LayerZero Power Systems, LLC.

The Foundation Layer

Series 70 ePanel-2

Wall-Mounted Remote Power Panel

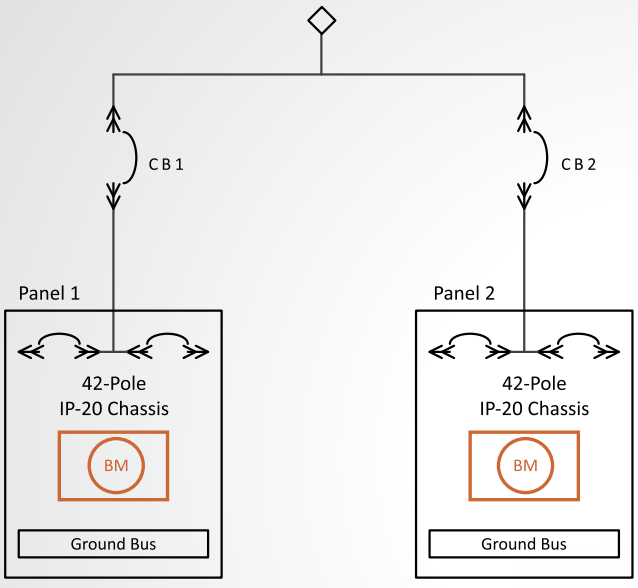
Product Brochure

ePanel: Save Space, Increase Safety, And Maximize Reliability

ePanel Uses A Wall-Mounted Design To Maximize The Effectiveness Of Critical Floor Space

The Series 70 ePanel-2 Wall-Mounted Distribution Panel saves space and offers versatile installation at the end of server rows or directly on walls. Highly configurable to support a variety of business needs, the ePanel combines safety, reliability, and connectivity in a compact design.

It features LayerZero's IP-20 finger-safe SafePanel® and requires only Category-0 PPE, while providing selective trip coordination up to 35 kAIC. Advanced capabilities include waveform capture on very breaker, Bluetooth access, and open communication protocols such as Modbus/TCP, SNMP, and HTTP for seamless integration.



One Line Diagram

Reliability

Silver Plated Terminals:
Silver Has Excellent Conductivity To Provide Superior Electrical Performance and Reliability

Convection Cooling:
Natural Convection-Cooled Heat Dissipation System is Maintenance-Free

Machined Hardware:
Machined Cap Screws and Engineered Disc Springs Maintain Constant Torque Throughout Product Life

Selective Trip Coordination:
Main Breaker Will Not Trip In The Event of a Downstream Fault.

Serialized Critical Board Tracking:
Critical Boards Are Serialized And Cataloged in an Active Database For Traceability

Safety

INSIGHT IR® Cameras:
Built-in Infrared Cameras to Continuously Scan Bolted Connections For Irregular Rises In Temperature

Sectionalized Components:
Separations Between Each Section To Maintain Maximum Operator Safety

Polycarbonate Windows:
Allows Critical Board LEDs To Be Viewed With The Dead-Front Door Closed

Guided Wireways:
Helps Keep Wires Organized

Dead Front Hinged Doors:
Barrier To Provide A Safe Working Area With No Exposed Live Parts

SafePanel® Distribution:
IP-20 Rated Finger-Safe Panel Board with No Exposure to Exposed Live Parts

Connectivity

Ethernet Connectivity:
Secure VPN Router Connects To Network For Advanced Remote Monitoring Capabilities

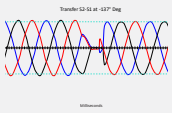
Modbus/TCP:
Open Connectivity to Existing Monitoring Systems Without Proprietary Limitations

NTP Time Clock Synchronization:
Facilitates Timeline-Based Logging For Post-Event Reconstruction

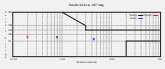
SNMP Connectivity:
Permits Remote Management Via Simple Network Management Protocol

