California Type Evaluation Program
Certificate of Approval
Weighing and Measuring Devices

For:
Watt-Hour Meters
Multi-Point Metering System

Model: PXMP-MB and PXMP-MB-AB Series

Voltage Rating: 120/208/240/277/480 VAC
Class (CL): 100, 200, 400 and CL10 (Instrument Rated)
TA: 15, 30, 60 Amps, and 2.5
Watt-Hour Test Constant (Kt): 1, 2, 4 and 0.1 Wh/Pulse

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Standard Features and Options

Standard Features:

- Built-in Touch Screen Register
- Category 1 Wire Security Sealing Provision for the "Terminal Blocks" (Installation) and Category 2 Wire Security Provisions for "Undetected Access to Adjustments"

Options:

- Configurable to 1, 2 or 3 Elements (Current Transformers)
- Installed in NEMA-Type, Switchboard or Panelboard Style Enclosures
  The PXMP series meter includes a Meter Base, Meter Modules, Current Sensors and a Touch Screen display. The meter base includes 10 module slots and can be equipped with up to 10 meter modules for multi-circuit metering applications. Each meter module is equipped with six (6) current channels.

Current Transformers (CT):

- Eaton Model PXMP-CS125, Accuracy Class 0.3, CTR 125:0.1A
- Eaton Model PXMP-CS250, Accuracy Class 0.3, CTR 250:0.1A
- Eaton Model PXMP-CS400, Accuracy Class 0.3, CTR 400:0.1A
- Eaton Model CS005, Accuracy Class 0.3, CTR 10:0.1A with Five (5) Amp Rated Secondary Current

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 J. Macey, Director
Effective Date: September 22, 2016

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Watt-hour Meter / PXMP-MB Series

Application: For use as a watt-hour metering system in legal sub-metered electric service applications.

Identification: The main meter identification (ID) information is on the face of the meter panel door (Figure 1). A supplemental make, model and serial number is also on the meter base and meter modules (Figure 2). The external PXMP current transformer's (CT) ID information is located on each current sensor or the sensor wire connection (See Figure 3).

