

Multilin™ EPM 2200

POWER METER

High Accuracy Power
and Energy Measurement



KEY BENEFITS

- Economical meter for Circuit Monitoring of Panels, Main Feeds, Branch Circuits, & Gensets
- Ultra compact, easy to install, program and use
- Fits both ANSI and DIN cutout
- Large 3 line .56" bright LED display for better visibility and longer life.
- User programmable for different system voltages and current measurements
- Optional Modbus Communications

APPLICATIONS

- Monitoring & metering of electrical loads such as generator panels, feeders, switchgear etc.
- Low and medium voltage applications

FEATURES

Monitoring and Metering

- Future field Upgradeable for added functionality (communications option required)
- 0.5% Accuracy
- Measures 3-phase real-time amps and volts
- Optional support for Power, Energy, Frequency, and Power Factor measurements

Communications

- 3 Line .56" Bright Red LED Display
- Intuitive faceplate programming
- Optional RS485 Modbus up to 57.6K Baud and Pulse output

Features

The EPM 2200 meter measures more than 40 electrical power parameters providing a low-cost, multifunction monitoring solution for industrial and power generation applications. EPM 2200 can easily be mounted in a panel for generator monitoring, substation automation and more. The meter can also provide data to RTUs, PLCs and other control devices.

Metering

The following electrical parameters are measured and displayed locally on the LED display and can be remotely accessed from the EPM 2200.

Software Option	Measured Values	Real-Time	Avg	Max	Min
A1 Voltage and Current	Voltage L-N	*		*	*
	Voltage L-L	*		*	*
	Current Per Phase	*	*	*	*
	Current Neutral	*			
	% of Load Bar	*			
	Voltage Angles	*			
B1 The above plus: Power and Frequency	Current Angles	*			
	Watts	*	*	*	*
	VAR	*	*	*	*
	VA	*	*	*	*
	PF	*	*	*	*
C1 The above plus: Energy	Frequency	*		*	*
	+Watt-hr	*			
	-Watt-hr	*			
	Watt-hr Net	*			
	+VAR-hr	*			
	-VAR-hr	*			
	VAR-hr Net	*			
VA-hr	*				

Universal Voltage and Current

This meter allows voltage input measurements up to 416 Volts Line to Neutral and 721 volts Line to Line. This insures proper meter safety when wiring directly to high voltage systems. The unit will perform to specification on 69 Volt, 120 Volt, 230 Volt, 277 Volt and 347 Volt power systems.

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Unique Current Input Connections

EPM 2200 meter uses two current input wiring methods.

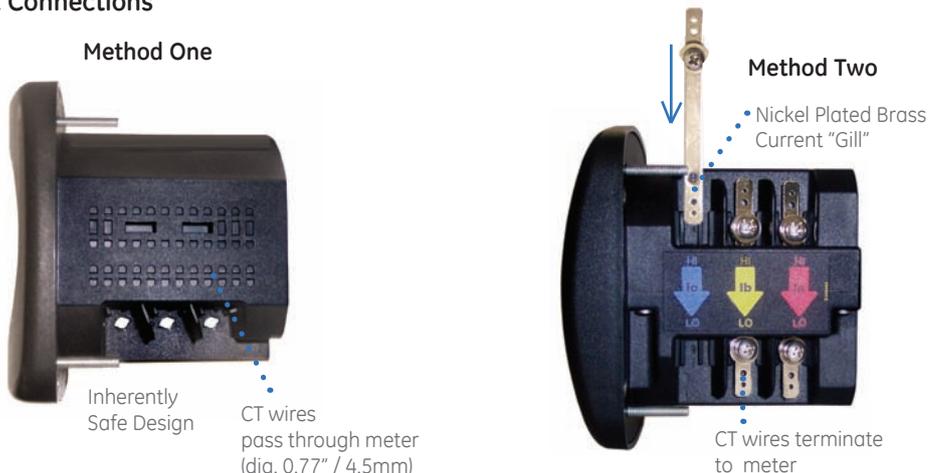
- Method One - CT pass through. Directly pass the CT through the meter without any physical termination on the meter. This insures that the meter cannot be a point of failure on the CT circuit. This is preferable to utility users when sharing relay class CTs. No Burden is added to the secondary CT circuit.
- Method Two - Current "Gills." The meter additionally provides ultra-rugged termination pass through bars allowing the CT leads to be terminated on the

meter. This also eliminates any possible point of failure at the meter. This method is also a preferred technique for ensuring relay class CT integrity does not get compromised. No terminal blocks are required and this stud based design ensures that CTs will not open under a fault condition.

Communications

Through an optional high speed Modbus communications interface, the meter can also provide data to RTUs, PLCs and other control devices at Baud rates ranging from 9600 baud to 57.6 kbaud.

Current Input Connections



Solid Construction with Mounting Versatility

The EPM 2200 has a rugged design for harsh environment. This is especially important in power generation, utility substation, and critical user applications. The structural and electrical design of this meter was developed based on the recommendations and approvals of many of our utility customers.