Dry Contacts:
Access Alarms Data with Dry Contacts Connections

Power Quality Monitoring



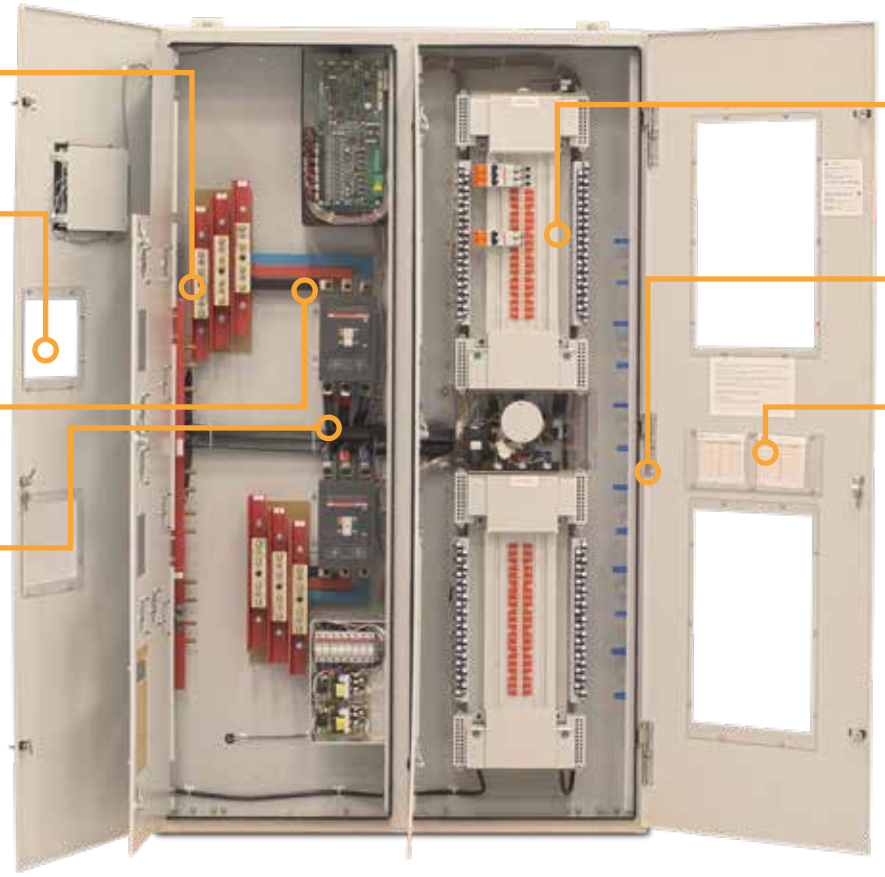
Real-Time Waveform Capture:
Automatically Captures A Picture Of The Power Six-Cycles Before and After Every Event



ITIC Plotting:
Generate ITIC Plots To Determine if Connected Equipment Was Affected by Power Quality Events

Optional Local Touch-Screen Interface:
Password-Protected Color Touch-Screen GUI For Local STS Setup/ Operation/Administration

Equipment Layout



Reliability Features

Serialized Circuit Boards

All critical circuit boards and memory cards are serialized and tracked through the LayerZero eBOSS portal. This system allows customers to reference which components are in their equipment, see who tested them, and access detailed test notes.

Serialized tracking also supports predictive maintenance by enabling facilities to identify potential component failures through cross-referencing with similar parts. This proactive approach helps maximize uptime and reliability.

Serialized Panel Board Monitor (PBM) in an ePanel-2 Power Panel

Sectionalized Components Help Maximize Operator Safety

The ePanel-2 is designed to safeguard operators from exposure to live connections. Main and branch circuit breakers are physically separated, with all connections optically isolated to reduce risk. Polycarbonate windows provide visibility while maintaining protection.

All energized parts are insulated, covered, recessed, or internally mounted, and additional isolation between sections ensures safer operation throughout the unit.

