

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

Certificate Number: 5477(a)-09
 Page 1 of 3

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

For:
 Electronic Watt-Hour Meter
 Models: EE-X120X001-X-XXX
 Generic Name: Epoxy Encapsulated or EE Mini Meter
 Voltage Rating: 120/208/240 VAC
 Class: 100 or 200 (100 or 200 Amps. Max.)
 TA: 15 or 30 Test Amperes

Submitted by:
 Integrated Metering Systems, Inc.
 6741 102nd Avenue North, Suite 27
 Pinellas Park, FL 33782
 Tel: (727) 546-3594
 Fax: (727) 541-4892
 Contact: Charlie Wilde
 Internet: www.imsmeters.com

Standard Features and Options

Model Designation:

EE-	X	120	X001	-X	-XXX
EE= epoxy encapsulated	<u>Element</u> D = dual element (3-wire) S = single element (2-wire)	L1 to neutral is 120 VAC L1 to L2 is 208/240 VAC	<u>Current Transformer Ratio</u> 1001 = 100:0.1 Amps 2001 = 200:0.1 Amps	<u>Kh Factor</u> T = 100 Blank = 1000	<u>Indicating Element</u> SCC = self contained indicating element Blank = requires an external indicating element

Current Transformers (CT's) Type Designation: (See Fig. 1 on Page 3 for examples)

CT	X001	24	XX	-A
EE= epoxy encapsulated	<u>Current Transformer Ratio</u> 1001 = 100:0.1 Amps 2001 = 200:0.1 Amps	Accuracy Class 0.3	BK = black and white RD = red and white BL = blue and white	Blank = old CT model A = new CT model

External Indicating Elements: (Examples on the bottom of Page 2)

12VDC analog indicating element
 Curtis Type 703ZR001N1248D2060A LCD (12 VDC liquid crystal display (LCD) indoor/outdoor use)

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.



Edmund E. Williams, Director

Effective Date: January 5, 2009

Integrated Metering Systems, Inc.
Electronic Watt-Hour Meter
Model: EE-X120X001-X-XXX

Application: For use in legally sub-metered service systems.

Identification: The watt-hour meter identification label is applied to the face of the meter. The CT label is applied to the side of each CT. Note: Ensure the CT ratio and the meter CT ratio match.

Sealing: The Epoxy Encapsulated (EE) Mini Meter model has a factory and after test sealing provision.

- **Factory Provision:** The manufacturer's supplied ID label is secured with two adhesive tamper evident security seals (factory seals) and epoxy cement covers all four of the label mounting screw heads (see Fig. 2). This prevents access to two metrological adjustable components located under the plastic ID label.

- **Testing Provision:** The hard clear plastic meter case cover and the black case have two drilled holes for two wire security seals on both sides (see Fig.3).

Note: If the CT wires have been spliced to increase the length of the wire, additional sealing provisions are required for each wire connection for potential evidence of tampering. In addition, if multiple meters are installed in a box and the CT wire length has been increased; all wire connections shall be separately sealed.

Operation: The "POWER" LED is illuminated whenever line voltage is present. The "LOAD" LED provides a visual display of KWh usage, with a pulse rate (Kt) of 10 (i.e., 5 watt-hours on, 5 watt-hours off). The load LED will not change states unless a load is applied.

The terminals labeled "L1 and N" are the AC voltage supply terminals for 120 VAC. The terminals labeled "CT1 (x1 and x2)" are the CT terminals for a single element (2-wire meter). The terminals labeled "L2 and CT2 (x1 and x2)" are used for the 208/240 VAC supply and dual element (3-wire meter).

Test Conditions: This certificate supersedes Certificate of Approval Number 5477-06 and is issued to add the ability to increase the length of CT wires to a maximum of 500 feet and add a class 100, TA 15 meter and 100: 0.1 CT. Class 100 and 200 meters were submitted for testing and were subjected to testing with and without an extra 500 feet for the CT's at 1.5 to 30 Amps. Also evaluated was the additional sealing provision necessary for increasing the wire length of the CT connections.

