications, Inc.  
5482 Complex Street, Suite 108  
San Diego, CA 92123-1125  
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Contact: Gary French

**Standard Features and Options**

- Sealed six wheel odometer type register
- US gallon or cubic foot unit of measure
- Bronze main case
- Magnetic drive register with an optional hinged lid
- Optional DIALOG® meter reading system and electrical output registers (functions not evaluated)
- Registers may have one or two fixed zeros
- External threaded spuds
- Cast flow direction arrow on discharge end of meter case

**Note:** Approved for use only when installed according to the manufacturer's instructions in a "**HORIZONTAL**" position.

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.



Effective Date: May 14, 2007

Dennis R. Johannes, Director

**Utility Submeter Applications, Inc.**  
**Hot Water Meter**  
**Models: 5/8" 140 °F, 3/4" 140 °F, and 1" 140 °F**

**Application:** Approved for use as a domestic hot water meter (140 °F max) in legal sub-metering installations. The meters can only when installed in a “**HORIZONTAL**” flow position with the register facing up. The flow direction indications are cast into the body of the meter.

**Identification:** Identification information is printed in red on the register face (see Fig. 3 on Page 3). The serial number is engraved on the discharge end of the body and on the optional hinged register lid, if equipped (see Fig. 1 and 2 on Page 3).

**Sealing:** The meter can be sealed with a wire security seal threaded through a hole under the threaded cap located over the adjusting screw and through a hole in the register retaining ring (see Fig. 1 and 2 on Page 3). The plastic seal must be broken off and a threaded cap with a hole must be removed in order to access the adjusting screw (located under the threaded cap with a hole).

**Operation:** This is a velocity type meter where in-flowing water, distributed by multiple jets, flows past an impeller in the measuring chamber, creating an impeller velocity directly proportional to water velocity. The meter’s register interprets the velocity into total flow indicated in a volumetric unit of measure.

**Test Conditions:** This certificate supersedes Certificate of Approval Number 5415-04 and is issued to verify that the Master Meter Model MM meter body style is the same as the MJ body style that was originally tested on Certificate of Approval Number 5415-04. As a result, a meter body with no marking is from the Model MJ style whereas a meter body with engraved markings (e.g. Model No. MM3, MM4, or MM5) are from the Model MM body style. Documents and letters provided by the manufacturer cover this change. Also, the register may have one or two fixed zeros depending on the meter size and unit of measure. No testing was done. Previous test conditions are listed below for reference.

**Certificate of Approval Number 5415-04:** Three meter Model 3/4" 140 °F water meters were initially submitted for evaluation. The emphasis of the evaluation was on device design, marking requirements, accuracy, and repeatability of the meter with both hot (140 °F maximum) and cold (80 °F maximum) water. The meters were mounted in line with each other on a water meter test bench in a lab at a university research facility and tested three times each at maximum, intermediate, and minimum flow rates using hot (140 °F maximum) water. The tests were then repeated using cold water (80 °F maximum). After successful initial testing, a permanence test was conducted which consisted of re-circulating in excess of 205 000 gallons of hot (140 °F maximum) water through the meters. All tests were then repeated.

Results of the evaluation indicate the devices comply with applicable requirements.

**Type Evaluation Criteria Used:** Title 4, California Code of Regulations, 2007 Edition

**Tested By:** Joe Raspino (CA) 5415-04

**Updated By:** John Roach (CA)

**Utility Submeter Applications, Inc.  
Hot Water Meter  
Models: 5/8" 140 °F, 3/4" 140 °F, and 1" 140 °F**

