Multilin EPM 7000P

Versatile Power Quality Metering with Logging and Flexible Communications

The Multilin™ EPM 7000P is a versatile power quality meter offering that can be used for a wide range of high accuracy revenue and power quality applications for both Utility and Industrial customers.

Along with high accuracy and logging capabilities, the EPM 7000P provides flexible and customizable optional input/output (I/O) configurations (relay, status, and analog output) along with a variety of communication options (Modbus, Level 2 DNP3, GE EGD and IEC 61850) as well as a web server for easy system integration and communications. The EPM 7000P provides users with logging of accurate power quality and event information; and limit alarm triggers; allowing users to analyze historical trends and perform post fault investigations.

The EPM 7000P is also an enhanced, direct retrofit upgrade replacement for the EPM 7000 and is also available in a transducer version (EPM 7000PT) without display.

Key Benefits

- Ideal power quality monitoring and revenue metering solution for utility substations, renewables, advanced industrial manufacturing, datacenters and hospitals applications utilizing high resolution waveform recording (up to 512 samples/cycle)
- Field upgradable functionality for future requirements with communications and I/O cards as well as software option functionality upgrades and logging memory (up to 128MB) to log years of captured data
- Flexible installation mounting with standard ANSI cutout as well as available optional meter enclosures for retrofit applications and no display transducer version (EPM 7000T) for DIN rail mounting
- Direct retrofit upgrade for EPM 7000/7000T with same wiring/cutout for Meter Unit installation

Applications

- New or retrofit (Available enclosures) revenue energy billing or reconciliation (demand, time of use) for utility or industrial applications
- Power quality studies/alarming/event capture for utility or industrial event investigation/reconciliation, ensuring uptime and predictive maintenance for critical power quality sensitive assets (Utility substation, Data Centers, Manufacturing, Hospitals)
- Collection of Energy/Power Quality Monitoring parameters for integration to other Energy Management Systems or visualization through EPM 7000P Web Server.

Advanced Monitoring and Metering

- 0.06% Energy Accuracy (ANSI C12.20 0.1% Accuracy Class) also conforms to IEC 62053-22 CL 0.2S
- Harmonics to the 40th order (Voltage, Current)
- Up to 512 samples/cycle based measurements and 128 MB of logging memory
- Comprehensive revenue energy measurement with onboard Time of Use (TOU), CT/PT Compensation, Test Mode and Energy presets, pulse accumulation

Flexible Communications and Control

- Multiple communications ports including standard USB Front Port and up to 2 optional Serial RS485 ports or up to 2 optional Ethernet ports (RJ45 or ST Fiber Optic) with independent unique IP addresses
- Support for Modbus (RTU, TCP/IP), DNP 3.0, IEC 61850 and GE EGD Protocols
- Customizable and upgradable Input/Output (I/O) options (Up to 8 Pulse Output and 8 Pulse inputs) and Software options for increased functionality

User Friendly with Low Commissioning Effort

- Software based configuration using GE Communicator software
- Advanced Web Server for data visualization and waveform Analysis
- Available DIN mountable transducer option EPM 7000PT
- Standard conformal coating for harsh environment installation
- Direct retrofit upgrade for EPM 7000/7000T

imagination at work

Enhanced Revenue and Power Quality Metering

The EPM 7000P has been designed with features to satisfy both revenue and power quality metering for utility substation and industrial applications.

Accurate Revenue Energy Metering

The EPM 7000P provides several features to support accurate Revenue Energy metering including: an Energy Test Pulse; ANSI C12.20 0.1% and IEC 62053-22 CL 0.2S Accuracy Class certification; Time of Use; CT/PT Compensation.

This allows the EPM 7000P the flexibility and capability to be installed either as a utility or industrial device to ensure accurate readings and assist with reconciliation of energy consumption.

Time of Use (TOU)

The EPM 7000P has been enhanced with a Time of Use (TOU) perpetual calendar that requires setup only initially and accounts for calendar updates over time (leap years, months) without further manual intervention.

The TOU implementation allows the user to set up and account for rate schedules. It also allows the user to customize time parameters (seasons, months, etc) to apply rate schedules for TOU. There are 16 available TOU registers that can be configured not only for TOU meter energy readings, but also for stored data from input pulses or totalizers.

- TOU Perpetual Calendar: requires only initial set up without further manual intervention to maintain calendar
- Setup up to four customized seasons; 12 months (set independently from seasons; flexible billing periods, rates, holidays, schedules
- Perform TOU on up to 16 configurable datasets consisting of 38 channels of data, including energy channels, pulse data, readings per quadrant and phase, and pulse aggregators.
- Values for cumulative and continuous cumulative demand

CT/PT Compensation

The EPM 7000P can compensate for the inaccuracies of the instrument transformers by allowing for adjustments to amplitude and phase angle adjustments. CT reversal setting is also supported.
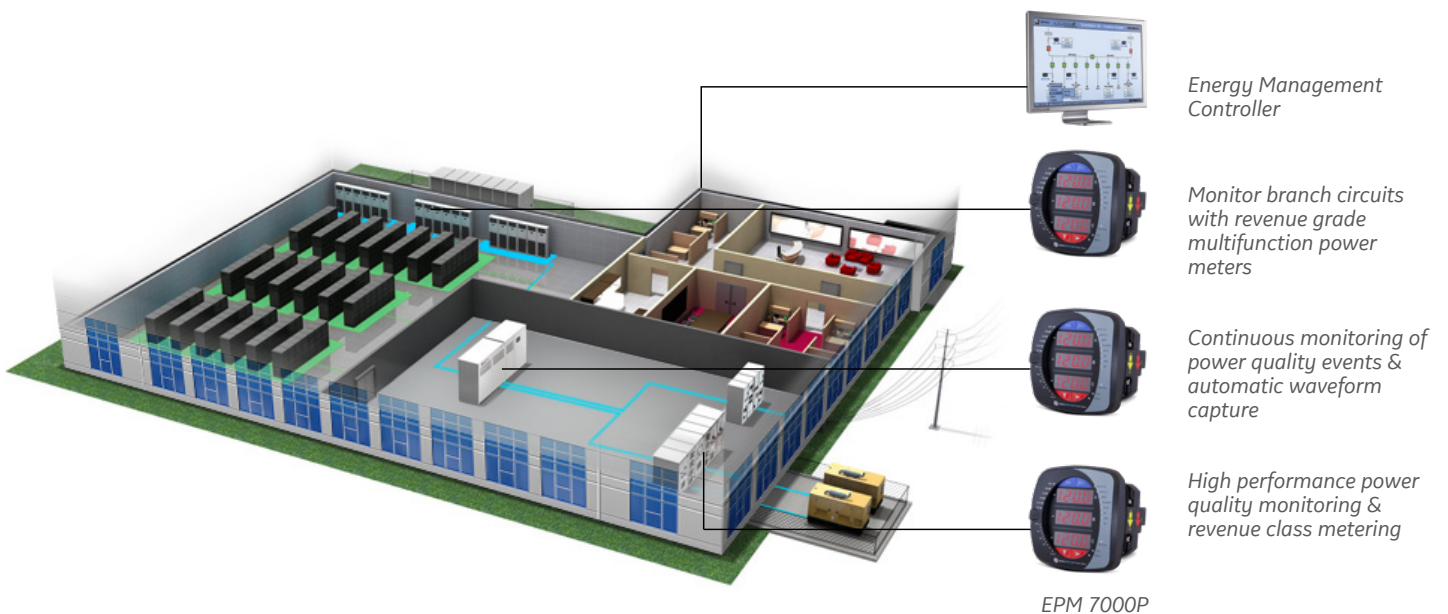
Loss Compensation

The EPM 7000P can compensate for energy readings for transformer and line losses. A utility can properly bill a customer for usage even if the meter is placed on the secondary side of the transformer.