Figure 1. Meter Module

Figure 2. Meter Base

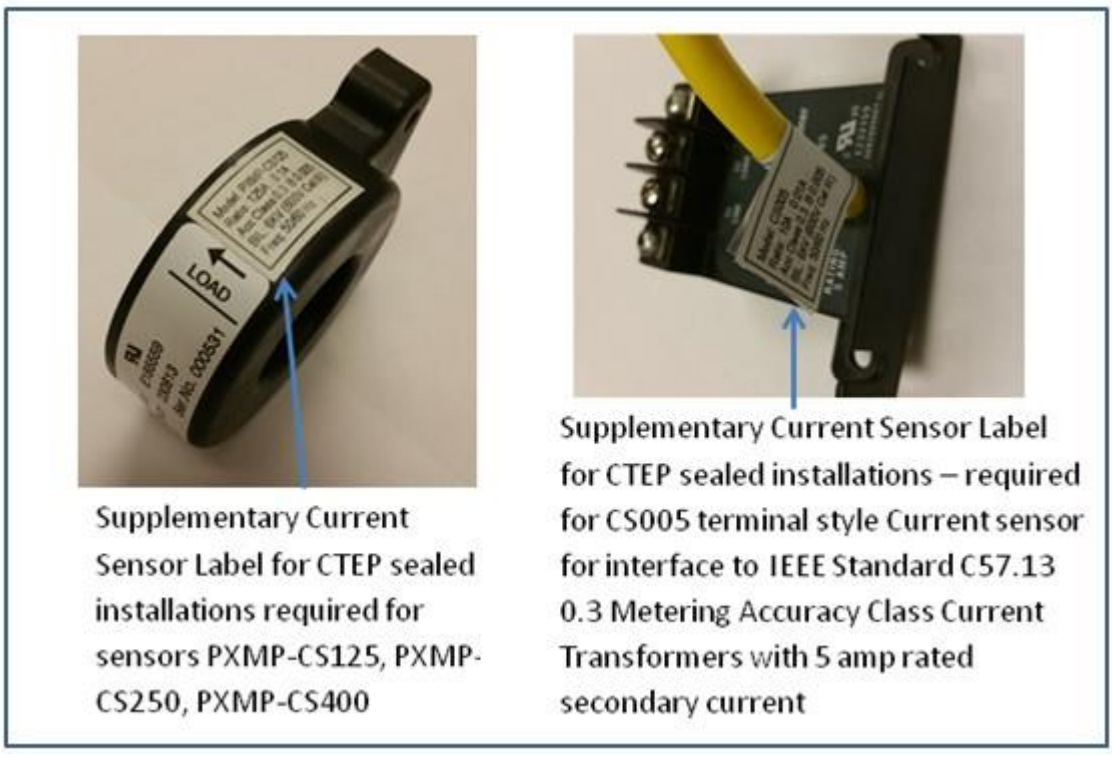

Figure 3. CT Examples with Labeling

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PXMP Series Hardware Compatibility Matrix		
Meter Base	**Meter Modules**	**Current Sensors**
PXMP-MB Supports up to 10 Standard Meter Modules	PXMP-MM100MA Supports Six (6) 100mA Sensors	PXMP-CS125, PXMP-CS250, PXMP-CS400 (100mA Output)
	PXMP-MM10MA Supports Six (6) 10mA sensors	CS005 (10mA Output)
PXMP-MB-AB Supports up to 10 AB Meter Modules	PXMP-MM100MA-AB Supports Six (6) 100mA Sensors	PXMP-CS125, PXMP-CS250, PXMP-CS400 (100mA Output)
	PXMP-MM10MA-AB Supports Six (6) 10mA Sensors	CS005 (10mA Output)

Sealing: The PXMP system has a Category 1 sealing provision for the wire terminals blocks, and a Category 2 sealing provision for the calibration and configuration parameters. The Category 1 system's main panelboard cover is secured by a wire security seal preventing undetected access to the system's wire terminal blocks (Figure 4). The Category 2 sealing provision is a wire security seal preventing undetected access to the calibration/configuration switch. Once the PXMP meter is ready for sealing, locate the mode switch door located on the meter base as shown in Figure 5. Verify the dual in-line package (DIP) switches are set to the Left/Right/Right positions as shown in Figure 6.

Figure 4. Category 1 Wire Security Provision

Figure 5. Category 2 Wire Security Provision

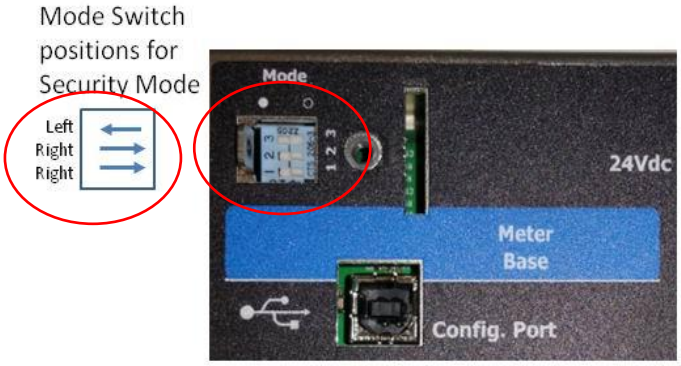

Figure 6. Meter Base Showing DIP Switch Security Mode

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When looking at the meter base as shown in Figure 6, DIP switches 1/2/3 are not configured to be sealed when the display shows the following statement: "Switches set for config. Do not seal the meter" (Figure 7). This prevents any configuration changes. The meter can be sealed when the switches are correctly set (Figure 8).

