

California Approved EZ Meters

Meters sold within California for revenue billing must be one of the models approved by the Division of Measurement Standards and must be tested by the local county Weight and Measures inspector for the location where the meters will be installed. Be sure to contact the local inspector before installing the meters. He may want to test the meters in his shop or he may want you to install them first then he will do a field inspection. He will also provide rules on where and how the meters are to be installed.

There are several features that distinguish California-approved meters from standard EZ Meters. The meters always run in Test Mode (0.01 kwh resolution). This ensures that an unscrupulous owner cannot charge his tenants for ten times the power actually used while allowing the Weights and Measures inspectors to test the meter without waiting too long. It also means the display counter has seven digits instead of six (at a slightly higher cost). Additionally, the meter has tamper shields that allow the owner to install a wire seal to detect any tampering by the tenant. The tamper shield covers the screws in the connectors and prevents anyone from removing a wire without breaking the seal.

Sequoia C - Single Element Meter List \$133.00

2 Wire, 90-140 Volts to Neutral. Used in North America for a single 120 volt service. Most often used in marinas for a small boat or to measure power used by a single appliance.

Yosemite C - Dual Element Meter List \$145.50

3 Wire, 90-140 Volts to Neutral, 180-280 Volts Line to Line. The most common meter we sell in North America. Used for apartments, RV parks, large boats in marinas, office suites, and anywhere you need to measure 120 volt and 240 volt power usage.

Denali C - Dual 2-in-1 Meter List \$168.50

2 Wire, 90-140 Volts to Neutral. Measure the power to two separate 120 volt services and display the power for each service on a separate counter. Most frequently used when two slips in a marina share a single power pedestal.

Yellowstone C - 3 Phase Wye Meter List \$168.00

4-Wire, 90-140Volts to Neutral, 180-280 Volts Line to Line.

All models are available in 100 and 200 amp versions except the 200 amp version of the Yellowstone was not tested in Plus and Plus IO configurations. Add \$50 to prices above for Plus version and \$65 for Plus IO.

California Regulatory Issues

Utility Company Tariffs

The general rule in California is that a utility company customer may not resell electric power he purchases from a public utility. There are exceptions to this rule, primarily for marinas, RV parks, and some residential applications. Each public utility makes its own rules and includes them in their tariff which is approved by the California Public Utilities Commission.

When submetering is allowed, the landowner must charge his tenants the same price for electric power that the tenant would have paid to the utility company if the tenant had a regular utility company meter. This is not necessarily the same as the landlord pays the utility company.

The tariffs are generally quite broad in their definitions of reselling electricity. They allow a flat charge to be made for electricity, but it must not be related to the amount the tenant used. It appears to prohibit the widespread practice of dividing the electric bill for a multi-tenant property in proportion to square footage or any other means as well as prohibiting any type of submetering.

Most of the power company tariffs say that they can refuse to continue to provide power to any of their customers who resell the power. Anyone in California who does not qualify under one of the tariff exceptions is advised to contact an attorney before installing submeters of any type or making any charge to his tenants for power. There may be civil or criminal liability that we are not aware of.

The submetering prohibitions are usually found in Rule 18 of each company's tariff. Links to some power company tariffs:

http://www.pge.com/customer_services/business/tariffs/pdf/ER18.pdf

<http://www.sce.com/NR/sc3/tm2/pdf/Rule18.pdf>

<http://www.sdge.com/tm2/pdf/ERULE19.pdf>

California Division of Measurement Standards (DMS)

If the property owner gets by the utility company tariff restrictions on reselling power, he still must comply with the provisions of Title 4, Division 9, Chapter 1 of the California Code of Regulations. Article 2.2 is titled *Electric Watthour Meters*. The current version is very short and does not cover much. A draft of a new electric watthour meter regulation has been in circulation for over a year and will likely be approved soon.

The new draft is twelve pages in length and covers a lot of technical matters such as accuracy and safety standards, labeling, and certification procedures. There are also sections that affect users. Of particular importance to marina and RV park operators are provisions requiring the meter to be at least 30" off the dock or ground. There is also a provision about using a meter that is suitable for the load. That provision means that a power pedestal with a 30 amp receptacle should have a Class 100 (100 amps) meter and not one with higher capacity unless it can be demonstrated to pass the accuracy tests at 1.5 amps.

The latest draft of the California Electric Meter code is at <http://www.ezmeter.com/PDFs/CalifMeterReg.pdf>. Be sure to read the User Requirements on the last three pages.

Davidge Controls has submitted some of its meters to DMS for certification for use in revenue metering in California. Since the tariffs generally do not allow revenue submetering in commercial and industrial sites, the higher amperage and higher voltage meters were not tested.

A copy of the approval certificate is on the web at <http://www.ezmeter.com/PDFs/CalTypeCert.pdf>. There is no link on the web site to this page. You must type it in with capitalization exactly as shown above.

Automatic Meter Reading Systems

For facilities that require automated reading of the power meters, Davidge Controls offers several options. The heart of all the systems is an RS-232 interface that can be connected directly to a computer, to a telephone modem, or to a TCP/IP - RS-232 interface.

The simplest connection is directly to an on site computer. If a telephone modem is needed, it must be connected to a phone line that will let the modem answer. This is usually a dedicated phone line or may be connected to a line for an alarm system that normally dials out. The TCP/IP connection is useful in factories and campuses connected by a LAN. It may also be used over the internet.

The meters themselves are connected to the RS-232 interface via a daisy-chained twisted pair of wires or over the power lines. When connected over the power lines a separate twisted-pair-to-power-line interface is used to tie into the power system. The EZ Meter Plus line of meters connect via the power line and the EZ Meter Plus IO line connects over the power line or the twisted pair. Any number of meters may be connected to the system and the maximum length of the wires connecting them is several miles.

Free software for reading the meters, logging the results and preparing bills for tenants is available on the Davidge Controls web site. This software uses a Microsoft Access database to store all the data. A runtime only version of Access is available free also. Windows 98 or later is required.

See the EZ Meter Plus brochure for more details.



Watthour Meters for Submetering In California

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Prices effective October 29, 2003
Prices subject to change without notice
Quantity discounts available