

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

Certificate Number: 4292(d)-12
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California Type Evaluation Program
Certificate of Approval
for Weighing and Measuring Devices

For:

Domestic Cold-Water Meter
Models: Trident 10 and T-10

<u>Sizes</u>	<u>Max. Flow Rate</u>
5/8"	20 gpm
5/8" x 3/4"	20 gpm
3/4"	30 gpm
1"	50 gpm
1-1/2"	100 gpm
2"	160 gpm

Submitted by:

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Standard Features and Options

Bronze case
Nutating disc
Sealed register with magnetic drive
Direct reading register with low flow indicator
Registers in gallons or cubic feet
Maximum operating pressure 150 PSI

Register models:

E-Coder - Liquid Crystal Display (LCD) display register
E-Coder R900i LCD display register with integrated RF (RF not evaluated)
ProRead Automatic Reading and Billing (ARB) encoder register with low flow indicator (ARB communication link was not evaluated).

NOTE: The American Water Works Association cautions against installing cold-water meters in such locations where the line temperature consistently exceeds 80 °F (27 °C). These devices are to be installed where they are protected from excessive heat and freezing conditions.

Approved for use in "Horizontal" or "Vertical" flow positions.

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 15, 2012

Kristin J. Macey, Director

Neptune Technology Group Inc.
Domestic Cold-Water Meter / Models: Trident 10 and T-10

Application: Approved for use as a domestic cold-water meter in legal sub-metering applications.

Identification: The serial number is prefaced with “S/N” or “SN” engraved on the inlet or outlet of the meter body. The flow direction indications are cast into the outlet of the meter body. The Neptune model number T-10 prefaced with “Model NO” and model size are on the register face.

Sealing: The register is secured to the main case via a tamper proof seal pin. All meters are equipped with at least one drilled head bolt that secures the bottom cap to the meter.

Test Conditions: This certificate supersedes Certificate of Approval Number 4292(c)-12 and is issued to ProRead ARB encoder register. No performance tests were conducted. Previous test conditions are listed below for reference.

Certificate of Approval Number 4292(c)-12: This certificate supersedes Certificate of Approval Number 4292(b)-11 and is issued to add E-Coder LCD display register and an E-Coder R900i LCD display register with integrated RF. Two 5/8” x 3/4” meters with cubic foot and gallon registers were submitted and tested for accuracy. Permanence tests were also conducted after more than 200,000 gallons of throughput was completed. Previous test conditions are listed below for reference.

Certificate of Approval Number 4292(b)-11: This certificate superseded Certificate of Approval Number 4292(a)-05 and is issued to add a lower profile meter body for installations in smaller locations. Three 5/8” x 3/4” meters with the lower profile meter body and cubic foot registers were submitted and tested for accuracy. No meter performance tests were conducted for this update. Previous test conditions are listed below for reference.

Certificate of Approval Number 4292(a)-05: This certificate superseded Certificate of Approval Number 4292-96 and was issued to change the manufacturer’s name from Schlumberger Industries to Neptune Technology Group. The meter model number will remain the same. Provisions for sealing and current marking requirements were reviewed on a Neptune Model T-10 water meter. No meter performance tests were conducted for this update. Previous test conditions are listed below for reference.

Certificate of Approval Number 4292-96: This certificate superseded Certificate of Approval Number 2773(a)-86 issued to Schlumberger Industries for the Neptune Model Trident 10 meter as well as the new T-10 model which is the same model as the original Trident 10 model.. The model number was changed after Neptune Water Meter Company was purchased by Schlumberger Industries. This certificate is issued based upon information supplied by Schlumberger Industries stating that the Neptune Model Trident 10 meter is the same as the Model T-10 meter. No new testing was performed.

Certificate of Approval Number 3791-92: The ARB system was submitted for type evaluation installed on a Neptune Model T-10 water meter (Certificate of Approval Number 2773(a)-86). A joint review of the system components by the National Institute of Standards and Technology and the California Division of Measurement Standards was conducted to evaluate specification compliance and to determine which point of indication or recorded representation should be considered adequate in expressing the final registration value. The “ProRead” register indication (analog) shall represent the final unit of measure for the system. Accessibility to the register for a direct reading (analog) shall be provided when necessary.

Certificate of Approval Number 2773(a)-86: This certificate superseded Certificate of Approval Number 2773-86 issued to add a 5/8” meter and to Neptune Water Meter Company for the Neptune Model Trident 10 meter.