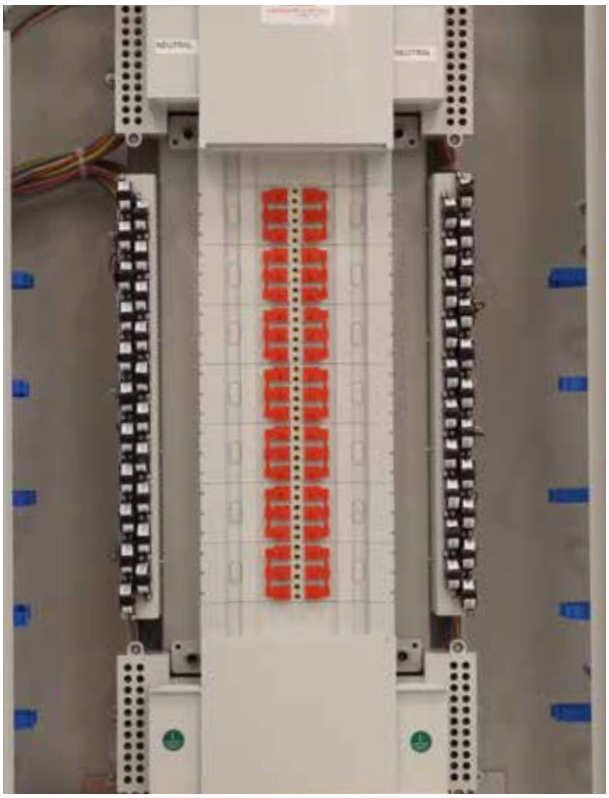
Sectionalized Components to Maximize Operator Safety

Reliability Features

Selective Trip Coordination

The ePanel-2 is designed with selective trip coordination.

This ensures that in the event of a downstream fault, branch circuit breakers will trip before the main breaker, keeping the system stable and preventing unnecessary disruptions.



The LayerZero® SafePanel® Panel Board

The Fault Current Opens the Solenoid Magnet, Causing The Contacts To Part

Unequal Pressure on Each Side of The Arc Causes the Plasma Wave To Rotate Away From The Contacts

The Plasma Wave is Driven into 12 Evenly Spaced Dividers

The Plasma is Rapidly Cooled

Transient Voltage Attempts To Re-Strike The Arc, But The Plasma Is Again Pushed Into The Dividers

When Sufficiently Cool, Charged Particles Recombine And The Fault Current Is Stopped Quickly & Safely

Ease of Maintenance/Safety Features

Scan Bolted Connections with Dead-Front Doors Closed

For safe and efficient thermal scanning, the ePanel-2 includes strategically positioned IR-scan portholes on the inner dead-front doors. Operators can perform thermal scans of all bolted connections without exposure to live power circuits.

The IR window swivels upward, unlocking with keyhole access to reveal a protective mesh for accurate point-and-shoot thermal imaging. LayerZero also provides clear documentation to guide proper thermal scanning procedures.

INSIGHT IR® Portholes in the ePanel-2 Allows Operators to Scan Bolted Connections with the Dead Front Doors Closed

Polycarbonate Windows

The ePanel-2 features polycarbonate windows on the outer doors, allowing circuit breaker positions to be viewed with the dead-front doors.

A hinged polycarbonate window on the input terminals further enhances operator safety by eliminating exposure to live bus.

Polycarbonate Windows allow Circuit Breaker Positions to be Viewed with the Outer Doors Closed for Main and Branch Circuit Breakers