Multifunction Metering & Power Quality Monitoring

The EPM 7000P can provide a total picture usage and power quality as different points within a power distribution network on critical infrastructure such as data centers, allowing users to make power related decisions quickly and effectively.

Energy Management Controller

Monitor branch circuits with revenue grade multifunction power meters

Continuous monitoring of power quality events & automatic waveform capture

High performance power quality monitoring & revenue class metering

EPM 7000P

Actionable Power Quality Insight and Analysis

Accurate, high resolution, comprehensive power quality information is essential in resolving and mitigating both post fault potential future system uptime challenges as well as protect valuable essential assets and processes in utility and industrial customers.

The EPM 7000P captures and stores comprehensive power quality information, including harmonics, waveforms, sags and swells providing a detailed log of power quality information, faults and disturbances for analysis.

Along with the logged information the EPM 7000P also has the ability to setup multiple programmable limits and notifications to help operator monitoring.

Harmonic Analysis

• View real-time harmonic magnitudes to the 40th order for each voltage and current channel

• With stored waveforms, harmonic analysis is available to the 255th order

Waveform Recording

To troubleshoot, remedy and predictively analyze potential system challenges, the EPM 7000P can optionally record waveforms at a sampling rate of up to 512 samples/cycle to capture power quality events, such as sags or swells and log these records in up to 128MB of storage. Waveform data is stored in a circular buffer, ensuring that data is recorded.

| Software Option	Samples per cycle	Pre Event Cycles	Post Event Cycles	Max Waveform per Event
C	16	32	96	256
	32	16	48	128
	64	8	24	64
	128	4	12	32
D	256	2	6	16
	512	1	3	8

Independent CBEMA (or SEMI F47) Log Plotting

The EPM 7000P meter stores data in an independent CBEMA or SEMI F47 log for magnitude and duration of voltage events. This allows a user to quickly view total surges, total sags and duration without retrieving waveform data. Time stamps are stored with millisecond accuracy.
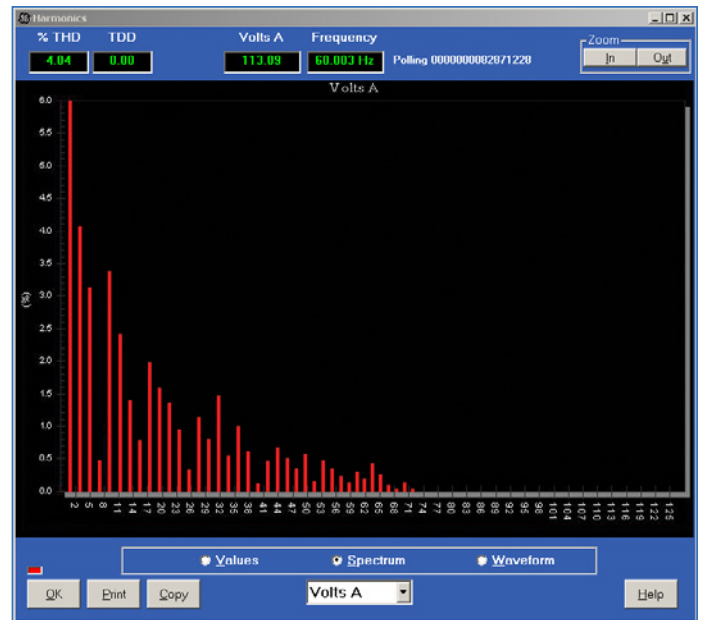
Harmonic Spectrum
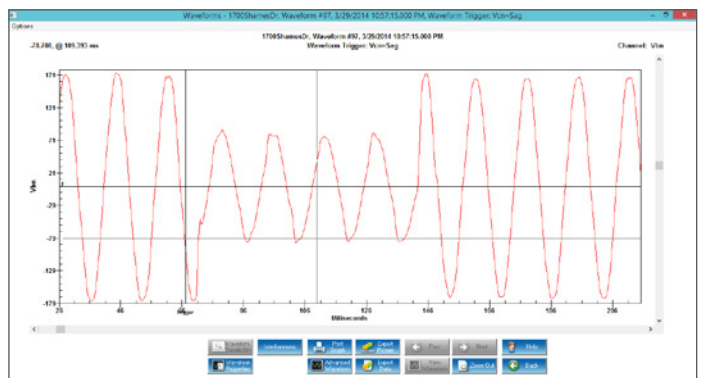
Record and Analyze Waveform Fault and Transient Data
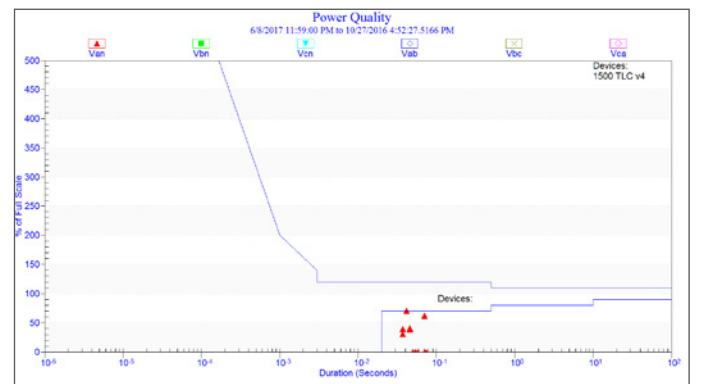
Visualize Power Qualty Data

Comprehensive, Upgradable Features

Along with basic standard features (Software Option A) the EPM 7000P provides field upgradeable, post installation Software Options. An unlock key for the higher Software Option can be entered in the GE Communicator Setup software providing more functionality with the same installed unit in the future. The following table illustrates the available features and upgrades:

GE EPM 7000P/PT FEATURES	SOFTWARE OPTION A	SOFTWARE OPTION B	SOFTWARE OPTION C	SOFTWARE OPTION D
BASIC MEASUREMENTS				
Multifunction Measurement (Voltage, Current)	•	•	•	•
Time of Use	•	•	•	•
CT/PT Compensation	•	•	•	•
Transformer/Line Compensation	•	•	•	•
POWER QUALITY MEASUREMENTS				
THD and Harmonics	•	•	•	•
Waveform Recording Sampling Rate			128 Samples/Cycle	512 Samples/Cycle
STORAGE				
Memory for logging		2MB	10MB	128MB
System Events		•	•	•
Waveform Log			•	•
Limit Log	•	•	•	•
Input Status Change	•	•	•	•
COMMUNICATION				
Modbus	•	•	•	•
DNP 3.0 Level 2	•	•	•	•
IEC 61850 (E2 Option)		•	•	•

Embedded Web

The EPM 7000P with Ethernet (E1, E2 options) includes a secure web server that is viewable from a variety of web browsers. The web server supports multiple simultaneous connections to view the following information:

- Voltage and Current Reading
- Power and Energy Readings
- Power Quantity Information
- General Meter Information

Extensive Logging Capability

The EPM 7000P provides up to 128MB of memory for logging.

