Multilin

EPM 5100
POWER METERING SYSTEM

Draw-Out Multi-Function Meter

KEY BENEFITS

- 3 Phase RMS revenue class multifunction power meter.
- Internally powered electronics. No external control power transformer is required for up to 600 VAC
- Automatic self test feature for internal electronics failure and data validation
- Large alphanumeric 2-line LCD backlit display with contrast adjustment
- User-defined security access to critical data guarantees data integrity
- Economical design for panel mount with industry standard S1 draw-out case
- Modbus open protocol communications and KYZ pulse outputs to PLCs and other devices.

APPLICATIONS

- Continuous metering of electrical loads such as motor control centers, generator panels, feeders, switchgear etc
- Track power usage and demand for billing
- With its 2.5” depth, the panel-mount EPM is perfect for switchboard metering applications
- Provide remote status when used with EnerVista suite of software.
- Retrofit existing DS-63, DS-64 or DS-65 electromechanical watt-hour meters. S1 draw-out case design provides easy upgrade
- Low and medium voltage applications

FEATURES

Monitoring and Metering

- RMS measurement of over electrical parameters with ANSI accuracy standards -CSA revenue certified
- Measures 3 phase real time amps, volts, power, energy, power factor and frequency
- Direct Voltage input for 69 to 600 Volts and operating frequency of 65 to 65 Hz

Communications

- Modbus open protocol communication over industry standard RS 485.
- KYZ pulse output for PLC and other device interfaces
EPM 5100 Draw-Out Power Metering System

Standard Features:

Description
The EPM 5100 is a full function microprocessor-based meter that displays more than 50 metered values with revenue-class accuracy of 0.5% for power. The meter is available in industry standard S1-compatible case to maintain draw-out capability, allowing easy upgrade or retrofit from existing DS-63, DS-64 or DS-65 electromechanical watthour meters.

EPM 5100 continuously monitors metered values and displays the desired functions and the calculated parameters on a built-in two line, alphanumeric LCD display on the front panel. The meter can easily be mounted in panel applications including generator monitoring and substation automation. The meter can also provide data to RTUs, PLCs and other control devices. The EPM 5100 is fully compatible with GE EnerVista suite of software for remote monitoring.

Advanced Measurement & Accuracy
The EPM 5100 measures over 50 electrical parameters including current, voltage, real and reactive power, energy, power factor and other related values. The meter is CSA revenue certified for billing purposes and meets ANSI accuracy of 0.5%.

Any of the metered functions can be viewed by pressing the scroll buttons or allowing the meter to automatically scroll through the parameters.

Electrical parameters shown in Table 1 can be accessed and displayed.

Meter Self Test
Each time that the power is applied to the meter it automatically performs a self test of its internal electronics. To ensure data integrity self test sequence also checks the stored accumulated energy and metering values. After the full test the meter will display the status of electronics and data, and communicate this information to the EnerVista Software.

Optional Features

Communications
The EPM 5100 is offered with Modbus RTU non-proprietary open protocol over RS 485. This allows the meter to communicate with almost all utility RTUs, industrial PLCs and commercial energy-management systems. Integration into existing systems is simple and quick.

KYZ Pulse Output
The meter can also provide KYZ pulse output for interfacing with external devices which may not have communication ports. The unit offers 2 separate KYZ pulses that can be configured for Wh, VAh, Varh, and Q-hour.

Solid Construction with Mounting Versatility
The EPM 5100 is housed in a rugged enclosure which can either by mounted in a panel or in a switch board with industry standard S1 drawout case configuration. With its 2.5” depth, the Panel-Mount EPM is perfect for switchboard metering applications.

The unit easily retrofits into existing panels with its standard ANSI 39.1 switchboard meter cutout. Also, the small footprint ensures that the unit will easily mount into any switchboard enclosure, panel or door.