Safety Features

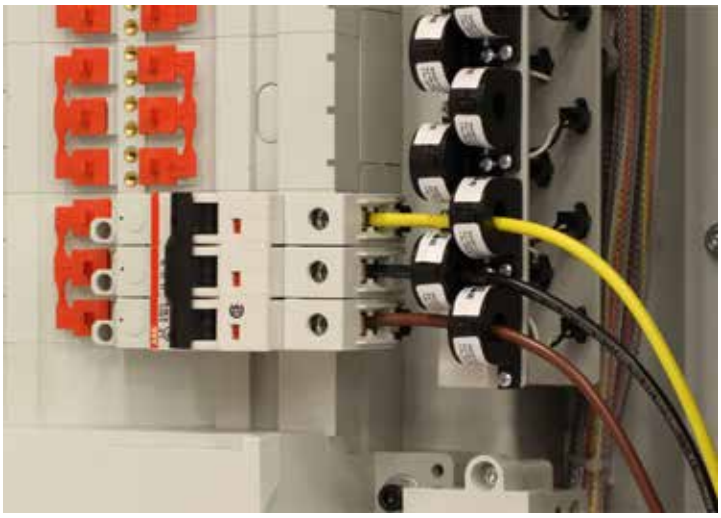
Circuit Breaker Shrouds

To maximize operator protection, the ePanel-2 offers optional circuit breaker shrouds. These patent-pending shrouds fully cover exposed wiring and ensure no live parts are accessible, reinforcing LayerZero's commitment to safety.

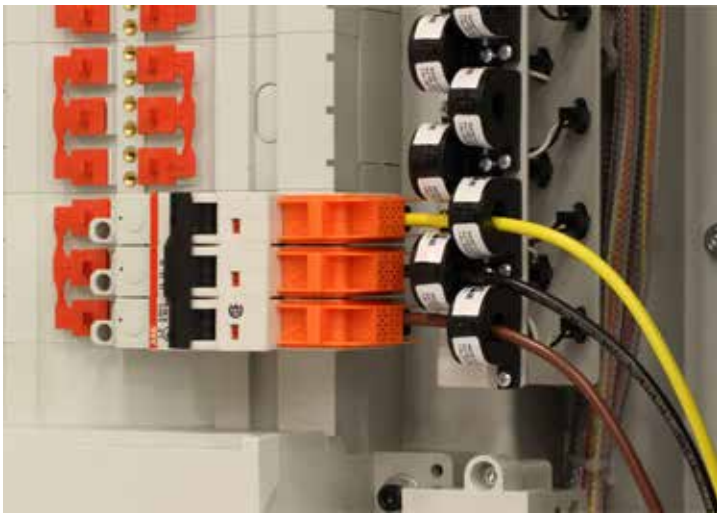
No Exposed Live Parts

LayerZero's patent-pending Circuit Breaker Shrouds cover exposed wiring, maximizing operator safety.

LayerZero's patented orange Circuit Breaker Shrouds



Wiring Without Shrouds Leaves Wiring Exposed



Circuit Breaker Shrouds Maximize Operator Safety

Safety Features

The LayerZero Finger-Safe SafePanel®

The Series 70 eRPP is built with an IP-20, finger-safe panel board, designed so that openings prevent the ingress of a 12.5 mm (½”) probe for maximum operator safety.

When two live conductors are separated, such as during the removal of a circuit breaker, an arc can form. The SafePanel® design contains any potential arc within the connection well, ensuring that even if a breaker is removed, the arc remains isolated.

With components deeply insulated, breaker removal is both safe and simple.