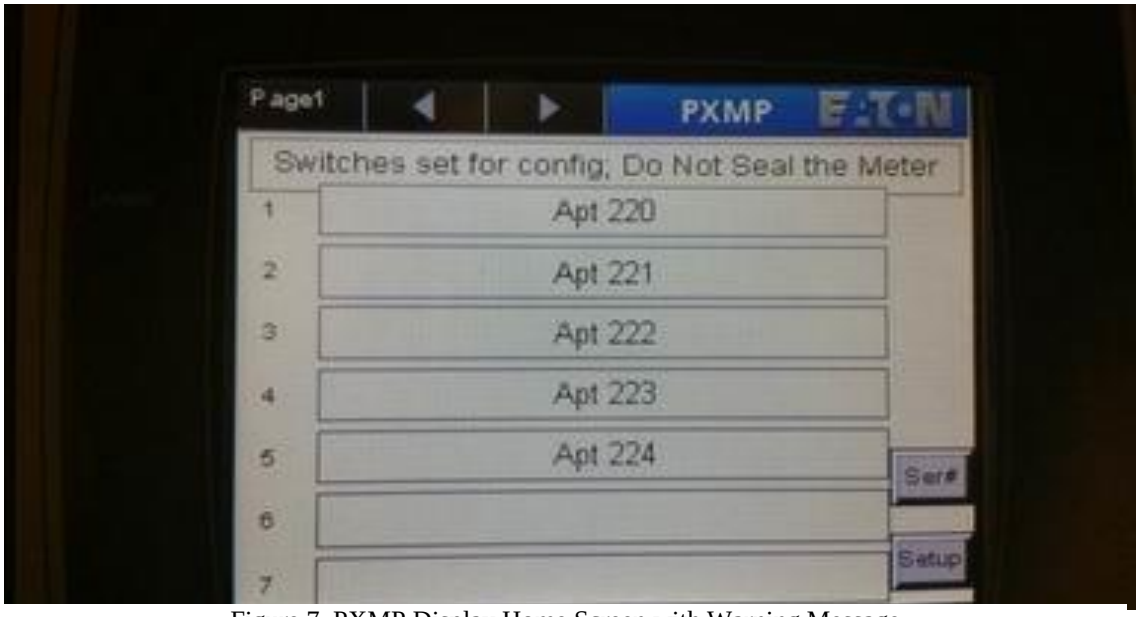

Figure 7. PXMP Display Home Screen with Warning Message

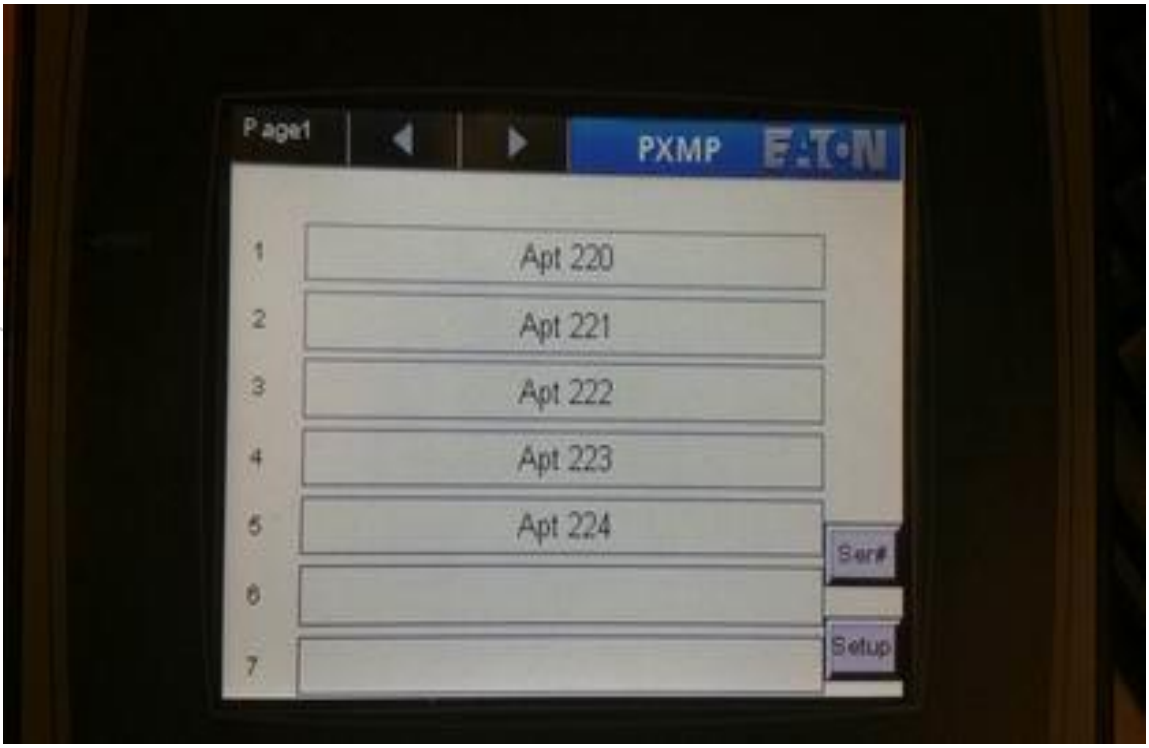

Figure 8. PXMP Display Home Screen Ready for Sealing

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Operation: The metering system has two flashing LEDs on each meter module and that will flash briefly (50 ms) for each Kt value of energy. The CT's line and load are direction sensitive. Green and red LEDs on the Meter Modules indicate the flow direction of power. Green equals CT installed correctly, red equals reverse power polarity CT (i.e., installed backwards).

PROGRAMMED AND APPROVED Kt VALUES	
Current Sensor Type	**Kt Value**
PXMP-CS125	1 WH/Pulse
PXMP-CS250	2 WH/Pulse
PXMP-CS400	4 WH/Pulse
CS005	1 WH/Pulse

Test Wiring Note: *The PXMP safety ground stud and PXMP neutral input connection should be connected to the same system ground. In WYE connected systems, the neutral should be bonded to ground to meet California Electrical Code. When testing the PXMP using single phase test equipment, the Portable Test Equipment Neutral and the PXMP ground should be connected together. Accuracy may be affected if the PXMP Neutral and PXMP Earth ground are isolated from each other during single phase accuracy testing. The Division of Measurement Standards recommends that the PXMP metering system be installed and tested on site. Assistance will likely be required by a Registered Service Agent in cases where the system is a 480VAC installation. (CCR 4000, Section 1.10. General Code, G-UR.4.4. and G-UR.4.6.)*

After installation, tenants can view their meter readings by selecting their apartment number on the touch screen display.

The pictures above show an example of how to press an apartment number to display the kWh registration.

Additional information on application of CS005:

The Eaton PXMP Multipoint Meter can be equipped with the PXMP-MM10MA meter module and CS005 current sensors for metering applications using IEEE Standard C57.13 0.3 Metering Accuracy Class Current Transformers with 5 amp rated secondary current. Metering Accuracy Class current transformers are used to meter large ampacity circuits that exceed the capacity of the PXMP-CS400. CT Secondary wiring is as follows:

5A Current Transformer X1 terminal is connected to the CS005 H1 terminal and the 5A Current Transformer X2 terminal is connected to the CS005 H2 terminal

ANSI C57.13 CTs should be installed with the Polarity side of the 5A CT facing the source in accordance with the CT manufacturer's instructions.

CAUTION! ***CT shorting blocks are required to facilitate secondary injection field accuracy testing. ANSI C57.13 metering accuracy class CTs are capable of generating LETHAL VOLTAGES if open circuited while under load. ONLY QUALIFIED REGISTERED SERVICE AGENTS WITH THE APPROPRIATE SAFETY TRAINING SHOULD WORK WITH THIS EQUIPMENT!***

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Test Conditions: A class 100 Model PXMP-MB panelboard metering system was submitted for evaluation in the CDFA Division of Measurement Standards laboratory and a contracted laboratory as a class 10, 125, 250 and 400 Model PXMP-MB. All three meters were retested for permanence after more than 20 days of throughput. The meters were subjected to accuracy tests from 1.5 amps to 60 amps at both unity and 0.5 power factors. Starting load and creep tests were also conducted.

Evaluated By: J. Roach (CA)

Type Evaluation Criteria Used: *California Code of Regulations, Title 4, Division 9, Article 1. National Uniformity, Exceptions and Additions 2016 Edition and NIST Handbook 44 2016 Edition.*

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

Example(s) of Device:

Typical Commercial Switchboard equipped with PXMP

Typical Commercial Switchboard Equipped with PXMP Covers Removed