California Type Evaluation Program
Certificate of Approval
Weighing and Measuring Devices

For:
Watt-Hour Meter
Solid State Current Transformer based meter
Model: Gateway

Voltage Rating: 120/208/240/277/480 VAC
Class (CL): 100, 200, or 400 (max. amps)
Test Amps (TA): 30 amps
Test Constant (Kt): 1 Wh or 0.001 kWh

Submitted By:
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Standard Features and Options

Standard Features:

- Internal scrolling indicator (register): Liquid Crystal Display (LCD), 1.000 kWh register
- External solid core Current Transformers (CTs). See the “Identification” section for models.
- TRIACTA Model 9448 External Pulse Comparator Box. This must be supplied to the local weights and measures test facility and is required to perform accuracy tests on the meter specific to the California Code of Regulations.

Options:

- The meters are configurable to Meter Classes (CL); CL100, CL 200, and CL 400
- The meters are configurable to a voltage of 120/208/240/277/480 VAC
- The meters can be configured with a Potential Transformer (PT) module for 480 VAC only This is an optional assembly added to provide 480 VAC DELTA service voltage connection with a wire security provision. PT module will be a 4:1 ratio and this will alter the kt test constant to become an indication of 4 Wh
- The meters deploy a standalone 12 pair CT cable on up to 4 slots on with an integrated shorting termination which can be exposed bare screw terminals or plastic over molded cable

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable 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.

Kristin Macey

Kristin Macey, Director
Effective Date: November 10, 2021

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Application: For use as a multi-tenant watthour metering system with a scrolling register in legal sub metered electric service applications.

Identification: The required meter ID information is on the face of the meter case (***Figure 1.***). The meter can be configured for different service types that require different numbers of elements per each meter configuration. This supports random mixes of single, dual, or triple element meters. The CT ratio for the CL100 is 2000:1, for the CL200 the CT ratio is 2500:1, and for the CL400 the CT Ratio is 5000:1. This ID will only state the information pertinent for the specific customer service that it was configured and sealed for.

The external CT's identification is on each CT (***Figure 2.***). The three certified CT models are Triacta MOD: 908-314-01, Triacta MOD: 908-315-01, and Leviton Model: CDW0X-Y1Z.

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MODEL:	GATEWAY	
No. OF CCTs	**CONFIGURATION**	**VREF**
15-22	1EL	1
5-10, 14	2EL	1
1-4	3EL	1
11-13	2EL	2

VREFS
VREF 1: 120V
VREF 2: 277V

FREQUENCY:	60 Hz
Temperature Range:	-20°C - +70°C
RATED VOLTAGE/PT RATING:	120VAC/208VAC/240VAC/277VAC
Kh (Kt):	1 Wh ☐
	480VAC (DELTA)
Kh (Kt) 480VAC:	4 Wh ☐
PT RATIO 480VAC DELTA:	4:1 ☐
CLASS (CL):	CL:200 ☐ CL:400 ☐ CL:100 ☐
CT RATIO:	200A = 2000:1 ☐
	200A = 2500:1 ☐
	400A = 5000:1 ☐
TEST AMPS (TA):	30
CALIFORNIA CTEP No.:	xxxx
S/N:	0218350108

Figure 1. Working drawing example on the meter ID.

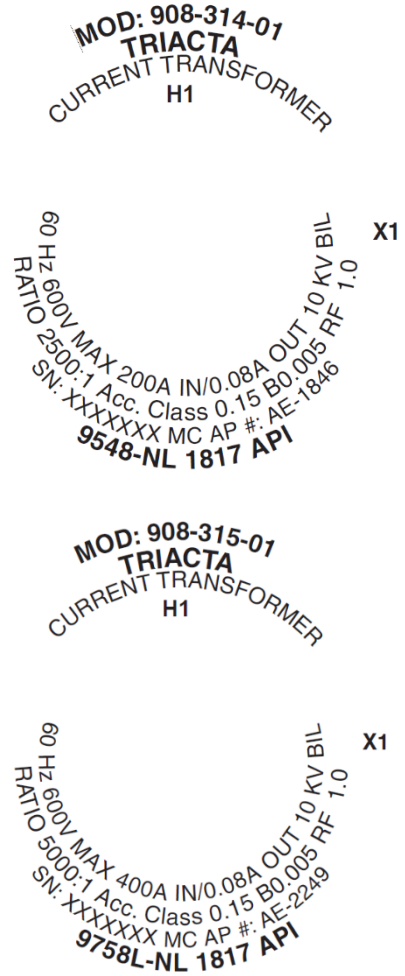

Figure 2. Working drawings of both examples CT ID.

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Sealing: The meters have two wire security sealing provisions to prevent undetected access to the terminal blocks and adjustment mechanism. The terminal blocks sealing provision is a Category 1 method of sealing, and the adjustment mechanism sealing provision is a Category 2 method of sealing.