Isolated, Non-Conducting Brass Screws

The Protective Cover Is Removed

The Breaker Is Inserted Into The Opening

The Breaker Snaps Into The DIN Rail

The Breaker Is Secured With An Isolated, Non Conducting Screw

Power Quality Monitoring

LZ DPQM

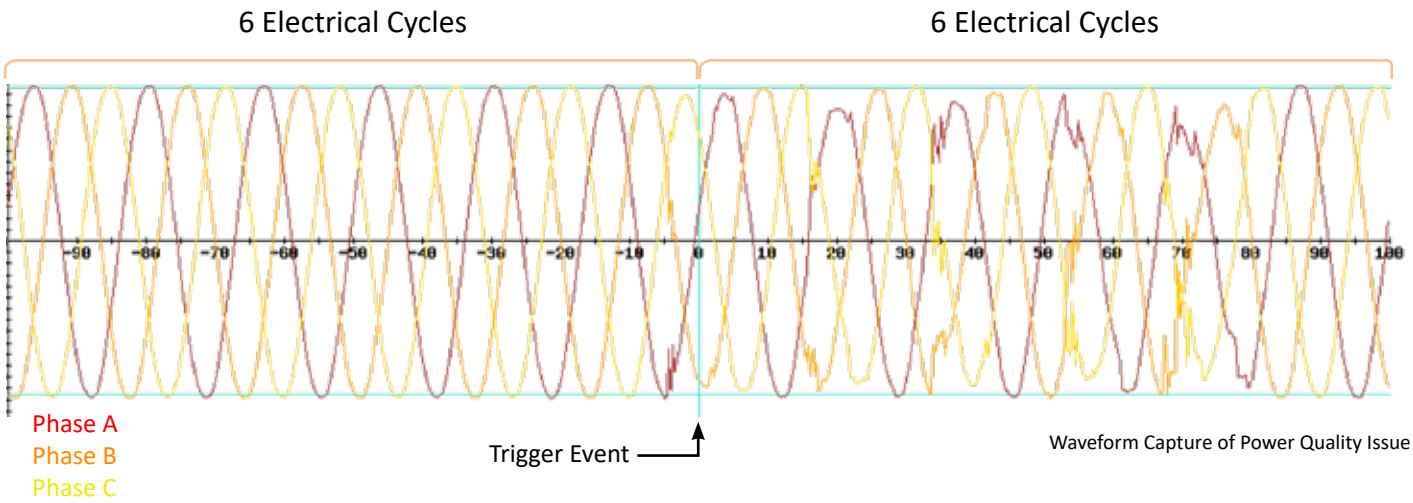
The ePanel-2 comes standard with LayerZero DPQM, a comprehensive monitoring system offering both local and remote communication options.

From basic alarms and reporting to advanced power quality analytics, DPQM helps facilities stay aware, vigilant, and proactive in maintaining safe and reliable operations.

A color touch screen GUI is optional

LayerZero DPQM Provides Answers

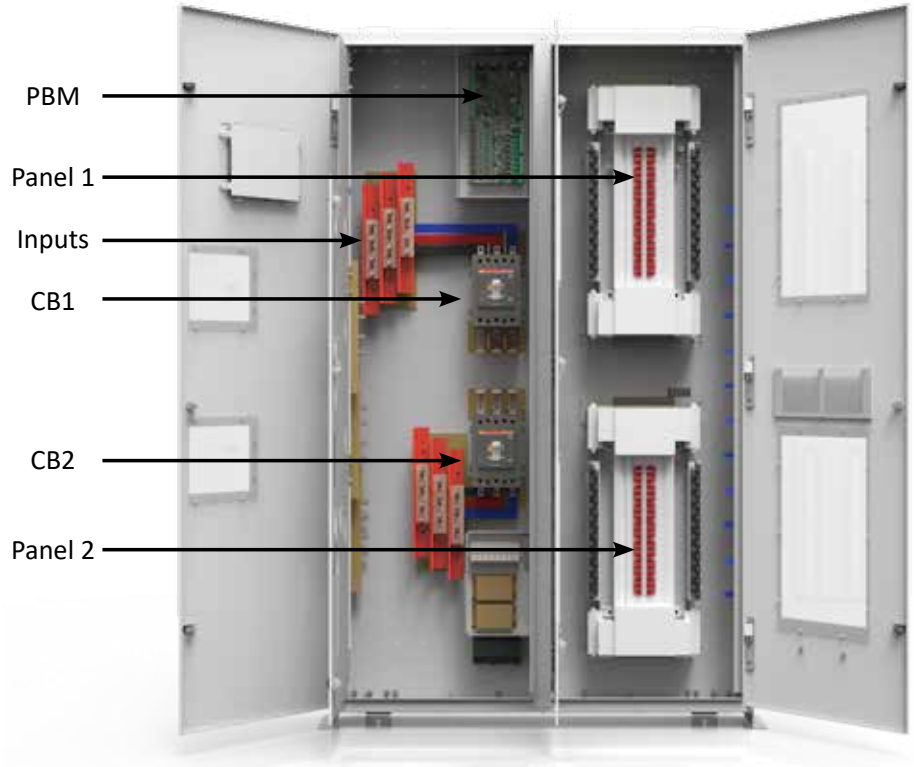
DPQM delivers timestamped waveform captures before and after events, giving operators the ability to trace issues back to their root cause. LayerZero captures power quality data across the STS, PDU, and RPP, enabling thorough post-event analysis and long-term system insight.

