Energy Tracking
Web Enabled Meter (WEM-MX)

Email: support@energytracking.com

General:

The WEM-MX is a traceable revenue grade meter that meets ANSI C12.1 and also C12.20 (0.2%) which is also a standard for enhanced accuracy requirements. It is a low cost, highly accurate electric energy and power measurement meter with enhanced embedded network and reporting capability.

It has been designed for broad National and International use and provides data using open standards such as XML and uses push / pull technology to send or retrieve data via email, ftp, SOAP XML web service client or via ModBus TCP/IP. In addition, it's on board web server allows you to view and setup data and reporting via a web browser such as MS Internet Explorer™. It can be set to periodically send reports via email, ftp files or SOAP Web Service client. No additional software is required except MS IE web browser to view energy usage or production kWh.

The WEM-MX is ROHS compliant for export to European countries.

Power Supply:

- External power supply. Input: 100 to 240VAC. Output +9VDC.
- Supply Current: 300mA (typical)

Internal Back up power supply:

- Rechargeable Lithium Ion battery. Charging circuit is built-in.

Accuracy:

±0.2% at unity power factor.
±0.5% at 0.5 power factor. (Call factory for 0.2%)

Input Signal Range:

- Max Voltage Input: 600 VAC (347 VAC - Phase to neutral)
- AC Voltage (VA, VB, VC): 0 to 600 VAC (rms)
- AC Current (IA, IB, IC): 0 to 5A. (or 333mV)

Frequency:

- 50 / 60 Hz.

Energy Measurement (4-Quadrant):

- 1 Element, 2 Wire, Single Phase.
- 1 Element, 3 Wire, Single Phase.
- 2 Element, 3 Wire, Three Phase Delta.
- 2 Element, 4 Wire, Three Phase Delta.
- 2 Element, 4 Wire, Three Phase Wye.
- 3 Element, 4 Wire, Three Phase Wye.

Interface Connectors:

• DC Supply Jack	Concentric 2.5 mm.
• RJ 45 Network Cable	
• Voltage Inputs	Phase A, B, C.
• Current Inputs	Phase A, B, C.
• Neutral	

Network:

- Plug-n-Play: DHCP enabled (default).
- User can set meter to a Static IP address.
- Ethernet 10/100 BaseT.

Applications Built In:

• DHCP Client	Acquires IP Address.
• DNS Client	Domain to IP conversion.
• SNTP	Real time clock support.
• Day Time Client	Backup Real time clock.
• Time Zone Support	International Synchronization.
• FTP Server	Firmware Updates.
• FTP Client	Report Data via FTP.
• Email Client	Report Data via Email.
• XML/SOAP Client	Report Data via Web Services Client.
• Web Server	Password protected.
• ModBus TCP/IP Server	(optional)

Standard Ports Utilized:

Web Server – Web Services:	Port 80
FTP Server:	Port 21
Email SMTP	Port 25
SNTP (time synchronization):	Port 123
Day Time Server	Port 13
Debug Output:	Port 12345
ModBus TCP/IP (optional)	Port 502

User Selectable Features:

- Program Load Profile interval of 1,5,15,30,60 minutes.
- Send load profile report immediately upon end of interval.
- Send alarm email on power failure / return.
- Send alarm email when kW threshold is exceeded.
- Time of Use Tiers.
- Demand Reset Date.
- Schedule weekly or daily email Reports.
- Set Demand Threshold Alarm.
- CT / PT Ratios.
- Meter ID / Serial Number.
- Concurrent Reporting via Email, FTP, and SOAP.

Accessible via Web Server:

- Setup of Email, DNS, FTP, Time Zone, DHCP or Fixed IP.
- Load Profile Data – kWh / kVArh Delivered and Received.
- Instantaneous Voltage, Current, Power Factor by Phase.
- Watt Hours, VARH, VA
- Energy Imported, Exported, Sum, Net.
- Energy Consumption and Demand with Time Stamp.
- Previous Month's Consumption and Demand Data.
- Last 24 hour Load Profile w/ >= 1 minute intervals.

