Multilin EPM 6010

Building Automation Power Meter with BacNET®/IP Communications

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.

Ideally suited for environmental initiatives, LEED certified projects and smart energy projects the EPM 6010 provides the metrology and revenue testable energy accuracy required by these applications.

Key Benefits

- High accuracy multi-function power meter for energy management systems
- Compact, easy-to-install, program, and use
- 0.2% revenue class accuracy for reliable energy and demand metering
- Flexible mounting fitting both ANSI and DIN cutouts. DIN mount transducer (EPM 6010T) configuration for in-cabinet installation, reducing panel space requirements
- Large 3 line 0.56" bright LED display for better visibility and longer life
- User programmable for different system voltages and current measurements
- Optional Ethernet port for simplified integration into new or existing LAN infrastructures and multi-point connectivity
- Rapid integration into BACnet management systems
- Replaces multiple analog meters saving space and installation costs
- Meter Enclosure option enabling customers to extend metering capabilities without costly downtime or engineering efforts

Applications

- Continuous metering of electrical loads such as generator panels and switchgear
- Low and medium voltage applications
- LEED Projects & HVAC efficiency monitoring
- Energy metering systems in building automation and building management systems

Monitoring & Metering

- True RMS multi-function measurements including voltage, current, power, frequency, and energy
- Meets ANSI C12.20 (0.2%) and IEC 687 (0.2%) accuracy classes
- Field upgradable for added functionality without removing installed meter
- Load percentage graphical bar for instant load visualization
- Samples at 400+ times per cycle and has 24-bit A/D conversion
- Total Harmonic Distortion (%THD)
- Optional Transducer configuration without display (EPM 6010T)

Advanced Communications

- Modbus TCP Protocol through 10/100BaseTX via RJ45 (Ethernet Option)
- Front IrDA Port for laptop communications
- Pulse output for accuracy testing and energy
- BACnet/IP 100BaseT Ethernet support
- 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 via web browser
- Remote status capability when used with GE's EnerVista suite of software

WORLDWIDE **10** YEAR WARRANTY

GE — imagination at work

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.
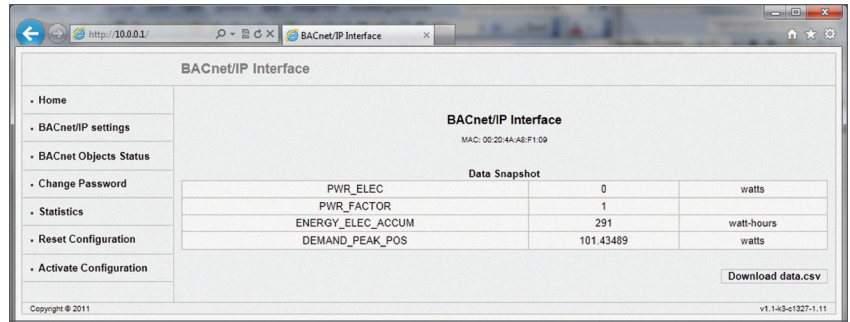
BACnet Communications

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.
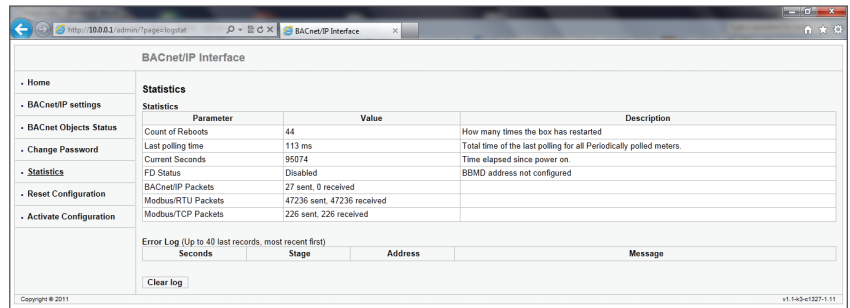
Measured Values

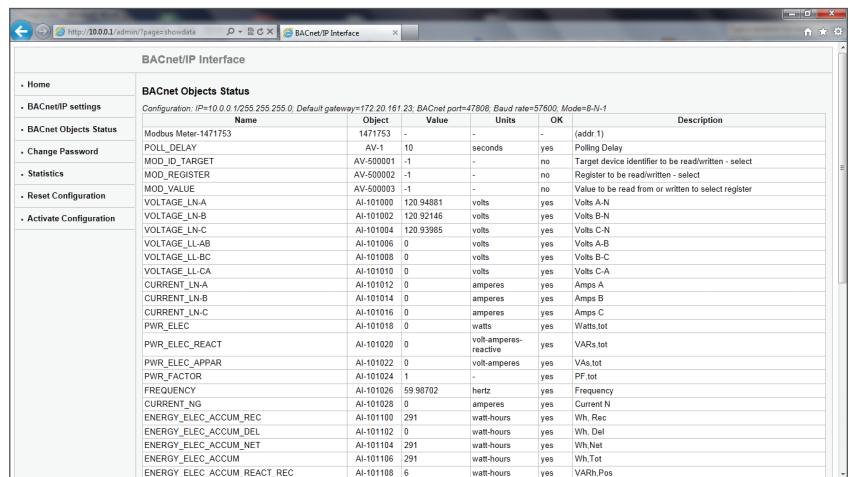EPM 6010 measures the following values:

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	•			

View BACnet Energy Values

View BACnet Meter 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 support tools needed for configuring and maintaining GE's Multilin Products. Using

Simultaneous Dual Communications Paths

Direct PC Interface

Wireless Communication

Modbus TCP → Master Host or Multiple Masters

BACnet/IP → Building Automation System

HTTP Web Server → Web Browser

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.

