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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 45 to 65 Hz

Communications

- Modbus open protocol communication over industry standard RS 485.
- KYZ pulse output for PLC and other device interfaces

Multilin

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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 meats 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

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

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

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.

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 nates, 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

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- Trending Reports
- Automatic Event Retrieval
- Automatic Waveform Retrieval

EnerVista Integrator

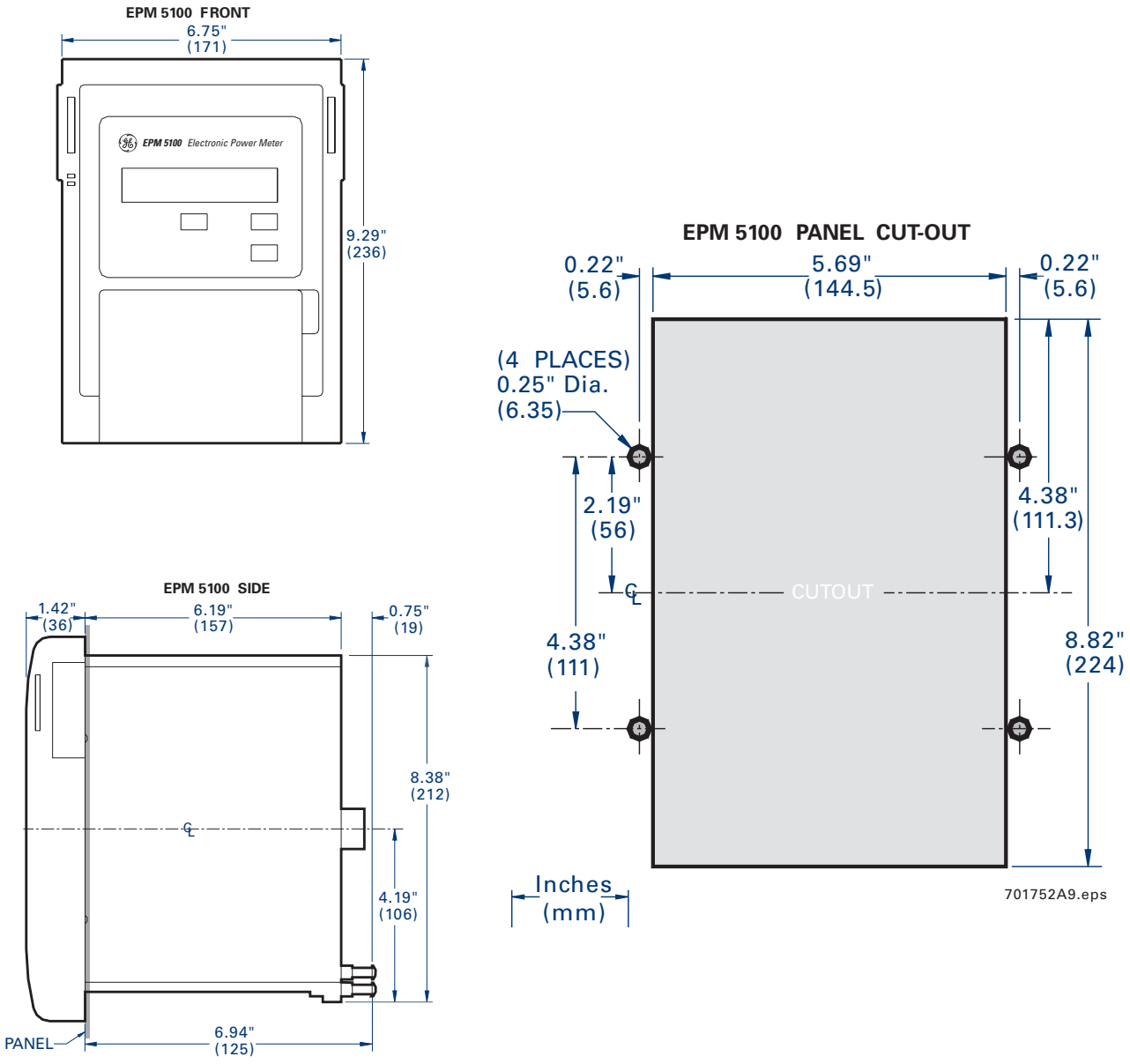
EnerVista Integrator is a toolkit that allows seamless integration of GE Multilin devices into new or existing automation systems by sending GE device data to HMI, DCS, and SCADA systems. Included in EnerVista Integrator is:

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

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



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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/+10%
Through PT (programmable ratio): Up to 200kV max

INPUT CURRENT RANGE
5A 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

FUNCTION	Accuracy (±%) of Reading
RMS Current	0.25
Neutral Current	1.50
RMS Voltage L-N	0.25
RMS Voltage L-L	0.75
Watts	0.5
Vars	0.5
Voltamperes	0.5
Power Factor	1.0
Energy	0.5
Frequency	0.5

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
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	1244, 508
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	Meter with ModBus RTU Comm & Pulse	Circuits Volts	Wires	Reference Stators	CTs
PLE3ESAG02	PLE3ESAG14	69 Volts	4Y Wires	3 stators	3 CTs
				2.5 stators	
PLE3ESBG02	PLE3ESBG14	120 Volts	3 Wires	2 stators	2 CTs
			4Y Wires	3 stators	3 CTs
			4Y Wires	2.5 stators	3 CTs
PLE3ESCG02	PLE3ESCG14	240 Volts	3 Wires	2 stators	2 CTs
			4Y Wires	3 stators	3 CTs
			4Y Wires	2.5 stators	3 CTs
PLE3ESDG02	PLE3ESDG14	277 Volts	4Y Wires	3 stators	3 CTs
				2.5 stators	
PLE3ESEG02	PLE3ESEG14	345 Volts	4Y Wires	3 stators	3 CTs
				2.5 stators	
PLE3ESFG02	PLE3ESFG14	480 Volts	3 Wires	2 stators	2 CTs
PLE3ESGG02	PLE3ESGG14	600 Volts	3 Wires	3 stators	2 CTs

EPM 5100 Panel Mount

Meter with Pulse	Meter with ModBus RTU Comm & Pulse	Circuits Volts	Wires	Reference Stators	CTs
PLE3PNLAG02	PLE3PNLAG14	69 Volts	4Y Wires	3 stators	3 CTs
				2.5 stators	
PLE3PNLBG02	PLE3PNLBG14	120 Volts	3 Wires	2 stators	2 CTs
			4Y Wires	3 stators	3 CTs
			4Y Wires	2.5 stators	3 CTs
PLE3PNLCG02	PLE3PNLCG14	240 Volts	3 Wires	2 stators	2 CTs
			4Y Wires	3 stators	3 CTs
			4Y Wires	2.5 stators	3 CTs
PLE3PNLDG02	PLE3PNLDG14	277 Volts	4Y Wires	3 stators	3 CTs
				2.5 stators	
PLE3PNLEG02	PLE3PNLEG14	345 Volts	4Y Wires	3 stators	3 CTs
				2.5 stators	
PLE3PNLFG02	PLE3PNLFG14	480 Volts	3 Wires	2 stators	2 CTs
PLE3PNLGG02	PLE3PNLGG14	600 Volts	3 Wires	3 stators	2 CTs

Accessories

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

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