Table 1. Electrical parameter monitored and displayed in the alternate scroll

<table>
<thead>
<tr>
<th>Wye Configuration</th>
<th>Delta Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, Phase A Demand</td>
<td>Current, Phase A Demand</td>
</tr>
<tr>
<td>Current, Phase A Peak</td>
<td>Current, Phase A Peak</td>
</tr>
<tr>
<td>Current, Phase B Demand</td>
<td>Current, Phase B Demand</td>
</tr>
<tr>
<td>Current, Phase B Peak</td>
<td>Current, Phase C Demand</td>
</tr>
<tr>
<td>Current, Phase C Demand</td>
<td>Current, Phase C Peak</td>
</tr>
<tr>
<td>Watts Demand at Peak VA</td>
<td>Watts Demand at Peak VA</td>
</tr>
<tr>
<td>Vars, Demand Lag (+)</td>
<td>Vars, Demand Lag (+)</td>
</tr>
<tr>
<td>Vars, Demand Lead (-)</td>
<td>Vars, Demand Lead (-)</td>
</tr>
<tr>
<td>Vars, Peak Demand Lag (+)</td>
<td>Vars, Peak Demand Lag (+)</td>
</tr>
<tr>
<td>Vars, Peak Demand Lead (-)</td>
<td>Vars, Peak Demand Lead (-)</td>
</tr>
<tr>
<td>Voltamperes, Demand</td>
<td>Voltamperes, Demand</td>
</tr>
<tr>
<td>Voltamperes, Peak Demand Q-hours, Total</td>
<td>Voltamperes, Peak Demand Q-hours, Total</td>
</tr>
<tr>
<td>Power Factor, Phase A</td>
<td>Power Factor, Phase A</td>
</tr>
<tr>
<td>Power Factor, Phase B</td>
<td>Power Factor, Phase B</td>
</tr>
<tr>
<td>Power Factor, Phase C</td>
<td>Power Factor, Average Since</td>
</tr>
<tr>
<td>Power Factor, Demand</td>
<td>Power Factor, Demand</td>
</tr>
<tr>
<td>Power Factor at Peak VA</td>
<td>Power Factor at Peak VA</td>
</tr>
<tr>
<td>Number of Demands Resets</td>
<td>Number of Demands Resets</td>
</tr>
<tr>
<td>Time Left in Demand</td>
<td>Time Left in Demand</td>
</tr>
<tr>
<td>Number of Power Outages</td>
<td>Number of Power Outages</td>
</tr>
<tr>
<td>Potential Transformer Ratio</td>
<td>Potential Transformer Ratio</td>
</tr>
<tr>
<td>Current Transformer Ratio</td>
<td>Current Transformer Ratio</td>
</tr>
</tbody>
</table>

EnerVista Software

EnerVista Launchpad
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 Multilin Products.

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.

EnerVista 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 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 EnerVista Integrator is:
• OPC/DDE Server

EPM 5100 Guideform Specifications
For an electronic version of the EPM 5100 guideform specifications, please visit: www.GEMultilin.com/specs, fax your request to 905-201-2098 or email to literature.multilin@ge.com.

EPM 5100 Dimensions

EPM 5100 Dimensions Diagram
EPM 5100 Technical Specifications

**INPUTS**
- **INPUT VOLTAGE RANGE**
  - Direct 3 phase L-N & L-L: 69,120,240,277,345,480 and 600 Vac RMS, 15% to 100%.
  - Through PT (programmable ratio): Up to 200kV max.

- **INPUT CURRENT RANGE**
  - 50% input at full scale - Nominal.
  - Programmable CT ratio with up to 500 kA max reading.

- **INPUT WITHSTAND CAPABILITIES**
  - Continuous Overload - 10 amps RMS.