The Category 1 sealing provision prevents undetected access to the system's main case cover where the wire terminal blocks and CT cable connections are located. See ***Figure 3.***

Figure 3. Category 1 wire terminal block sealing location example.

The Category 2 adjustment mechanism sealing provision prevents undetected access to the calibration switch located on the Printed Circuit Board (PCB) beneath the PCB cover by threading a wire security seal through the PCB cover (***Figure 4.)***. ***Figure 5.*** shows the PCB cover removed. The red arrow points to the calibration switch that must be placed in the "UNLOCKED" position as displayed on the register. When the calibration switch is in the "UNLOCKED" position, metrological related settings can be changed via a computer with an Ethernet connection.

Figure 4. Category 2 wire terminal block sealing location with red arrow pointing to the wire security location.

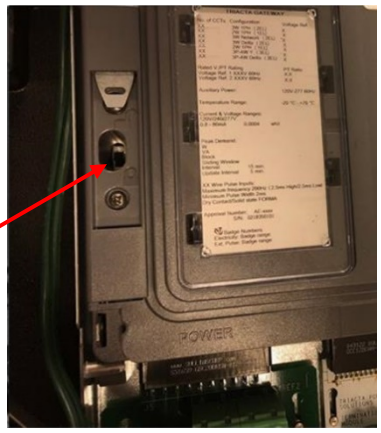

Figure 5. Red arrow points to the switch.

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The internal scrolling LCD indicator will display “UNLOCKED” in this state (***Figure 6.***). When the calibration switch is in the “OFF” or “LOCKED-OUT” position, the meter is in the normal usage mode. Ensure that the unlocked statement is not shown prior to sealing.

Figure 6. Showing an example of the UNLOCKED condition that needs to change prior to sealing.

Operation: The device has an internal register which can be navigated to display each meter indication. By pressing the left or right arrows, the device will scroll the indicator to a particular meter customer meter register (Refer to note on page 1 for which meter goes to which tenant). An external 9448 pulse box must be utilized for testing and shall be provided by the manufacturer to the weights and measures official(s) responsible for verifying meter performance. The pulse box must be attached to the meter with a ribbon cable (***Figure 7.***). The ribbon cable from the pulse box connects to the JH1 connection on the meter’s PCB. The pulse box has 20 red pulsing LEDs that flash on and off when a load is applied to a specific meter or CT. The red LEDs illuminate, then flash off momentarily, indicating 0.001 kWh or 1 watt-hour per flash. The CTs line and load are direction sensitive. In addition, the arrow on the CT points toward the load. The external pulse box must be disconnected when testing is completed.

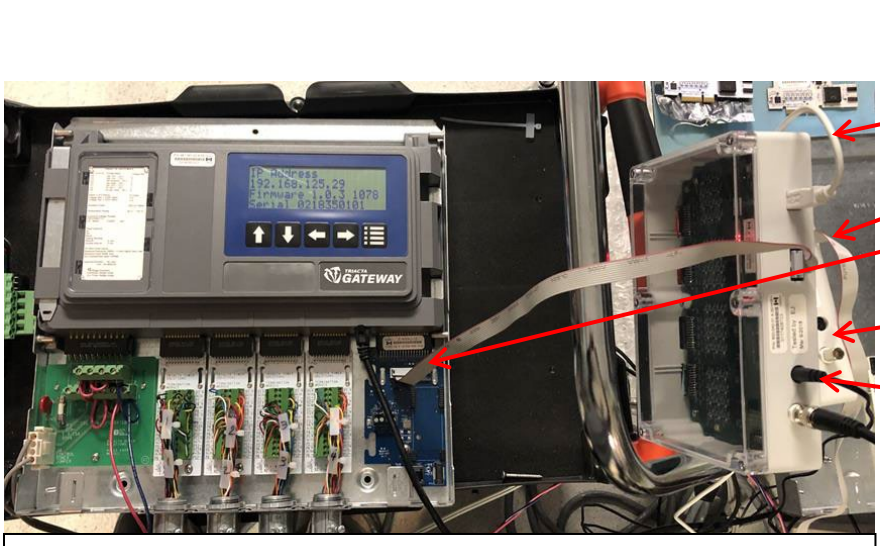

Figure 7. Showing all the required connections for testing.

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Note: A meter identification key must be posted by the meter's indicator to identify each meter to the tenant it serves.

Test Conditions: The emphasis of the type evaluation was on marking, sealing, design, and performance from 3.0 amps to 30 amps at both unity and 0.5 power factors. At total of twenty-four CL200 and CL400 meters were subjected to 120VAC to 480 VAC tests. Similar tests were repeated after a throughput of 200 kWh over 29 days.

Evaluated By: J. Roach (CA)

Type Evaluation Criteria Used: *California Code of Regulations, Title 4, Division 9, Chapter 1, Article 1. General Code 1.10. and Article 2.2 Watthour Meter, 2021 Edition*

Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Example(s) of the Device: Installation example showing Model *GATEWAY™and PT Module.*

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