Through upgradable Software Options, the memory can be upgraded as requirements change from a multifunction meter with no logging to a logging capability up to 128MB.

The logging capability of the EPM 7000P provides:

- Detailed information for analysis during Power Quality and/or Load studies
- Logged data for Historical Logs; Meter System Events; I/O Changes; and Limits/Alarms

Historical Logs

- Configure logging values with up to 6 assignable historical logs
- Independently programmed trending profiles
- Up to 64 parameters per log

System Events Log

To protect critical information captured by the EPM 7000P, the meter records and logs the following System Events with a time stamp to log and track:

- System startup
- Programmable settings changes
- Password requests/sealing switch changes
- Demand resets
- Energy resets
- Log resets
- Critical data repairs

Input/Output (I/O) Change Log

- Provides a time stamped log of meter I/O relay outputs; input status changes
- Ability to capture up to 2048 events

Limit/Alarm Log

- Provides magnitude and duration of an event
- Includes time stamps and alarm value
- Ability to capture up to 2048 events
- Capability to send Alarm Email with E1 Ethernet card option

Limit Alarms and Control Capability

- Ability to set up to 16 Limit Alarms on measured parameters
- Monitor Voltage/Current unbalance
- Set Alarms based on % of full scale settings

GE EPM 7000P/PT FEATURES	SOFTWARE OPTION C	SOFTWARE OPTION D
Storage and Logging Memory	10MB	128MB
Waveform Recording	Up to 128 Samples/cycle	Up to 512 Samples/cycle
Estimated Logging Capability	• 36 months of recording and storage for 4 energy values recorded every 15 mins • Up to 79 Waveform records	• 76 months of recording and storage for 4 energy values recorded every 15 mins • Up to 319 Waveform records
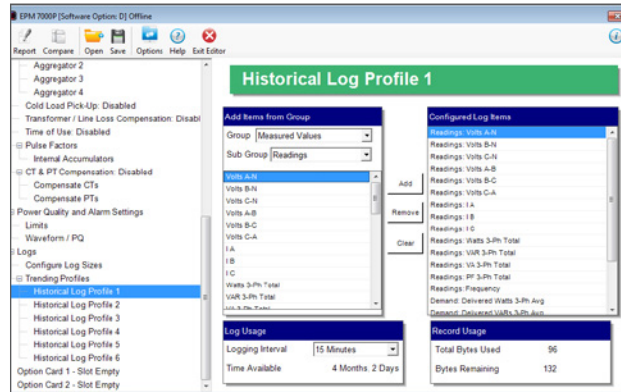
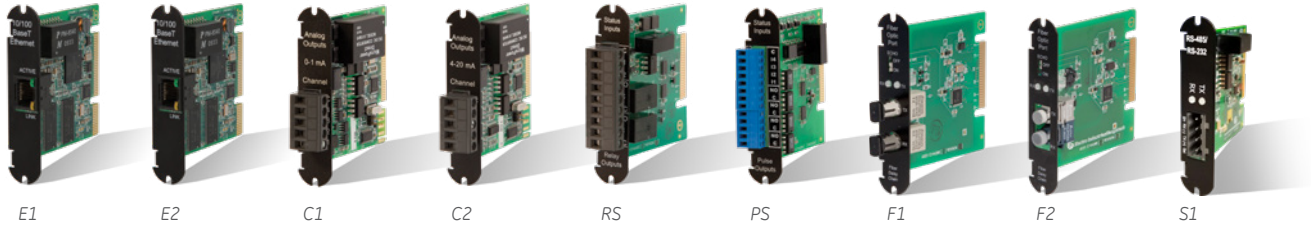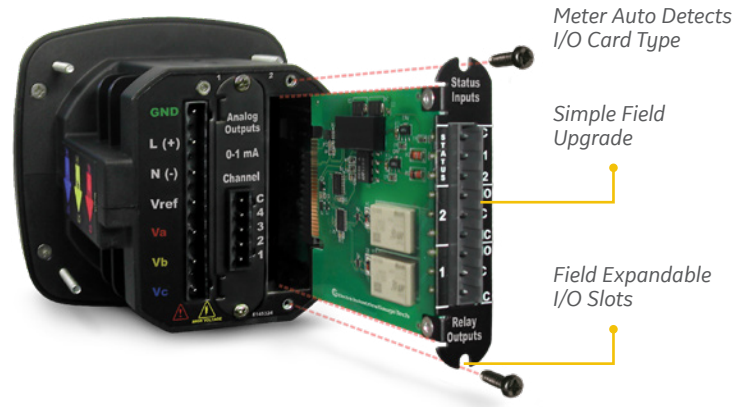Configure up to 6 Historical Logs
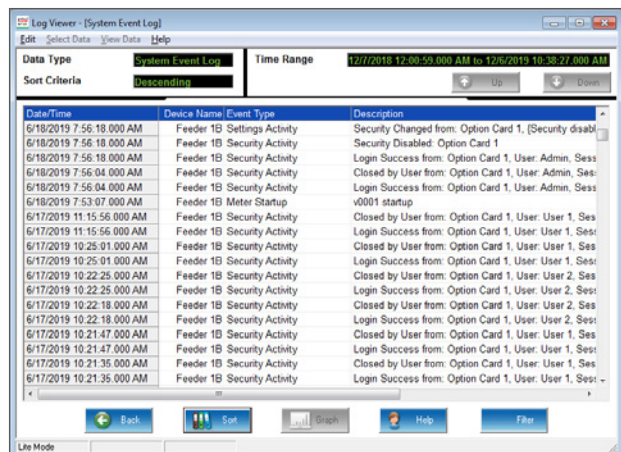
View System Events
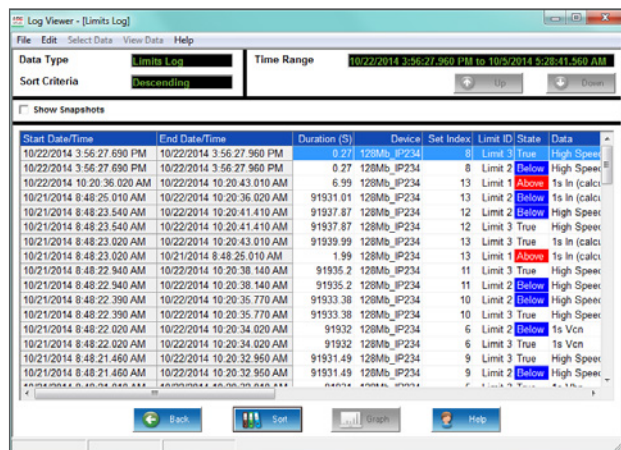
Limit log viewer

Flexible, Expandable Communications and I/O Cards

The EPM 7000P provides two universal option slots for communications and/or I/O. The unit can be easily configured to accept new I/O cards even after installation by auto-detecting installed I/O option cards. Up to 2 cards of can be used for communications and or I/O per meter providing a range of integration possibilities.