Certificate of Approval Number 5477-06: Three Epoxy Encapsulated (EE) Mini Meters with two CT models (CT200124XX and CT200124XX-A) as well as five indicating elements were submitted for evaluation. The meters were tested at the Division of Measurement Standards lab. The meters were subjected to a combined total of over 90 tests from 3 amps to 60 amps at both unity and 0.5 power factors. This meter is metrologically the same as the Mini Meter series from Certificate of Approval Number 5361(a)-06 and has been through permanence on that certificate. Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2008 Edition

Tested By: John Roach 5361-03; Sonia Munoz and John Roach 5477-06; John Roach 5477(a)-08



Curtis LCD
indicating element

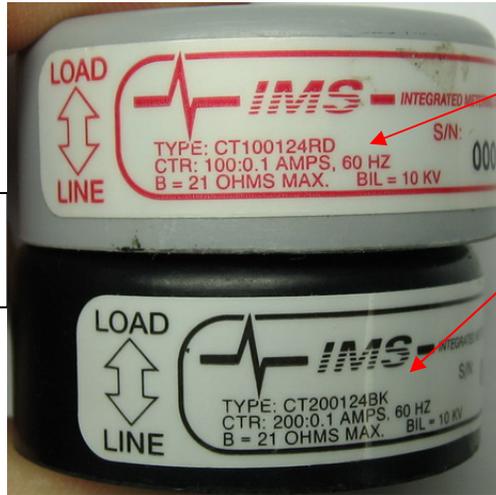


Typical 12VDC analog
indicating element
Kh = 100 wh



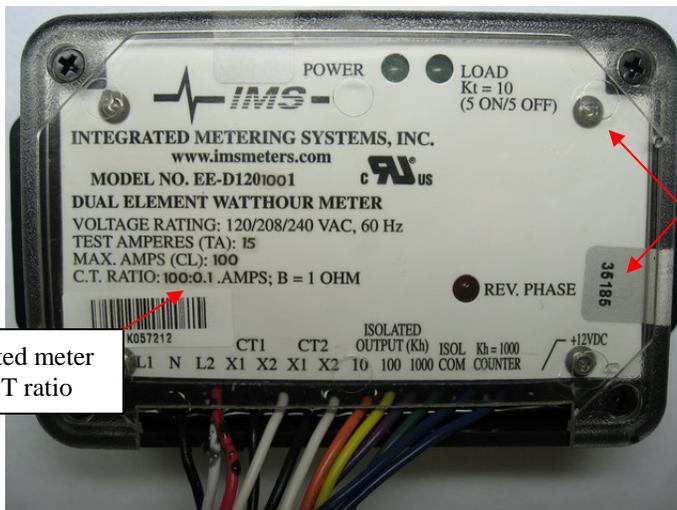
Typical 12VDC analog
indicating element
Kh = 1 Kwh

Integrated Metering Systems, Inc.
Electronic Watt-Hour Meter
Models: EE-X120X001-X-XXX



(Fig. 1)
CT's showing two different CT ratios

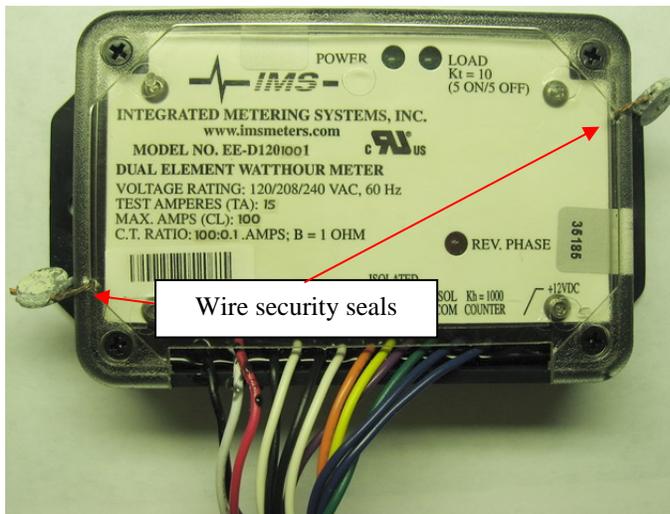
Insure the same CT ratio goes to the correct listed meter CT ratio



(Fig. 2)
Typical EE meter showing factory sealing provisions

Two adhesive tamper evident security seals (factory seals) and epoxy cement covers all four of the label mounting screw heads

Listed meter CT ratio



Wire security seals

(Fig. 3)
Typical EE meter showing the after testing sealing provisions

The hard clear plastic meter case cover and the black case have two drilled holes for two wire security seals on both sides