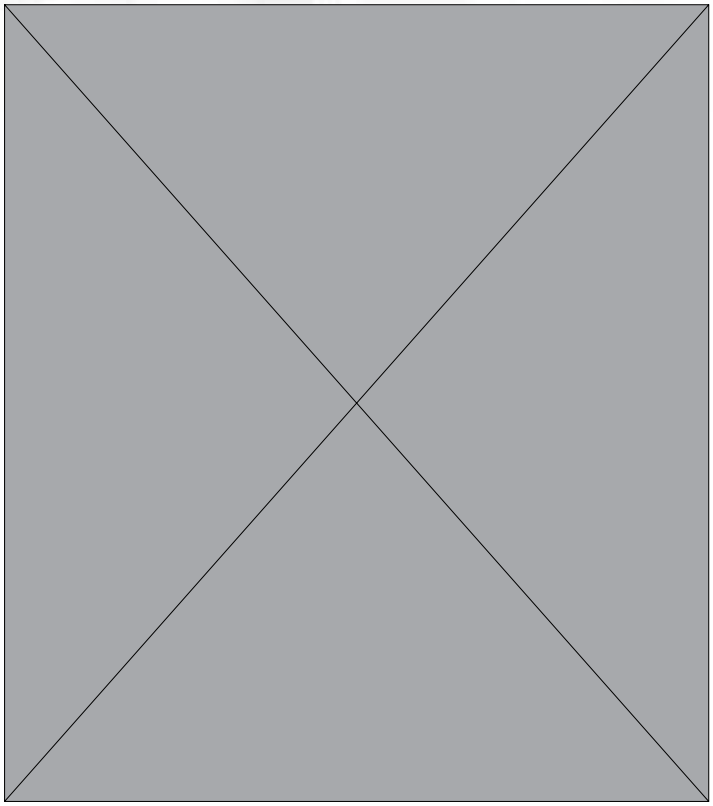


Waveform Capture of Power Quality Issue

Power Quality Monitoring

LZ DPQM



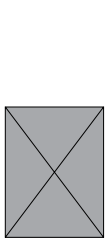


- (A) Current Metering Point
- (V) Voltage Metering Point
- (PQ) Power Quality Metering Point
- (BM) Branch Current Monitoring

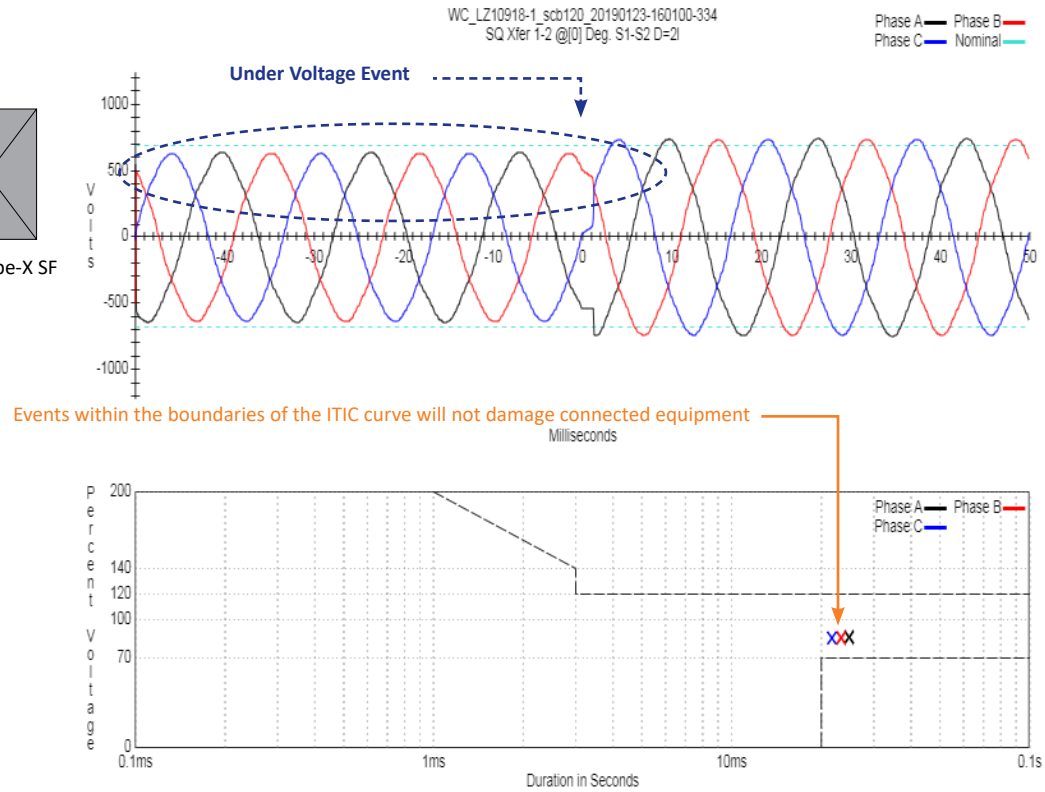
All LayerZero products sample power sources to perform detailed power quality analysis, accessible remotely through a web browser.