Along with I/O expandability the EPM 7000P can integrate with many different systems, using multiple standardized protocols such as Modbus RTU/ASCII/TCP, Level 2 DNP3 and IEC 61850. Expandable communications cards allows customization for system requirements at time of purchase as well as in the future if requirements change.

Meter Auto Detects I/O Card Type

Simple Field Upgrade

Field Expandable I/O Slots

| E1 | E2 | C1 | C2 | RS | PS | F1 | F2 | S1 |

E1: 100BaseT Ethernet Card (Modbus, DNP3)

- 12 simultaneous Modbus TCP/IP connections
- 5 simultaneous Level 2 DNP3 over TCP/IP connections
- Network Time Protocol (NTP) support for high accuracy network time sync
- Embedded web server
- Available support for dual Ethernet Ports

E2: 100BaseT Ethernet with IEC 61850 Protocol

- Simultaneous Modbus TCP/IP and IEC 61850
- IEC 61850 Support including:
  - Configurable .CID file
  - 5 Simultaneous MMS Clients
  - Multiple Logical Nodes

C1: Four Channel Bi-directional 0-1mA Outputs

- Assignable to any parameter
- 0.1% of Full Scale
- Max Load Impedance 0 to 10KΩ

C2: Four Channel Bi-directional 4-20mA Outputs

- Assignable to any parameter
- 0.1% of full scale
- 850Ω, at 24VDC
- Loop powered using up to 24VDC

RS: Two Output Relays/ Two Status Inputs

- 250VAC/30VDC – 5A Relays, Form C
- Trigger on user set alarms
- Set delays and reset delays

PS: Four Pulse Outputs / Four Status Inputs

- Programmable to any energy parameter or pulse value
- Form A: Normally Open Contacts
- Can function for manual relay control and limit based control

F1: Fiber Optic Interface with ST Termination

- Daisy Chain switchable built-in logic mimics RS485 half duplex bus to support daisy chain for lower installation cost/ effort
- ST terminated
- Modbus and Level 2 DNP3 Protocols available

F2: Fiber Optic interface with Versatile Link Termination

- Daisy Chain switchable built-in logic mimics RS485 half duplex bus to support daisy chain for lower installation cost/ effort
- Versatile terminated
- Modbus and Level 2 DNP3 Protocols available

S1: Serial RS232/RS485 Communications

- Programmable RS485 or RS232 Port
- Adds up to 2 ports per meter in addition to the standard Serial RS485 port
- Supports one session at a time of DNP3 serial communication per meter

Easy to Use, Safe and Rugged Design

The front panel of the EPM 7000P provides users with an easy to read, 3 line LED Display as well as a USB Mini-B communications connection.

The EPM 7000P meter is also designed for harsh environments and features:

- Standard PCB conformal coating (Compliant to IEC 610186-1/2/3 (high reliability)) on all circuit boards
- Improved surge withstand capability
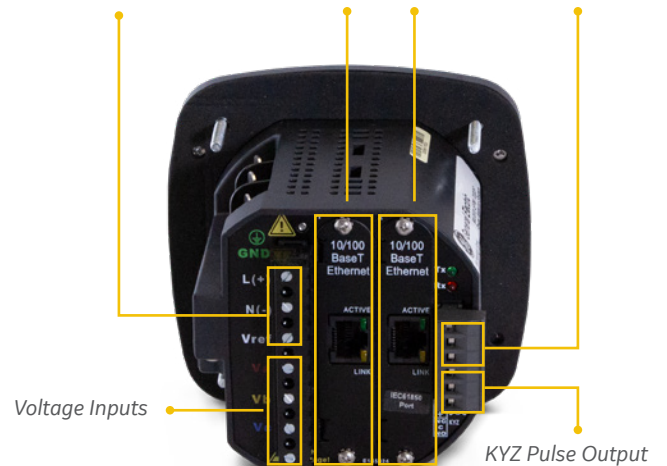- Intrinsically safe current transformer connections

3 Line Multifunction LED Display

USB Mini-B Connection

Power Supply Connections

Expandable I/O, Communication Slots

*RS485 Serial connection*

Voltage Inputs

KYZ Pulse Output

Safe Current Input Connections

EPM 7000P meter uses two safe current input wiring methods:

## Method 1 - CT Leads Pass Through (No Meter Termination)

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.

CT wire passing through meter

Current gills removed
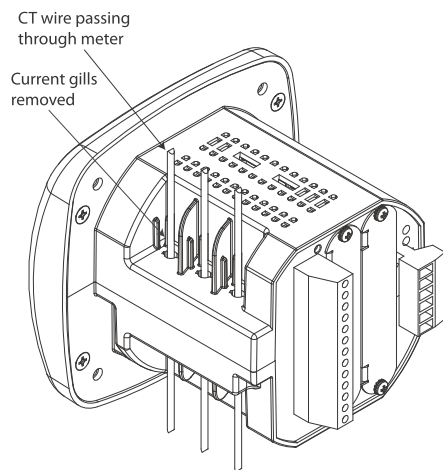
Pass Through Wire Electrical Connection

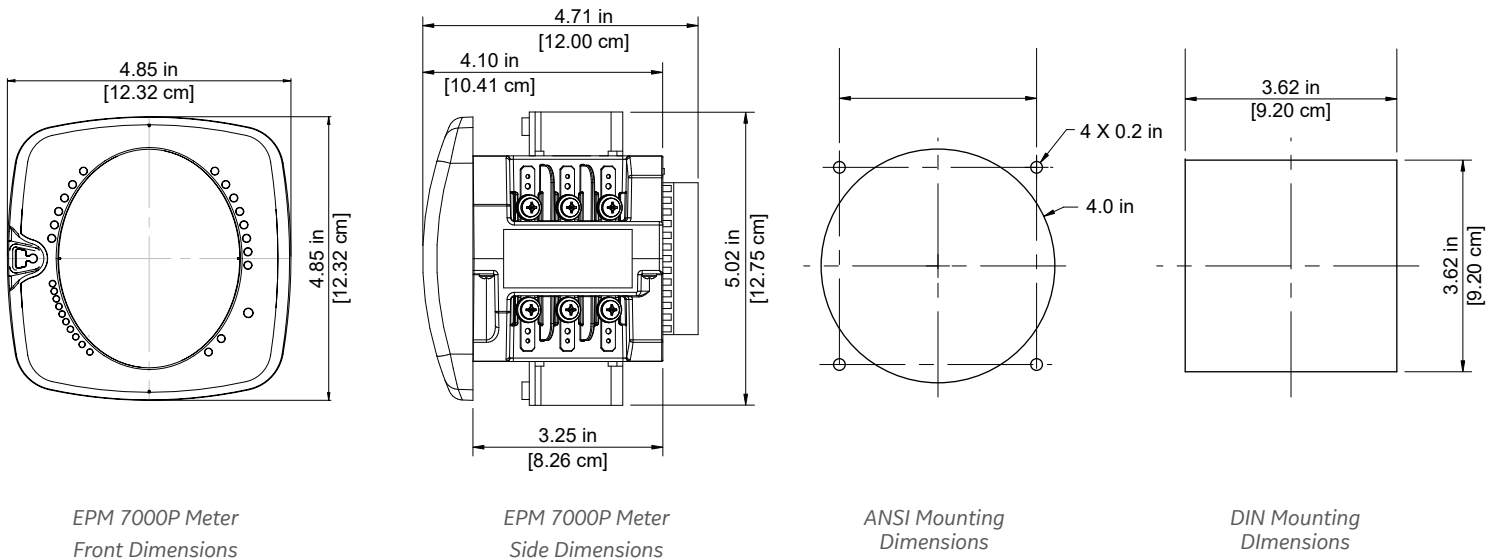## Method 2 - CT Leads Terminated to Meter

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.

