Multilin™ EPM 6010

BUILDING AUTOMATION POWER METER

BACnet®/IP Communications and Energy Measurement

KEY BENEFITS

- Rapid integration into BACnet management systems
- High accuracy multifunction power meter, 0.2% class revenue certifiable energy and demand metering
- Ultra compact and easy to install, fits both ANSI and DIN cutouts
- EnerVista™ software makes metered data and power quality status easily accessible
- User programmable for different system voltages and current measurements
- Standard Modbus™ TCP communications
- Easy to read, large 3 line .56" bright LED display for better visibility and longer life

APPLICATIONS

- LEED projects
- Smart buildings
- Commercial energy management
- HVAC efficiency monitoring
- Building management systems

FEATURES

Communications

- BACnet/IP 100BaseT Ethernet protocol
- 40 pre-defined BACnet objects facilitate rapid integration
- Embedded web-server, allows BACnet/IP interface to be remotely configured and BACnet objects can be remotely viewed over the internet with a web browser
- Standard Modbus TCP communications can be used to poll the EPM 6010 while BACnet/IP interface is being used

Measuring and Metering

- High accuracy multifunction power meter, 0.2% class revenue certifiable energy and demand metering
- Samples at 400+ times per cycle and has 24 bit A/D conversion to measure accurately and reliably
- Meets ANSI C12.20 (0.2%) and IEC 687 (0.2%) accuracy classes
- Total harmonic distortion (%THD)
- Load percentage graphical bar for instant load visualization
- True RMS multifunction measurements including voltage, current, power, frequency and energy

Energy

Overview

The Multilin EPM 6010 is an industry leading revenue grade power meter with native BACnet/IP communications. This meter is designed to integrate seamlessly into existing and new building management systems using the popular BACnet protocol. The meter allows users to gather data on voltage, current, power and energy usage throughout a facility.

Designed to be the perfect device for environmental initiatives, LEED certified projects and smart energy projects, the EPM 6010 provides superior metrology, and revenue testable 0.2% energy accuracy. The meter is in compliance with ANSI and IEC accuracy standards, has advanced DSP technology, samples at high rates, and has 24 bit A/D conversion to measure and analyze power accurately and reliably.

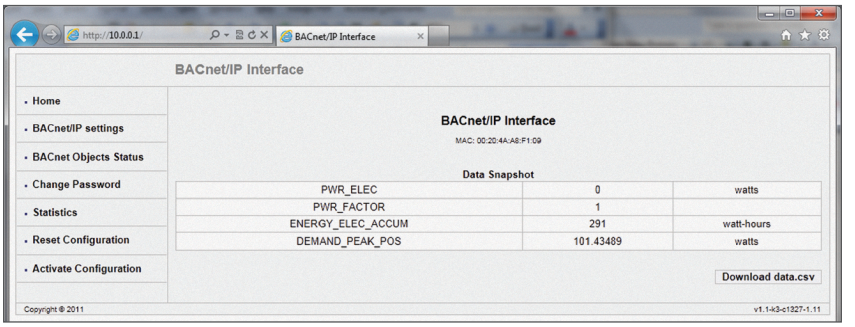
BACnet Communications

The Multilin EPM 6010 with BACnet/IP supports building energy management strategies, LEED certification and other Green Building initiatives. By allowing users to track energy use and power quality, the meters gives users the information they need to accurately identify cost-saving measures and respond to power quality problems when they arise.

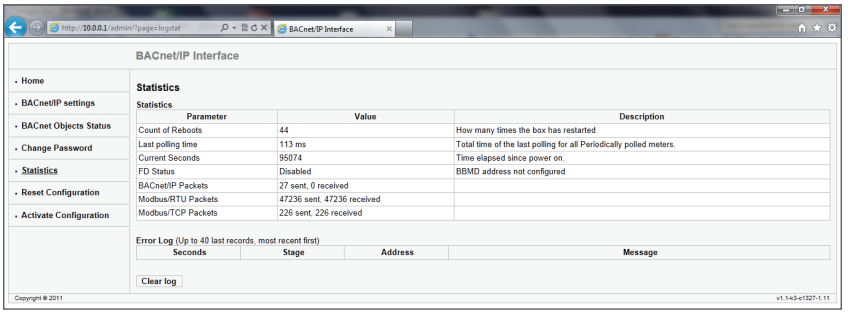
Measured Values

EPM 6010 measures the following values:

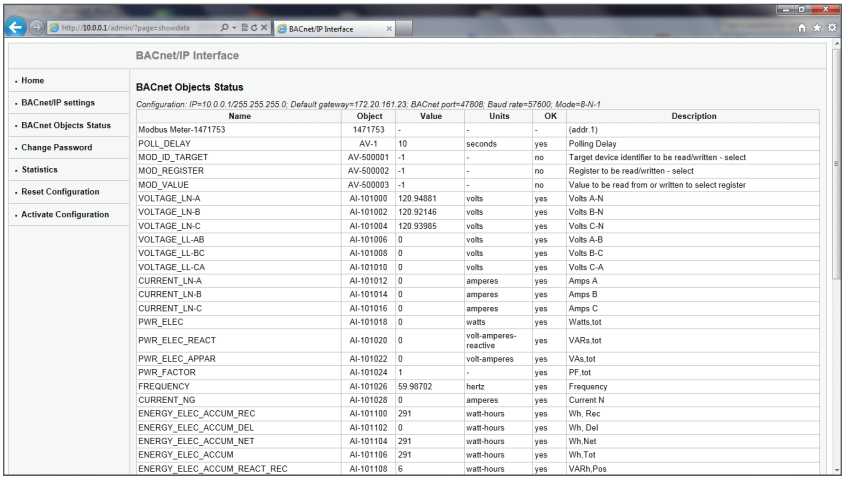
MEASURED VALUES	REAL-TIME	AVG	MAX	MIN
Voltage L-N	•		•	•
Voltage L-L	•		•	•
Current Per Phase	•	•	•	•
Watts	•	•	•	•
VAr	•	•	•	•
VA	•	•	•	•
PF	•	•	•	•
+Watt-hr	•			
-Watt hr	•			
Watt-hr net	•			
+VAr-hr	•			
-VAr-hr	•			
VAr-hr net	•			
VA-hr	•			
Frequency	•		•	•
Voltage Angles	•			
Current Angles	•			
%THD	•		•	•
% of Load Bar	•			



BACnet home web page



BACnet/IP interface statistics



View BACnet objects and their status

Communications Ports

The Multilin EPM 6010 provides two independent communication ports with advanced features:

- **IrDA port** – A unique optical IrDA port allows the unit to be set up and programmed using a remote laptop without needing a communication cable. Simply point at the meter with an IrDA-equipped PC computer to configure it.
- **Ethernet Port** – This port provides connectivity via a 10/100BaseT RJ45 connection. Modbus TCP and BACnet protocols are supported.

BACnet/IP Web Interface

The Multilin EPM 6010 comes standard with a web interface. Use the BACnet/IP interface to remotely set up the BACnet/IP configuration and track energy use with any standard web browser.

EnerVista Software

EnerVista Software

EnerVista Launchpad is a powerful software package that provides users a platform to access all of the setup and

Simultaneous Dual Communications Paths

support tools needed for configuring and maintaining GE Multilin Products. Launchpad allows configuration of devices in real-time by communicating using RS232, RS485, Ethernet, or modem connections.

Using Launchpad as the single interface to the setup and analysis software makes it simple to enter setpoints, read metered values, monitor status and evaluate power quality.

