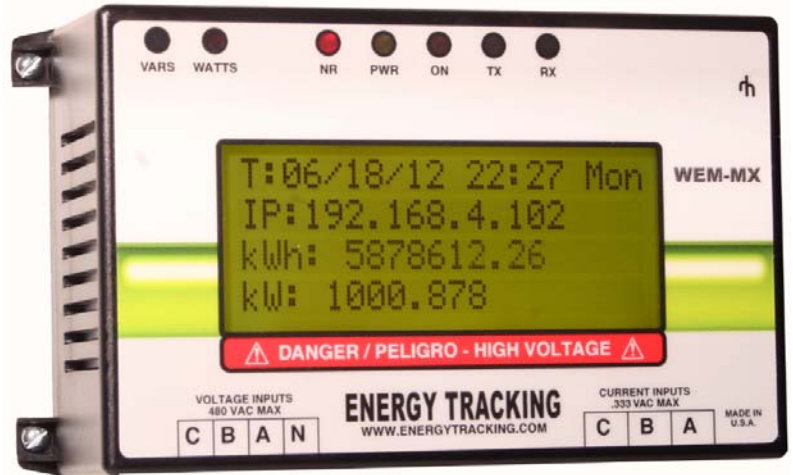


Web Enabled Meter WEM-MX

The WEM-MX family of advanced digital energy meters combines revenue-grade measurement with advanced system design to provide superior performance—particularly in applications where network security is important.

WEM-MX 333mV Digital Energy Meter

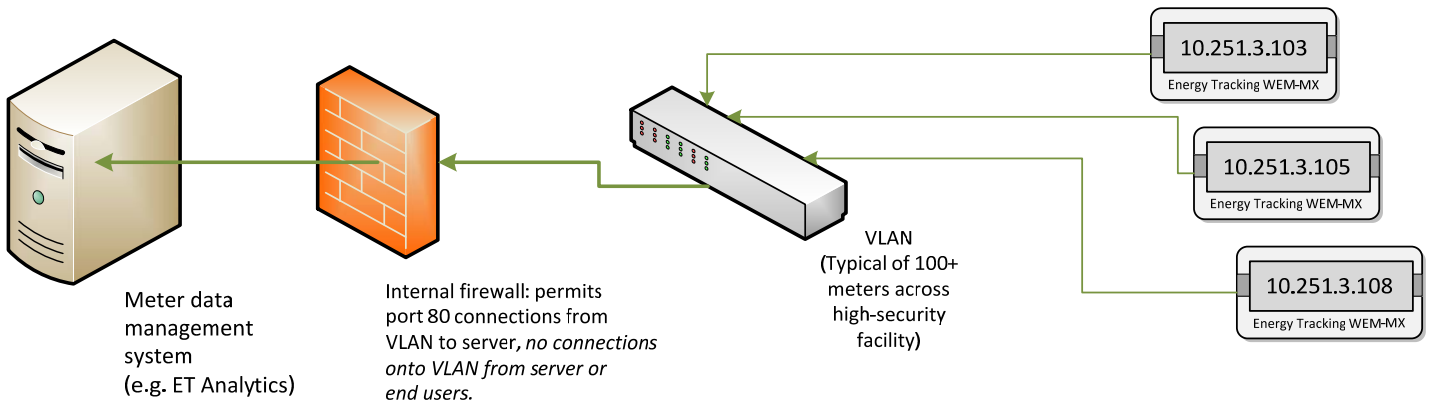
The 333mV version of the WEM-MX meter provides the same revenue-grade accuracy and reliability that Energy Tracking customers around the world have come to expect. This version of the WEM-MX uses 333 millivolt “safe” current transformers—reducing cost, improving installation flexibility, and significantly reducing risk of shock to installation or service personnel.



Advanced Metering for High-Security Facilities

The WEM-MX meter is designed to be installed in high-security IP networks, particularly where fire-wall security is important. The WEM-MX meter is configured with a web browser—but once configured, can be completely firewalled to prohibit any remote connection to the meter.

