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

Certificate Number: 5111(a)-03

California Type Evaluation Program
Certificate of Approval
for Weighing and Measuring Devices

For:

Multi-Jet Water Meter
Model: FAM Series
Size: 5/8" x 3/4" and 3/4"
Minimum Increment: See Table Below

Submitted by:

Master Meter
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Standard Features and Options

Water meter components: Measurement register with lens cover
Measuring chamber
Threaded pipe connection (5/8" x 3/4" or 3/4") in unleaded brass
NOTE: All components listed above make up the "water meter as a whole"

Unit of measure: Gallons or cubic feet (see table below)
Magnetic drive
Plastic and unleaded brass
Pulse outputs were not evaluated

Registers	Description	Unit of Measure	Minimum Increment
FAM 5/8" or FAM 3/4" SM	Three dial register with or without optional electrical output	Gallon Cubic Feet	0.005 gal 0.0005 ft^3
DIALOG	Single dial register without 3G option	Gallon Cubic Feet	0.1gal 0.01 ft^3
DIALOG 3G BL	Single dial register with a wireless RF option (3G)	Gallon Cubic Feet	0.1 gal 0.01 ft^3

NOTE: Approved for use in "**Horizontal**" or "**Vertical**" flow positions. The dial face may be rotated and must be turned to face upward in both flow positions.

These devices are to be installed where they are protected from excessive heat and freezing conditions.

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: June 6, 2003

Mike Cleary, Director

Master Meter
Multi-Jet Water Meter
Model: FAM Series

Application: Approved for use as a domestic cold water meter only when installed in a "**Horizontal**" or "**Vertical**" flow position. The flow direction indications are cast into the single pipe connector to the main case.

NOTE: Written installation instructions shall be included with each meter. Additionally, field installations should be verified according to the manufacturer's installation requirements.

Identification: The manufacturer's name and model designation are silk-screened on the register dial face. The serial number prefaced with "S/N" and model numbers prefaced with "Model" are permanently located on the measuring chamber.

Sealing: The water meter can be sealed with a wire security seal threaded through a drilled head bolt on the register locking ring and a hole on the bottom retainer plate underneath the measuring chamber. Calibration components are mounted in the measuring chamber. Additionally, the water meter can be sealed with a wire security seal threaded through a hole on the pipe supply (provided by the manufacturer) assembly to prevent removing the meter.

Operation: The water meter utilizes a multi-jet impeller type measuring element, a magnetically driven register, a measuring chamber connection, and a single pipe connector with external thread. The multi-jet measuring element converts flow velocity into a volumetric registration in gallons or cubic feet. Water flow should be free of foreign material that may become lodged in the meter's inlet screen and affect its accuracy. Additionally, the water meter may be equipped with an optional pulse output or radio reading that may be used for reference only. The optional pulse output or radio read functions were not evaluated.

Test Conditions: This Certificate supersedes Certificate of Approval Number 5111-00 and is issued to include the 3/4" meter and DIALOG 3G BL register. Several tests were conducted on accuracy and repeatability of the meter and the DIALOG 3G BL register. Previous test conditions are listed below for reference.

Certificate of Approval Number 5111-00: The Model FAM and DIALOG FAM water meters were submitted for evaluation. The emphasis of the evaluation was on the device design, marking requirements, and performance. Three devices in each model were randomly drawn and were tested with normal, intermediate, and minimum flow rates. After a successful initial flow rate test, a permanence test was conducted which consisted of approximately 160 000 gallons of throughput (recirculation) over a 60 day period. The meters were retested at normal, intermediate, and minimum flow rates.

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

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2003 Edition

Tested By: Samuel Chan (CA) and Dan Reiswig (CA)

Updated By: John Roach (CA)