Current gills (nickel-plated brass studs)
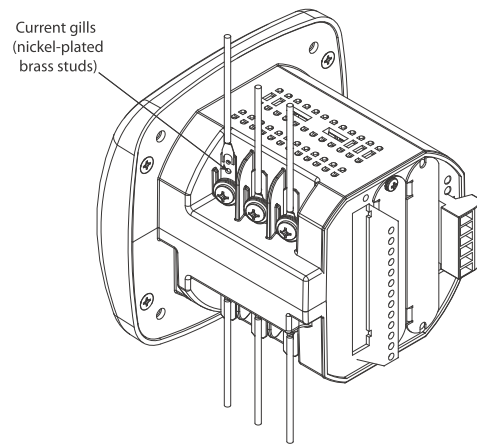
CT Leads Terminated to Meter

Dimensional Drawings

EPM 7000P

4.85 in
[12.32 cm]

4.85 in
[12.32 cm]

*EPM 7000P Meter
Front Dimensions*

4.71 in
[12.00 cm]

4.10 in
[10.41 cm]

5.02 in
[12.75 cm]

3.25 in
[8.26 cm]

*EPM 7000P Meter
Side Dimensions*

4 X 0.2 in

4.0 in

*ANSI Mounting
Dimensions*

3.62 in
[9.20 cm]

3.62 in
[9.20 cm]

*DIN Mounting
DImensions*

EPM 7000PT - Transducer

3.56
[9.04 cm]

3.56
[9.04 cm]

GND
L (+)
N (-)
Vref
Va
Vb
Vc

NC
C
NO

KYZ

ACTIVE

LINK
10/100 Base T

DANGER!
HIGH VOLTAGE

E145337

*EPM 7000PT Meter
Side Dimensions*

4.76
[12.10 cm]

4.14
[10.52 cm]

0.62
1.61 cm

3.56
[9.04 cm]

Ic Ib Ia
HI HI HI
LO LO LO

0.91
[2.31 cm]