Graphical screens provide 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
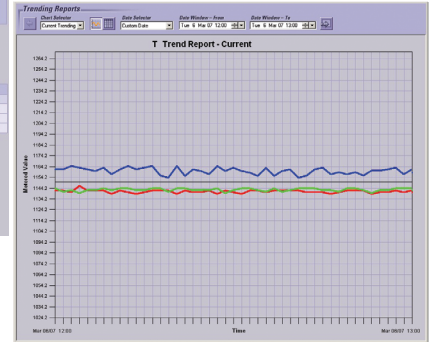

EnerVista Integrator

EnerVista Integrator is a toolkit that allows seamless integration of GE's 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 - EPM 6010

Large .56" LEDs

Reading Type Designator

IRDA Port

% Load Bar

Auto Scale Indicator

Screen Selectors

Vh Pulse

Only 3.25"

KYZ Pulse Output

10/100 BaseT via RJ45 Connector

Current "Gills"
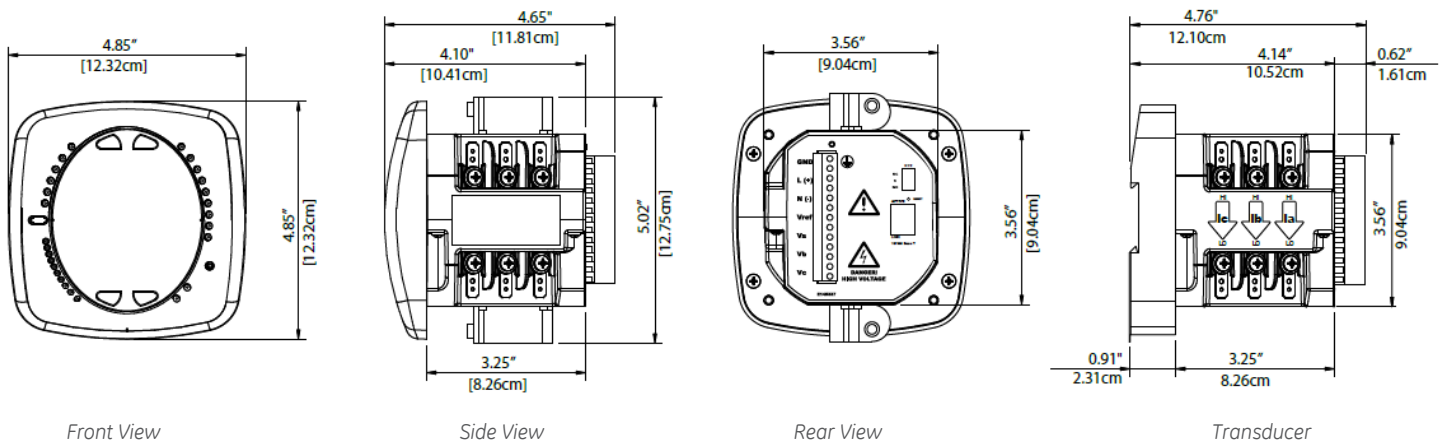
Universal Voltage Inputs

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/10 Amps 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 11 Amps

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
- 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 Port Baud Rate: 56.7k
  - Address: 1
- Ethernet (Back Panel)
  - 10/100 BaseT via RJ45 connector
  - Protocol Modbus TCP
  - BACnet/IP

PRE-DEFINED BACNET OBJECTS

- Volts A-N
- Volts B-N
- Volts C-N
- Volts A-B
- Volts B-C
- Volts C-A
- Amps A
- Amps B
- Amps C
- Total Watts
- Total VARs
- Total VA
- Total PF
- Total VAh
- Total VARh
- VARh Net
- Frequency
- Neutral Current
- Whr Received
- Whr Delivered
- Whr Net
- Total Whr
- Positive VARh
- Negative VARh
- Positive Watts, 3-Phase, Average Demand
- Positive VARs, 3-Phase, Average Demand
- Negative Watts, 3-Phase, Average Demand
- Negative VARs, 3-Phase, Average Demand
- Positive Watts, 3-Phase, Max Average Demand
- Positive VARs, 3-Phase, Max Average Demand
- Negative Watts, 3-Phase, Max Average Demand
- Negative VARs, 3-Phase, Max Average Demand
- VAs, 3-phase, Average Demand
- VAs, 3-phase, Max Average Demand
- Volts, A-N %THD
- Volts, B-N %THD
- Volts, C-N %THD
- Amps, A %THD
- Amps, B %THD
- 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 × W4.82 × 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)

IEC 1000-4-2 – ESD

IEC 1000-4-3 – 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
Base Unit	PL6010										EPM 6010
Enclosure Option		ENC120									NEMA1 Rated Indoor, Single Meter Enclosure, 120V
		ENC277									NEMA1 Rated Indoor, Single Meter Enclosure, 277V
System				5							Frequency Option 50 Hz
Frequency				6							Frequency Option 60 Hz
Current Input						1A					Current Input 1A
						5A					Current Input 5A
Software (THD)								THD			THD, Limits Alarms and One KYZ Pulse Output
Power Supply										HI	HI - AC/DC Power Supply (90-265) VAC or (100-370) VDC
										LDC	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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