This high-security design is very important for military facilities, government buildings, financial institutions, and other applications where network security is a critical concern. “Smart” meters based on legacy communications protocols (for example, Modbus or BACNet) have to be polled by a remote server—which means that any internal firewalls must be configured to permit that server to penetrate the firewall and *execute a command* on the meter. The Energy Tracking WEM-MX meters are not polled—each meter maintains its own time clock, and initiates its connection to a meter data management system using (typically) an HTTP web service connection.



A typical network installation: the internal building firewall blocks all inbound access; meters are isolated on a standard virtual local-area network (VLAN). This is a typical default firewall configuration—and does not present the network security issues, and ongoing firewall maintenance, that legacy polling protocols (e.g. Modbus, BACNet) require.

A complete solution: no other hardware required

Some vendors address the firewall security problem of legacy communication protocols by requiring a dedicated—and expensive—special-purpose data acquisition device be installed at the same time. The WEM-MX meter requires no additional device in order to be able to communicate safely, securely, in the most strictly firewalled network environment.

Disconnected (data logging) application

In some circumstances users have installed WEM-MX meters for data logging applications, without connecting the meter to a network. This might be useful in temporary installations, or for installations where a suitable network connection is not available.

The WEM-MX meter can store up to 55 days of interval data (based on 15-minute intervals)—periodically (typically weekly or monthly) a user will connect a laptop computer to the meter with an Ethernet cable and download the stored data using a standard browser. (See the meter documentation for more information.)

Complete documentation, and expert support

A meter isn't effective until it has been installed—the WEM-MX meter is supported by extensive documentation, including wiring diagrams for single-phase, two-phase, and three-phase installation (including delta and wye configurations). Support for high-voltage installation, and network addressing and configuration, is provided by expert staff with extensive experience in thousands of meter deployments.

Metering for High-Security Facilities

In the summer of 2012 news reports emerged of suspicious computer network attacks against Iranian nuclear facilities. At the same time, the U.S. Department of Energy's **Idaho National Laboratory**—where U.S. nuclear reactors are decommissioned—selected the Energy Tracking WEM-MX 333mV digital energy meter for their laboratory-wide energy metering system. A principal reason identified by the selection team was the ease with which the WEM-MX meter can be implemented in a high-security networked computing environment—with little to no firewall configuration required.

INL is not alone: there are hundreds of WEM-MX meters and WEPM digital pulse loggers in use at the U.S. Army's **Aberdeen Proving Ground**, Aberdeen, Maryland, and elsewhere in military, government, and other high-security installations around the world.

WEM-MX Features:

- Revenue-grade accuracy: solid-state ANSI C12.20 digital energy meter certified to an accuracy of 0.2%.
- UL-listed, including cUL approval for **use in Canada**. Rated for 50-60 hz, 100-600 vac.
- Measures and reports kW, kWh, kVARh, voltage, current, power factor, VA, frequency.
- kWh & kVARh (Delivered, Received, Sum, Net - Instantaneous).
- Configurable load profile logging interval from 1 to 60 minutes.
- Meter can be configured with a dynamic (via DHCP) or static IP address.
- Meter reports by HTTP to web server-based meter data management system, using SOAP/XML web services.
- Meter uses SNTP (typically from local building router) for high-resolution time synchronization.
- Meter reports include total kWh; last interval's kW; voltage, current, power factors by phase; frequency; peak demand and consumption; and previous month's energy usage.
- In the event of a network disruption, meter will store up to 55 days worth of interval data (based on 15-minute intervals) for reporting when network connection is re-established.
- In the event of a power outage, meter can be configured to email an alert on loss of power, and/or when power is resumed. Meter has a Lithium Ion (Li-Ion) battery to enable operation when power is lost.
- Optional reporting by email and/or FTP. Programmable demand (kW) threshold can trigger an email alert when exceeded. Demand and load profile data can be emailed (or cc'd) as well.
- Meter is configured using a standard web browser; log-in to web server is authenticated.
- The WEM-MX meter is proudly manufactured in the USA, and is ROHS-compliant.

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