3.25
[8.26 cm]
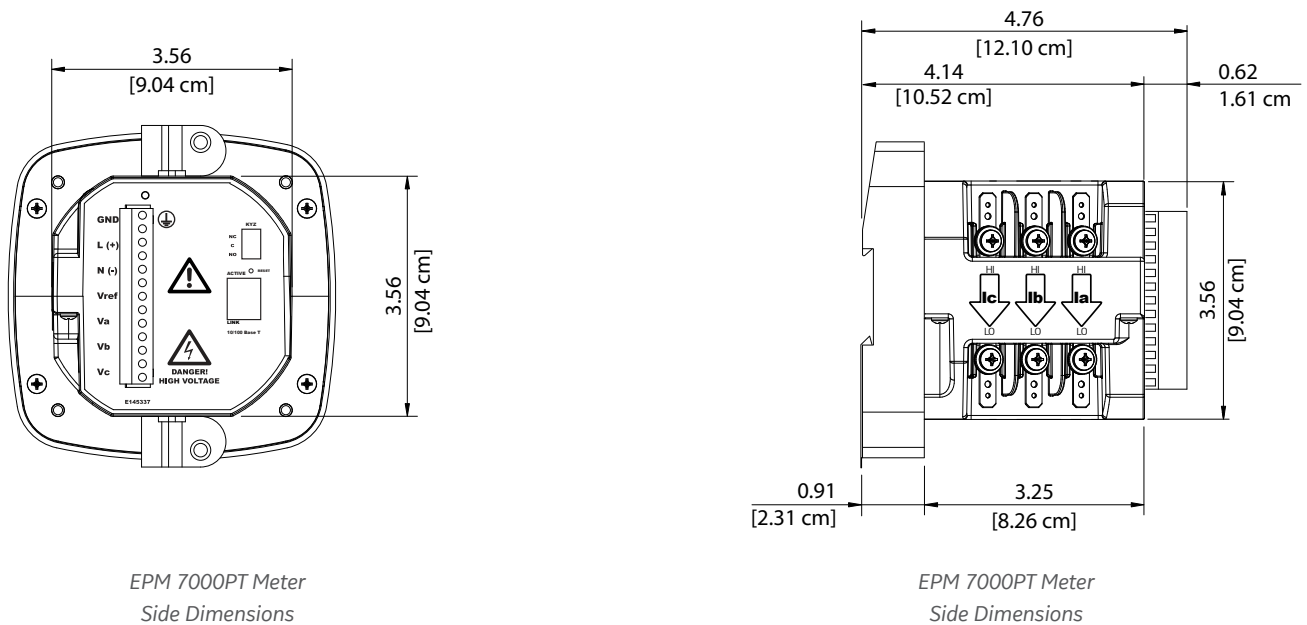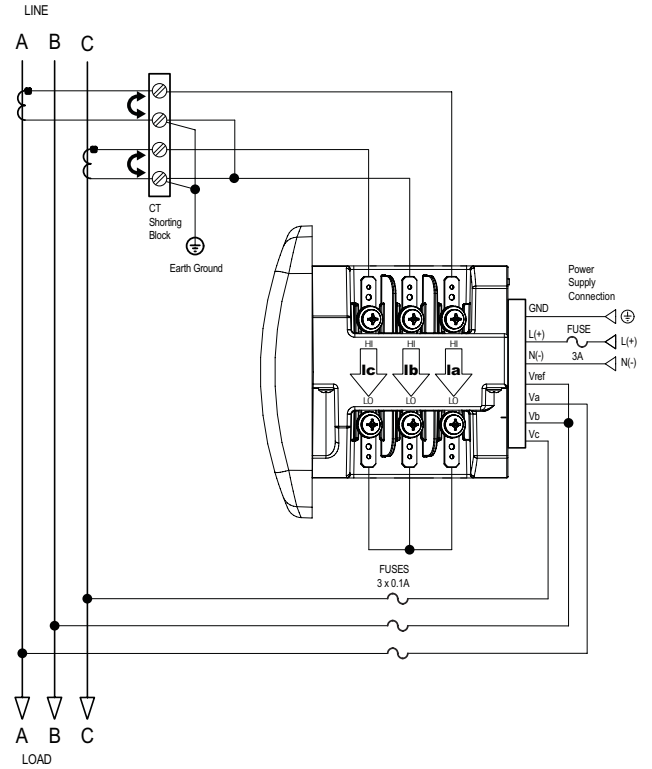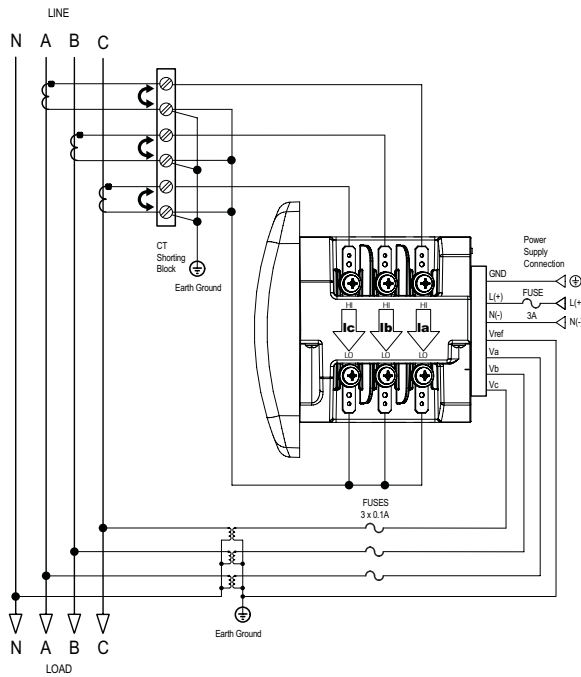
*EPM 7000PT Meter
Side Dimensions*
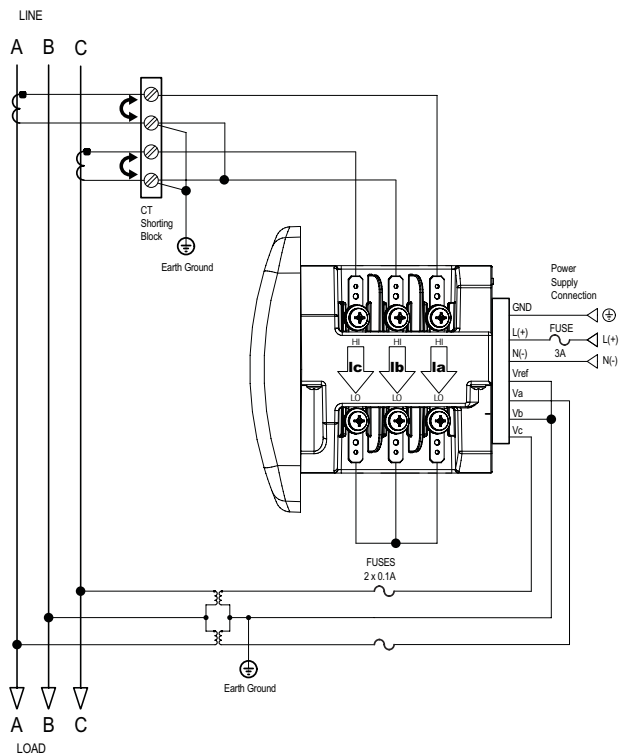
Wiring Diagrams
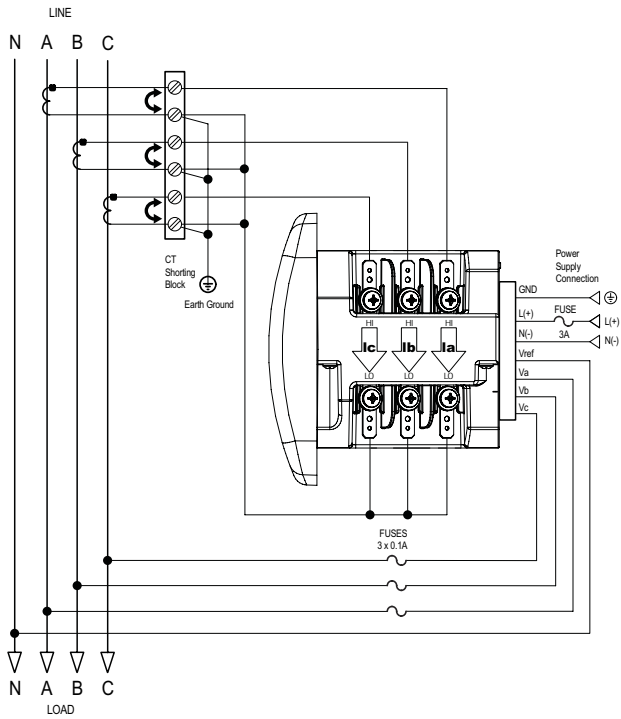
3-phase 4-wire WYE direct

3-phase 3-wire Delta direct

3-phase 4-wire WYE with PTs

3-phase 3-wire Delta with PTs

Multilin Meter Enclosure

Expanding existing switchgear or installing new metering capability can be challenging due to space limitations, downtime and installation and equipment costs. GE's Multilin Meter Enclosure is a pre-wired configured, economical solution for both retrofit expansions and small scale meter installations that allows the expansion of existing switchgear capability without expensive and time-consuming design.

When ordered as a meter option the enclosure provides a factory pre-wired, installation-ready metering solution that further drives energy cost savings, by enabling the measurement of key energy usage information along multiple metering points for new or existing systems.

Ordering the enclosure is simple when selected as an option during meter configuration, ensuring correct pre-wired meter-compatible delivery.

Pre-Wired, Configured and Economical Solution for Retrofit and Small Metering Systems

Easy and Rapid Installation

- Factory pre-wired, installation-ready GE metering solution eliminates wiring and associated errors for rapid installation
- Extend metering capability with new systems and existing switchgear without system installation downtime

Cost-Effective Retrofit Solution

- Save up to 200% versus the addition of a new switchgear cabinet
- Compact footprint makes effective use of existing allocated space
- Allows new installations or the expansion of existing switchgear capability without expensive, time-consuming designs, eliminating system downtime

Reliable and Compatible

- Backed by a 10 year warranty
- Simple meter enclosure ordering option for EPM 2200/6000/6010/7000P/9900P meters
- Comprehensive factory testing of both meter and enclosure together
- NEMA rated and UL/CUL certified

Applications (New and Retrofit installations)

- Industrial Multi-Tenant Monitoring
- Commercial/Residential Buildings
- Healthcare Institutions
- Government Buildings
- Manufacturing
- Educational Campuses