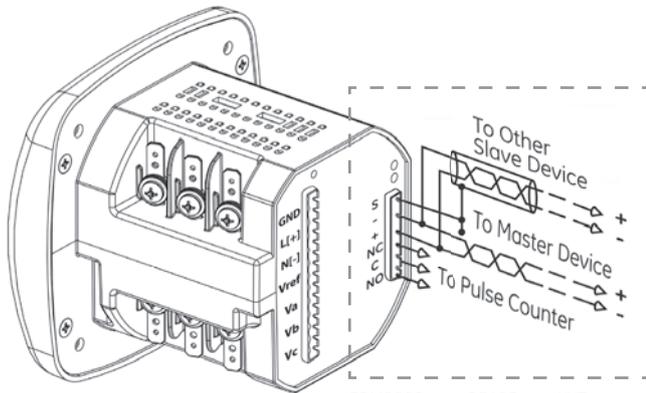
EPM 2200 can easily be mounted in a panel for generator monitoring, substation automation and more. The unique dual design combines ANSI and DIN mounting structure and allows easy installation for both new metering applications and retrofit of existing analog meters.

The unit mounts directly in an ANSI C39.1 (4" Round form) or an IEC 92 mm DIN square form.

Simple Installation and Programming

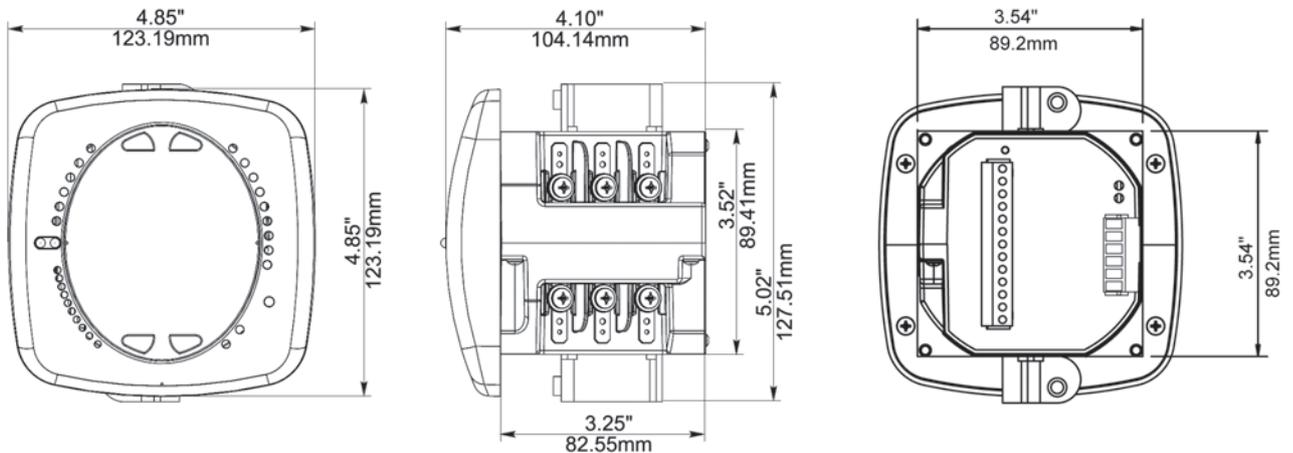
EPM 2200 is intuitive so that a new user can easily program and set-up the meter. All wiring inputs are color coded with clear labeling to avoid cross wiring mistakes by installers. The meter has built in programmable auto scroll features to display multiple values without having to press keys.

RS485 COM Port and Pulse Counter



EPM2200 with RS485 and KYZ pulse output

Dimensions and Mounting



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: 0.0144VA/Phase at 120 Volts
- Input wire gauge max (AWG 12 / 2.5mm²)

CURRENT INPUTS

- Class 10: 5 Amps Nominal / 10Amps 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

UPDATE RATE

- All parameters up to 1 second

POWER SUPPLY

- 90-265 VAC @50/60Hz
- Consumption 5VA

COMMUNICATIONS

- Optional RS485 Communications Port
 - Through Backplate
 - Protocol Modbus RTU or ASCII
 - Com Port Baud Rate: 9600 to 57.6K
 - Com Port Addresses: 001-247
 - 8 Bit, No Parity

METERING ACCURACY

Measured Parameters	Accuracy% of Reading	Display Range
Voltage L-N	0.2%	0-9999 V or kV
Voltage L-L	0.4%	0-9999 V or kV
Current	0.2%	0-9999 Amps or kAmps
+/- Watts	0.5%	0-9999 Watts, kWatts, MWatts
+/-Wh	0.5%	5 to 8 Digits Programmable
+/-VARs	1.0%	0-9999 VARs, kVARs, MVARs
+/-VARh	1.0%	5 to 8 Digits Programmable
VA	1.0%	0-9999 VA, kVA, MVA
VAh	1.0%	5 to 8 Digits Programmable
PF	1.0%	+/- 0.5 - 1.0
Frequency	+/- 0.01 Hz	45-65 Hz
% Load	+/- 1 segment	10 Segment Scale

PULSE OUTPUT

- Optional KYZ pulse on back plate

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:** -10° C to +60° C
- Humidity:** to 95% RH Non-Condensing
- Faceplate Rating:** NEMA12 (Water Resistant) Mounting Gasket Included

COMPLIANCE

- IEC 62053-22 (0.5% Accuracy)
- ANSI C 12.20 (0.5% 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:** Recognized under UL USA (#E250818)
- cUL:** Recognized under UL Canada
- CE:** Conforms to European CE standards

Ordering

PL 2200

Option

*
A1
B1
C1

*
X
S

Description

Volts and Amps Meter
 Volts, Amps, Power and Frequency
 Volts, Amps, Power, Frequency and Energy Counters
 None
 RS485 + Pulse

Example1 - EPM 2200 support Voltage and Current measurement with no communications. PL2200A1X

Example 2: EPM 2200 support Voltage, Current, Power, and Frequency measurement and Energy counters measurement with RS485 communication. PL2200C1S