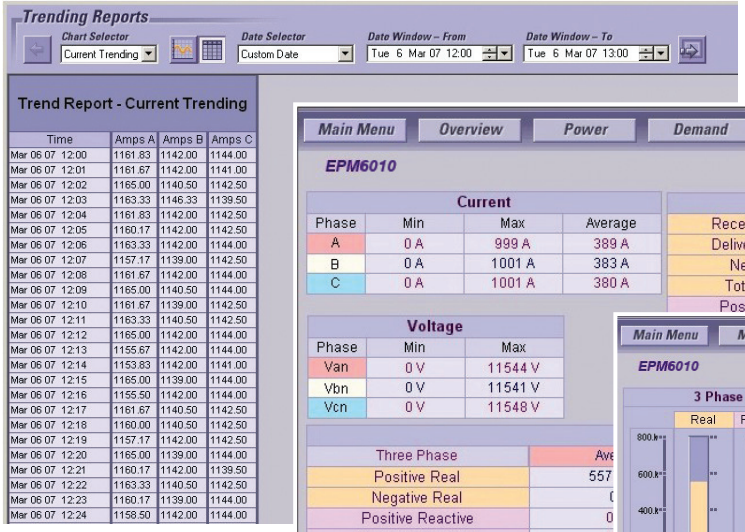
Included in Launchpad is a document archiving and management system that ensures critical documentation is up-to-date and available when needed by automatically checking for and downloading new versions of manuals, applications notes, specifications, and service bulletins.

Viewpoint Monitoring

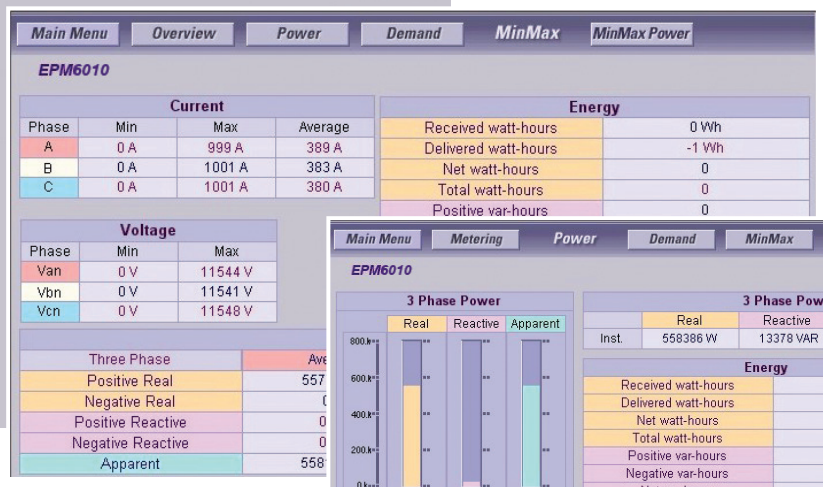
Viewpoint Monitoring is a simple-to-use, full-featured monitoring and data recording software package for small systems. Viewpoint Monitoring provides a complete HMI package that instantly puts critical real-time device data on your PC through pre-configured graphical screens with the following functionality.

- Plug-&-Play Device Monitoring
- System Single-Line Monitoring & Control
- Annunciator Alarm Screens
- Trending Reports
- Automatic Event Retrieval
- Automatic Waveform Retrieval

EnerVista Viewpoint Monitoring Data Recording and Real-Time Status



Create tabular trending reports of usage data



Historical minimum and maximum values to understand fluctuations on the network

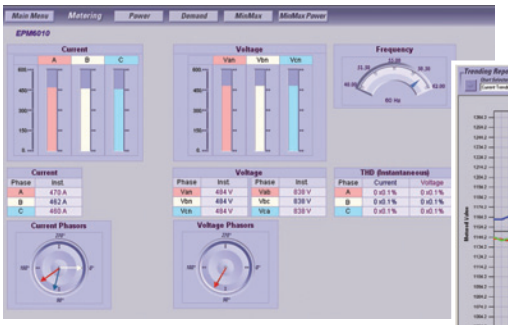
Real-time power values to instantly analyze system capacity

EnerVista Integrator

EnerVista Integrator is a toolkit that allows seamless integration of GE Multilin devices into new or existing automation systems by sending GE device data to HMI, DCS, and SCADA systems. Included in EnerVistaTM Integrator is:

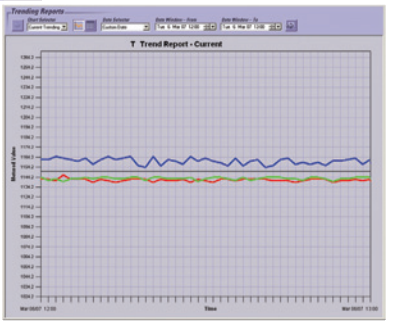
- OPC/DDE Server
- GE Multilin Drivers
- Automatic Event Retrieval
- Automatic Waveform Retrieval

EnerVista Viewpoint Monitoring Data Recording and Real-Time Status

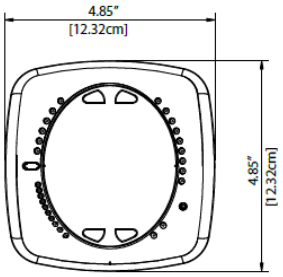


Real-time metering values and phasors to verify device connection

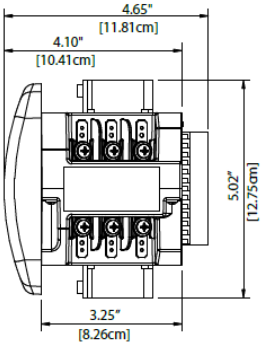
Create graphical trending reports of usage overtime



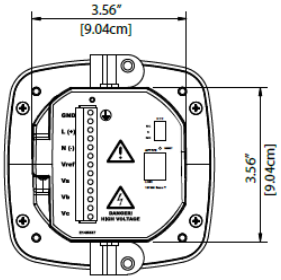
Dimensions and Mounting



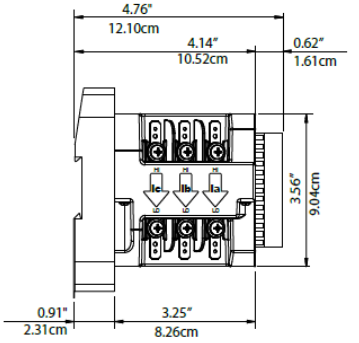
Front View



Side View



Rear View



Transducer

User Interface

Technical Specifications

VOLTAGE INPUTS

Universal Voltage Input

- 0-416 Volts Line To Neutral
- 0-721 Volts Line to Line

Input withstand capability – Meets IEEE C37.90.1 (surge withstand Capability)

Programmable voltage range to any PT ratio

Supports: 3 element WYE, 2.5 element WYE, 2 Element Delta, 4 Wire Delta Systems

Burden: 0.36VA per phase max at 600V, 0.014VA at 120 Volts

Input wire gauge max (AWG 12/2.5mm2)

CURRENT INPUTS

Class 10: 0 to 11 Amps Secondary/5 Amps Nominal/10Amps Max

Class 2: 0 to 2 Amps Secondary/1 Amp Nominal/2 Amps max

Fault Current Withstand:

- 100 Amps for 10 Seconds
- 300 Amps for 3 Seconds
- 500 Amps for 1 Second.

Programmable Current to Any CT Ratio

Burden 0.005VA per phase Max at 11Amps

5mA Pickup Current

Frequency 50 Hz or 60 Hz+/- 3Hz above and below nominal range

Pass through wire gauge dimension: 0.177"/4.5mm

ISOLATION

All Inputs and Outputs are galvanically isolated to 2500 Volts AC.

SENSING METHOD

True RMS

Sampling at 400+ Samples per Cycle on all channels measured readings simultaneously

Harmonic % THD (% of total harmonic distoration)

UPDATE RATE

Watts, VAr and VA-100msec

All other parameters-1second

POWER SUPPLY

Universal AC/DC Supply

- 90 to 265 Volts AC and
- 100 to 370 Volts DC.

Optional 24 to 48 Volts DC Supply.

Burden: 10VA max.