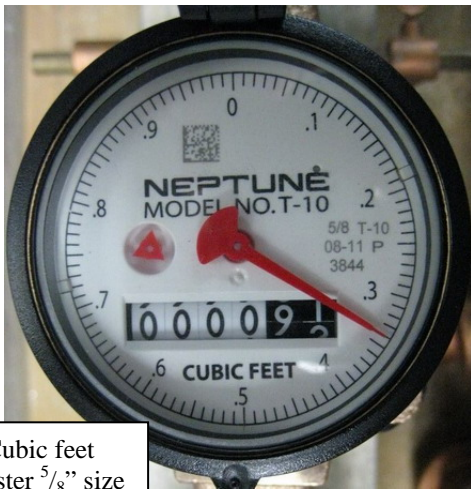
Certificate of Approval Number 2773-86: The model Trident 10 sizes 5/8”x3/4” through 2” were submitted for evaluation. The emphasis of the evaluation was on the device design, marking requirements, and performance.

**Neptune Technology Group Inc.
Domestic Cold-Water Meter / Models: Trident 10 and T-10**

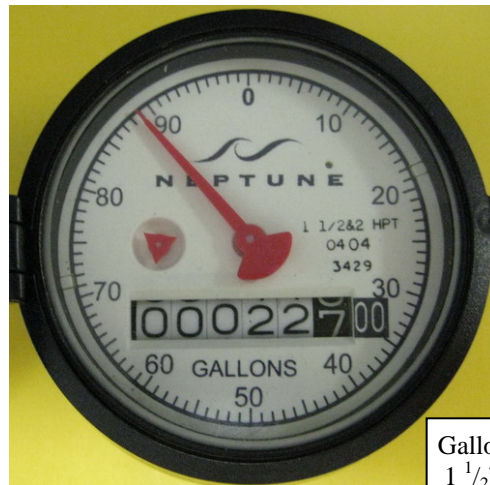
Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2012 Edition.

Tested By: R. Malloy (CA) 2773-86, 2773(a)-86, J. Roach (CA) 4292(b)-11, 4292(c)-12

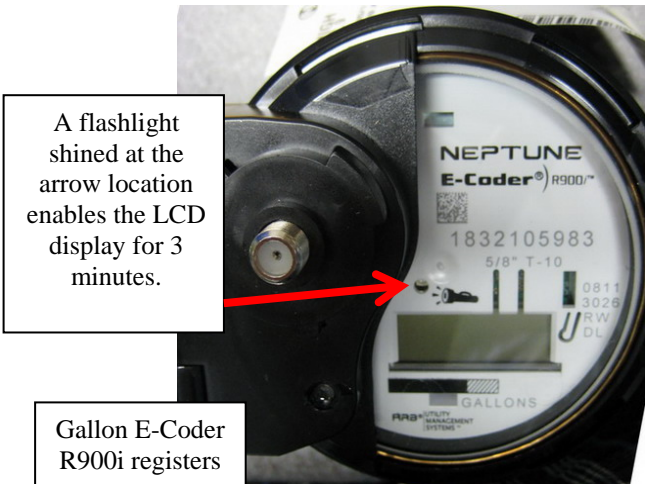
Updated: T. Michel (CA) 4292-96, S. Munoz (CA) 4292(a)-05, J. Roach (CA) 4292(d)-12



Cubic feet register $\frac{5}{8}$ " size

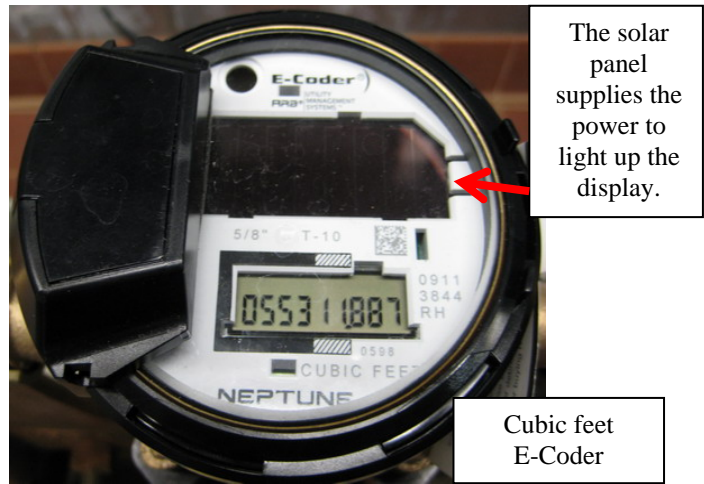


Gallons register 1 $\frac{1}{2}$ " - 2" size



A flashlight shined at the arrow location enables the LCD display for 3 minutes.

Gallon E-Coder R900i registers



The solar panel supplies the power to light up the display.

Cubic feet E-Coder

Neptune Technology Group Inc.
Domestic Cold-Water Meter / Models: Trident 10 and T-10



Cubic feet
PreoRead register



Gallons
ProRead register



Photograph of the complete T-10
lower profile meter body.