Assembly

Lockable Hinge
Door Gasket
Current Input Shorting Block
Fused Voltage Inputs
Control Power Transformer for 277 Volt Install
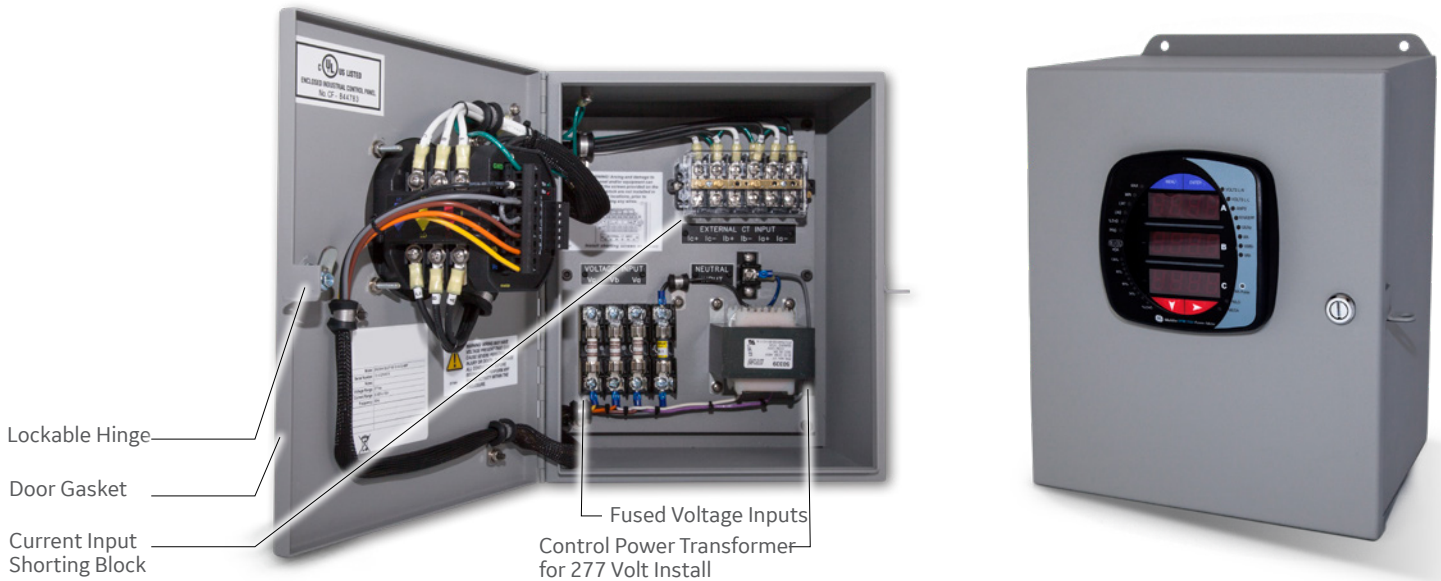
Dimensional Drawings

Multilin Meter Enclosure

Enclosure Front Dimensions

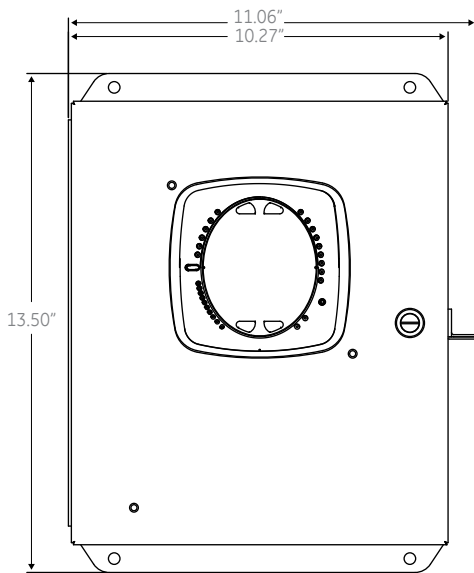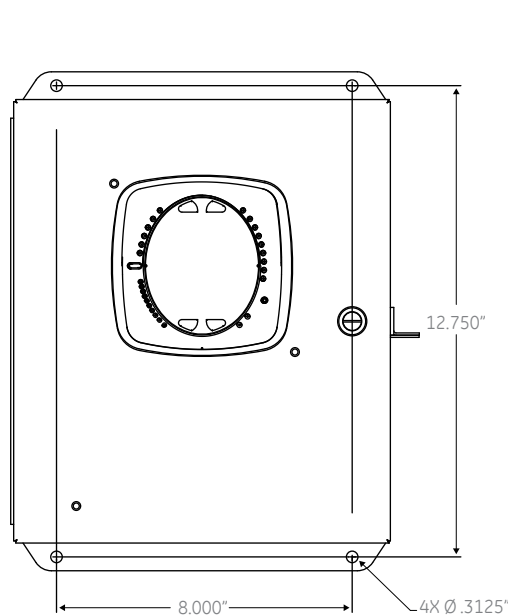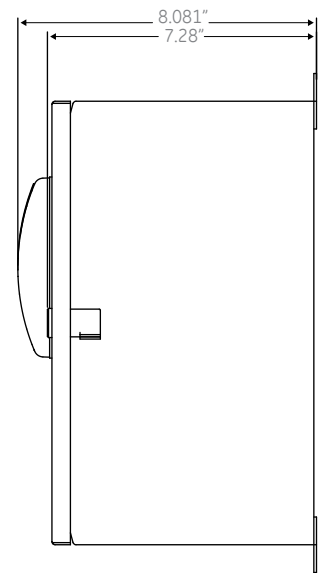*Mounting Hole Dimensions*

Enclosure Side Dimensions

Technical Specifications

VOLTAGE INPUT RANGE

- (20-576) Volts Line To Neutral, (0-721) Volts Line to Line
- Universal Voltage Input
- 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
- Input Wire Gauge: AWG#12-26/ (0.129 - 3.31)mm^2

ISOLATION

Voltage Inputs galvanically isolated to 2500V AC

CURRENT INPUT RANGE

- Class 10: (0.005 to 11) A, 5 A Nominal, 18 A max
- Class 2: (0.001 to 2) A, 1 A Nominal Secondary, 2 A Max
- Programmable Current to Any CT Ratio
- Pickup Current: 0.1% of Nominal: Class 10: 5 mA, Class 2: 1 mA
- Pass Through Wire Diameter: 0.177"/4.6 mm

CURRENT INPUT WITHSTAND CAPABILITY (AT 23 °C)

- Fault Current Withstand (at 23°C): 100 A for 10 Seconds, 300 A for 3 Seconds, 500 A for 1 Second
- Continuous Current Withstand: 20 A for Screw Terminated or Pass Through Connections

BURDEN

- Voltage Inputs: Input Impedance 8Ω; Burden 0.018 W at 120 Volts
- Current Inputs: 0.005 VA per Phase Max at 11 A

FREQUENCY RANGE

45 to 65 Hz

MEASUREMENT METHOD

- True RMS
- Sampling at over 400 Samples/Cycle on all Channels of Measured Readings Simultaneously
- Harmonics Resolution to 40th Order
- Waveform up to 512 Samples/Cycle

ACCURACY RATINGS

- 0.2% Energy Accuracy
- Note: For 2.5 element programmed units, degrade accuracy by an additional 0.5% of reading
- Note: For 1A (Class 2) Nominal, degrade accuracy to 0.5% of reading for watts and energy; all other values 2 times rated accuracy
- Full accuracy specifications available in User Manual

UPDATE RATE

- Watts, VAR and VA- Every 6 Cycles
- All Other Parameters – Every 60 Cycles

CONTROL POWER REQUIREMENTS

- Option HI: Universal,(90 to 265) Volts AC or (100 to 370) Volts DC
- Option LD: (18-60) Volts DC (24 to 48 V DC Systems)
- Burden: 10 VA Max