COMMUNICATIONS

2 Com Ports (Back and Face Plate):

- IrDA (Through Faceplate)
  - Protocol Modbus ASCII
  - Com P ort Baud Rate: 56.7k
  - Address: 1
- Ethernet (Back Panel)
  - 10/100 BaseT via RJ45 connector
  - Protocol Modbus TCP
  - BACnet/IP

BACnet OBJECTS

Volts A-N	Whr Net
Volts B-N	Total Whr
Volts C-N	Positive VARh
Volts A-B	Negative VARh
Volts B-C	Positive Watts, 3-Phase, Average Demand
Volts C-A	Positive VARs, 3-Phase, Average Demand
Amps A	Negative Watts, 3-Phase, Average Demand
Amps B	Negative VARs, 3-Phase, Average Demand
Amps C	Positive Watts, 3-Phase, Max Average Demand
Total Watts	Positive VARs, 3-Phase, Max Average Demand
Total VARs	Negative Watts, 3-Phase, Max Average Demand
Total VA	Negative VARs, 3-Phase, Max Average Demand
Total PF	VAs, 3-phase, Average Demand
Total VAh	VAs, 3-phase, Max Average Demand
Total VARh	Volts, A-N %THD
VARh Net	Volts, B-N %THD
Frequency	Volts, C-N %THD
Neutral Current	Amps, A %THD
Whr Received	Amps, B %THD
Whr Delivered	Amps, C %THD

There are 40 pre-defined BACnet Objects in the EPM 6010's BACnet/IP protocol

METERING ACCURACY

Measured Parameters	Accuracy% of Reading	Display Range
Voltage L-N	0.1%	0-9999 Scalable V or kV
Voltage L-L	0.1%	0-9999 V or kV Scalable
Current	0.1%	0-9999 Amps or kAmps
+/- Watts	0.2%	0-9999 Watts, kWatts, MWatts
+/-Wh	0.2%	5 to 8 Digits Programmable
+/-VARs	0.2%	0-9999 VARs, kVARs, MVARs
+/-VARh	0.2%	5 to 8 Digits Programmable
VA	0.2%	0-9999 VA, kVA, MVA
VAh	0.2%	5 to 8 Digits Programmable
PF	0.2%	+/- 0.5 to 1.0
Frequency	0.01 Hz	45 to 65 Hz
%THD	5%	0-200%
%Load Bar	1-120%	10 Digit Resolution Scalable

PULSE OUTPUT

Front panel Wh infared test pulse

Back panel Wh pulse output

DIMENSIONS & SHIPPING

Weight: 2 lbs

Basic Unit: H4.85 x W4.82 x L4.25

Mounts in 92mm DIN and ANSI C39.1 Round Cut-outs

Shipping Container Dimensions: 6" cube

ENVIRONMENTAL

Storage	-20°C to +70°C
Operating	-20°C to +70°C
Humidity	to 95% RH Non-Condensing
Faceplate Rating	NEMA 12 (Water Resistant) Mounting Gasket Included

COMPLIANCE

IEC 687 (0.2% Accuracy)

ANSI C12.20 (0.2% Accuracy)

ANSI (IEEE) C37.90.1 Surge Withstand

ANSI C62.41 (Burst)

IEC1000-4-2 – ESD

IEC1000-4-3 – Radiated Immunity

IEC 1000-4-4 – Fast Transient

IEC 1000-4-5 – Surge Immunity

APPROVALS

ISO	Manufactured to an ISO9001 registered program
UL/cUL	Listed under E200431
CE	Conforms to European CE standards

Ordering

PL6010	*	*	*	*	Description
Frequency	5				50Hz - BACnet/IP Communicating Multimeter
	6				60Hz - BACnet/IP Communicating Multimeter
Current Inputs		5A			5 Amps
		1A			1 Amp
Software			THD		THD, Limits Alarms & One KYZ Pulse Output
Power Supply				HI	AC/DC Power Supply (90-265)VAC or (100-370)VDC
				LDC	Low Voltage DC Power Supply (18-60)VDC

Example – EPM 6010 for 60Hz system with 5 Amp secondary and an AC/DC Power supply. PL601065ATHDHI

EPM 6010 is available without a display as the EPM 6010T. Please see the online store for ordering information.

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