Storage Capacity of Load Profile Data:

- 55 days – 4 channels @ 15 minute intervals.

Software Supporting Applications:

ET Analytics Web Portal	(optional)
Energy@DeskTop Application.	(optional)

Environmental:

- Operating Temperature: -25C to +60 deg C.
  (Consult Factory for extended temperature range.)
- Storage Temperature: - 25C to +60 deg C.
- Humidity: 5% to 95%
- Altitude: 9,843 ft (3000 meters)

Display LEDs:

- Yellow – Provides indication of Ethernet Link.
- Green – Provides indication of Ethernet Activity.
- Red – Power
- Yellow / Green TX / RX – Serial Port Activity.
- IR LEDs for Watts and Vars (enables traceability).

Standards:

The embedded Network module meets the following Electromagnetic emission standards:

EN55022: 1988
EN55024: 1988
VCCI
AS 3548

The embedded network module meets the following Electromagnetic emission standards:

- UL 60950
- CSA 22.2 No. 60950
- EN60950

Overall WEM-MX Safety Standards and EMC Testing:

The MX meets the following standards based on independent Testing by Underwriters Laboratories, Melville, NY, USA.

IEC 61010-1: 2001 2nd Edition	
EN 61000-6-1	
EN 61000-3-2	Harmonics
EN 61000-3-3	Conducted Emissions, Voltage Fluctuations and Flicker.
EN 61000-6-3	Radiated Emissions
IEC/EN61000-4-2	Electrostatic Discharge Immunity Test.
IEC/EN61000-4-3	RF Electromagnetic Immunity Test.
IEC/EN61000-4-4	Fast Transient / Burst Immunity Test.
IEC/EN61000-4-5	Surge Immunity Test.
IEC/EN61000-4-6	Immunity to Conducted Disturbances.
IEC/EN61000-4-8	Magnetic Field Immunity Test.
IEC/EN61000-4-11	Voltage Dips, Interruptions Immunity Test.
FCC Part 15, Subpart B	(Valid for Residential Installations).
IEC/EN55022	

LCD Display:

WEM-MX can be ordered with a LCD Display. This LCD is a 4 line display where the following data will be displayed.

Line 1: Date and Time
Line 3: kWh
Line 4: kW. Note this line is also used to display critical messages such 'Ethernet Link Lost'.

Line 2: Will display the following values in sequence with a 4 second wait.

- kW: Current instantaneous demand measured by the meter.
- kWh: Total kilo-watt hours.
- kVARh: Total kilo-watt reactive hours.
- Pk kW: The highest peak demand recorded in the current month.
- Pk T: Time and date at which the peak demand occurred.
- IP: Meter's IP Address.
- Snet: Meter's subnet mask.
- Gway: Meter's gateway.
- V Phase A: Phase A voltage.
- V Phase B: Phase B voltage.
- V Phase C: Phase C voltage.
- I Phase A: Phase A current.
- I Phase B: Phase B current.
- I Phase C: Phase C current.
- Avg. PF: Average power factor of all 3 phases.
- PF Phase A: Phase A power factor.
- PF Phase B: Phase B power factor.
- PF Phase C: Phase C power factor.
- Meter ID:
- MC: Meter's MAC Address.

Design:

Panel Mount.

Dimensions:

- Length 7.0"
- Width 4.0"
- Height 2.3"

WEM-MX 333mV:


VARS
WATTS
NR
PWR
ON
TX
RX
T:06/18/12 22:27 Mon
IP:192.168.4.102
kWh: 5878612.26
kW: 1000.878
WEM-MX
DANGER / PELIGRO - HIGH VOLTAGE
VOLTAGE INPUTS
480 VAC MAX
C B A N
ENERGY TRACKING
WWW.ENERGYTRACKING.COM
CURRENT INPUTS
333 VAC MAX
C B A
MADE IN U.S.A.
C B A N
600 VAC MAX
C B A
0.333 VAC MAX


Network Jack
+9 VDC