COMMUNICATION

Standard Communications
- 2 Com Ports (Back and Faceplate)
- RS485 Port through Backplate
- USB through Faceplate (uses USB Mini-B connector)
- Com Port Baud Rate: (1200 - 57600) bps
- Com Port Address: 1-247
- 8 Bit, Parity Setting: Odd, Even, None
- Modbus (RTU, TCP/IP), DNP 3.0 Level 2, IEC 61850 and GE EGD Protocols
- IEC 61850 available with I/O Slot 1/2 - E2 option

KYZ PULSE
- Type Form C Contact
- On Resistance: 35 Ω Max
- Peak Voltage: 350 V DC
- Continuous Load Current: 120 mA
- Peak Load Current: 350 mA (10 ms)
- Off State Leakage Current @350 V DC: 1uA

ENVIRONMENTAL
- Operating temp: (-25 to +70) °C
- Storage temp: (-40 to +70) °C
- Humidity: Up to 95% RH non-condensing
- Faceplate Rating: NEMA 1
- Mounting Gasket Included
- Standard Conformal Coating
- Protection: IP30 – Meter Front/Back, Optional DIN Rail Mounting, Optional Plug-in I/O Modules

SHIPPING
- EPM 7000P Meter Mounts in 92mm DIN or ANSI C39.1, 4"Round Cutout
- Basic Unit: H4.85" x W4.85" x L4.25"
- Total shipping weight: approx. 2 lbs (0.91 kg)
- Shipping container dimensions: 6"x 6"x 6" (15.2cm x 15.2cm x 15.2cm)

COMPLIANCE
- ANSI C12.20 0.1% Accuracy Class
- ANSI (IEEE) C37.90.1 Surge Withstand
- ANSI C62.41 (Burst)
- IEC 61000-4-2 – Electromagnetic compatibility (EMC); Testing and measurement techniques; Electrostatic discharge immunity test
- IEC 61000-4-3 – Electromagnetic compatibility (EMC); Radiated, radiofrequency, electromagnetic field immunity test
- IEC 61000-4-4 – Electrical fast transient/burst immunity test
- IEC 61000-4-5 – Surge immunity test
- IEC 61000-4-6 – Immunity to conducted disturbances, induced by radio-frequency fields
- IEC 61000-4-7 – General guide on harmonics and interharmonic measurements and instrumentation
- IEC 61000-4-8 – Magnetic field immunity
- IEC 61000-4-11 – Voltage variations immunity
- EN 61000-6-2 – Immunity for Industrial Environments: 2005
- EN 61000-6-2 – Immunity for Industrial Environments: 2005 Environments: 2007
- EN 61326-1 – EMC Requirements: 2006
- IEC 61557-12 – Performance Measuring and Monitoring Devices (PMD)
- IEC 62053-22 (0.2% Accuracy)
- CISPR 11 – Radiated Emissions Class B
- Listed to UL/IEC 61010-1 3rd Ed. and CSAC22.2 No. 61010-1, UL File: E250818
- EU Directive 2011/65/EU (RoHS 2 Directive)
- REACH Compliant
- PCBs Conformal Coating: Complies with IEC 61086-1/2/3 (high reliability). For adverse environmental conditions.

Ordering

EPM 7000P	*	*	*	*	*	*	*	Description
PL7000P								EPM 7000P Meter
Enclosure	XXXXXX							None
	ENC120							NEMA1 Rated - Indoor, Single Meter Enclosure, 120V
	ENC277							NEMA1 Rated - Indoor, Single Meter Enclosure, 277V
	ENN120							NEMA4X Rated - Indoor/Outdoor, Single Meter Enclosure, 120V
	ENN277							NEMA4X Rated - Indoor/Outdoor, Single Meter Enclosure, 277V
	ENS001							EPM Retrofit Panel Adapter - SWDGS5-E67-M
	ENS002							EPM Retrofit Panel Adapter - SWDGL9-E67-M
	ENS003							EPM Retrofit Panel Adapter - SWDGS9-E67-EPM
Frequency		6						60 Hz AC frequency system
		5						50 Hz AC frequency system
Current Inputs			5A					10 Amp Secondary
			1A					2 Amp Secondary
Software				A				Multimeter Function Only
				B				Data Logging, 2 MB Memory
				C				128 Samples/Cycle Waveform Recording, 10 MB Memory
				D				512 Samples/Cycle Waveform Recording, 128 MB Memory
Power Supply					HI			Universal (100-240)VAC @50/60 Hz or (100-240)VDC
					LD			18-60 Volt DC Power Supply
I/O SLOT 1						XX		None
						E1		100BaseT Ethernet
						E2		100BaseT Ethernet with IEC 61850 Protocol
						S1		Serial RS232/RS485 Communications
						C1		Four Channel Bi-directional 0-1mA Outputs
						C2		Four Channel Bi-directional 4-20mA Outputs
						RS		Two Relay status Outputs / Two Status Inputs
						PS		Four Pulse Outputs / Four Status Inputs
						F1		Fiber Optic Interface with ST Termination
						F2		Fiber Optic interface with Versatile Link Termination
I/O SLOT 2							XX	None
							E1	100BaseT Ethernet
							E2	100BaseT Ethernet with IEC 61850 Protocol
							S1	Serial RS232/RS485 Communications
							C1	Four Channel Bi-directional 0-1mA Outputs
							C2	Four Channel Bi-directional 4-20mA Outputs
							RS	Two Relay status Outputs / Two Status Inputs
							PS	Four Pulse Outputs / Four Status Inputs
							F1	Fiber Optic Interface with ST Termination
							F2	Fiber Optic interface with Versatile Link Termination

Ordering

EPM 7000PT	*	*	*	*	*	*	*	Description
PL7000PT								EPM 7000PT Meter
	XXXXXX							
Frequency		6						60 Hz AC frequency system
		5						50 Hz AC frequency system
Current Inputs			5A					10 Amp Secondary
			1A					2 Amp Secondary
Software				A				Multimeter Function Only
				B				Data Logging, 2 MB Memory
				C				128 Samples/Cycle Waveform Recording, 10 MB Memory
				D				512 Samples/Cycle Waveform Recording, 128 MB Memory
Power Supply					HI			Universal (100-240)VAC @50/60 Hz or (100-240)VDC
					LD			18-60 Volt DC Power Supply
I/O SLOT 1						XX		None
						E1		100BaseT Ethernet
						E2		100BaseT Ethernet with IEC 61850 Protocol
						S1		Four Channel Bi-directional 0-1mA Outputs
						C1		Four Channel Bi-directional 4-20mA Outputs
						C2		Two Relay status Outputs / Two Status Inputs
						RS		Four Pulse Outputs / Four Status Inputs
						PS		Fiber Optic Interface with ST Termination
						F1		Fiber Optic interface with Versatile Link Termination
						F2		Serial RS232/RS485 Communications
I/O SLOT 2							XX	None
							E1	100BaseT Ethernet
							E2	100BaseT Ethernet with IEC 61850 Protocol
							S1	Four Channel Bi-directional 0-1mA Outputs
							C1	Four Channel Bi-directional 4-20mA Outputs
							C2	Two Relay status Outputs / Two Status Inputs
							RS	Four Pulse Outputs / Four Status Inputs
							PS	Fiber Optic Interface with ST Termination
							F1	Fiber Optic interface with Versatile Link Termination
							F2	Serial RS232/RS485 Communications

imagination at work