**OUTPUTS**
- Options - Pulse Output
- 2 programmable KYZ outputs

**METERING**
- **METERING ACCURACIES OF EPM 5100**
<table>
<thead>
<tr>
<th>Function</th>
<th>Accuracy (% of Reading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMS Current</td>
<td>0.25</td>
</tr>
<tr>
<td>Neutral Current</td>
<td>1.00</td>
</tr>
<tr>
<td>RMS Voltage L-N</td>
<td>0.25</td>
</tr>
<tr>
<td>Watts</td>
<td>0.25</td>
</tr>
<tr>
<td>vars</td>
<td>0.5</td>
</tr>
<tr>
<td>Voltamperes</td>
<td>1.00</td>
</tr>
<tr>
<td>Power Factor</td>
<td>0.5</td>
</tr>
<tr>
<td>Energy</td>
<td>0.5</td>
</tr>
<tr>
<td>Frequency</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**BURDEN**
- **Voltage:** 8.5 VA/Phase A
- **Current:** 0.25 VA

**ENVIRONMENTAL**
- **Parameter** | **Value**
  - Operating temperature: -20° to 70° C
  - Storage temperature: -30° to 80° C non-condensing
  - Relative humidity: 5% to 90% non-condensing
  - Vibration response and endurance: IEC 255-21-1, Severity Class 1
  - Surge - fast transient and oscillatory: ANSI C37.90.1
  - Radiated EMI withstand capability: ANSI C37.90.2
  - Electrostatic discharge: IEC 801-2, Severity Class 4
  - UL listed: C22.2 No. 1-M91, C22.2 No. 14-M91
  - CSA certified: C22.2 No. 0-M91, C22.2 No. 14-M91

**SENSING METHOD**
- 480 samples per second

**UPDATE TIME**
- 3 second

**COMMUNICATIONS**
- Modbus Protocols: up to 19,200 baud

**FREQUENCY RANGE**
- Fundamental 45-65 Hz

**MOUNTING**
- Semi Flush Panel Mount
- S1 Case for DS 63 and DS65

**DIMENSIONS**
- **EPM 5100**
  - Height: 9.12"
  - Width: 6.625"
  - Depth: 6.938"

- **EPM 5100 Panel Mount**
  - Height: 8.45"
  - Width: 6.55"
  - Depth: 2.5"

*Specifications subject to change without notice.*

---

**Ordering**

**EPM 5100 Meter with Pulse Comm & Pulse Circuits Volts Wires Stators CTs**
- PLE3ESAG02  PLE3ESAG14  69 Volts 4Y Wires 3 stators 3 CTs
- PLE3ESBG02  PLE3ESBG14  120 Volts 3 Wires 2 stators 2 CTs
- PLE3ESCG02  PLE3ESCG14  240 Volts 3 Wires 2 stators 2 CTs
- PLE3ESDG02  PLE3ESDG14  277 Volts 4Y Wires 3 stators 3 CTs
- PLE3ESLG02  PLE3ESLG14  345 Volts 4Y Wires 3 stators 3 CTs
- PLE3ESLG02  PLE3ESLG14  480 Volts 3 Wires 2 stators 2 CTs
- PLE3ESGG02  PLE3ESGG14  600 Volts 3 Wires 2 stators 2 CTs

**EPM 5100 Panel Mount Meter with Pulse Comm & Pulse Circuits Volts Wires Reference Stators CTs**
- PLE3PLNAG02  PLE3PLNAG14  69 Volts 4Y Wires 3 stators 3 CTs
- PLE3PLNGB02  PLE3PLNGB14  120 Volts 3 Wires 2 stators 2 CTs
- PLE3PLNCG02  PLE3PLNCG14  240 Volts 3 Wires 2 stators 2 CTs
- PLE3PLNLDG02  PLE3PLNLDG14  277 Volts 4Y Wires 3 stators 3 CTs
- PLE3PLNLEG02  PLE3PLNLEG14  345 Volts 4Y Wires 3 stators 3 CTs
- PLE3PLNFG02  PLE3PLNFG14  480 Volts 3 Wires 2 stators 2 CTs
- PLE3PLNGLG02  PLE3PLNGLG14  600 Volts 3 Wires 2 stators 2 CTs

**Accessories**
- PLA3CMAG01 Modbus card
- PLE3CSEG01 Power Leader™ case
- PLE2RPG01 Power Leader™ cover
- PLE2ADPG01 Mounting plate