For example, during a “voltage sag” test on a Series 70 ePODs: Type-X PDU, each phase was plotted over time. When the voltage on all three phases dropped below the set threshold, the system automatically triggered an undervoltage event, captured the waveform, and generated an ITIC plot.

On LayerZero PDUs and RPPs, waveforms, and ITIC plots are created for every circuit, on every phase, for every event.



ePODs: Type-X SF PDU



How to Read the Curve

On the y-axis you will see the % of nominal voltage, and the x-axis represents time typically shown using a logarithmic scale. As long as the voltage is contained within the boundaries the load will be maintained and there will be no damage to connected equipment. The examples above events plotted both within the boundaries.

Technical Specifications

LayerZero DPQM Parameters		Mains	Subfeeds or Branch Circuits
Voltage Monitor	Volts (L-L) Phase A/B/C (volts RMS)	✓	
	Volts (L-N) Phase A/B/C (volts RMS)	✓	
	Phase Rotation	✓	
Current Monitor	CT Reversed Phase A/B/C/N	✓	✓
	Current Phase A/B/C/N (amperes RMS)	✓	✓
Power Monitor	Frequency (hertz)	✓	
	Real Power (kilowatts)	✓	✓
	Apparent Power (kilovolt-amperes)	✓	✓
	Reactive Power (kilovolt-amperes reactive)	✓	✓
	Power Factor	✓	✓
	Energy (kilowatt-hours)	✓	✓
	Block Demand (kilowatts)	✓	✓
	Block Demand Peak (kilowatts)	✓	✓
	Rolling Demand (kilowatts)	✓	✓
	Rolling Demand Peak (kilowatts)	✓	✓
Power Quality	Percent VTHD (percent)	✓	✓
	Waveform Capture	✓	✓
Alarms	Phase - Under Voltage A/B/C (Alarm)	✓	
	Phase - Over Voltage A/B/C (Alarm)	✓	
	Phase - Low Voltage A/B/C (Warning)	✓	
	Phase - High Voltage A/B/C (Warning)	✓	
	Phase - Over Current A/B/C (Alarm)	✓	✓
	Phase - High Current A/B/C (Warning)	✓	✓
	Under Frequency (Alarm)	✓	
	Over Frequency (Alarm)	✓	
	High VTHD (Warning)	✓	
	Over VTHD (Alarm)	✓	
	Phase Rotation (Alarm)	✓	

All product specifications are subject to change without notice.

Technical Specifications

ePanel-2 Models with System Withstand Ratings	
	Presence of Main Circuit Breaker
120/208 V, 3-Phase, 4-Wire + Ground	35 kA
220/380 V, 3-Phase, 4-Wire + Ground	14 kA
230/400 V, 3-Phase, 4-Wire + Ground	
240/415 V, 3-Phase, 4-Wire + Ground	
277/480 V, 3-Phase, 4-Wire + Ground	
480 V, 3-Phase, 3-Wire + Ground	

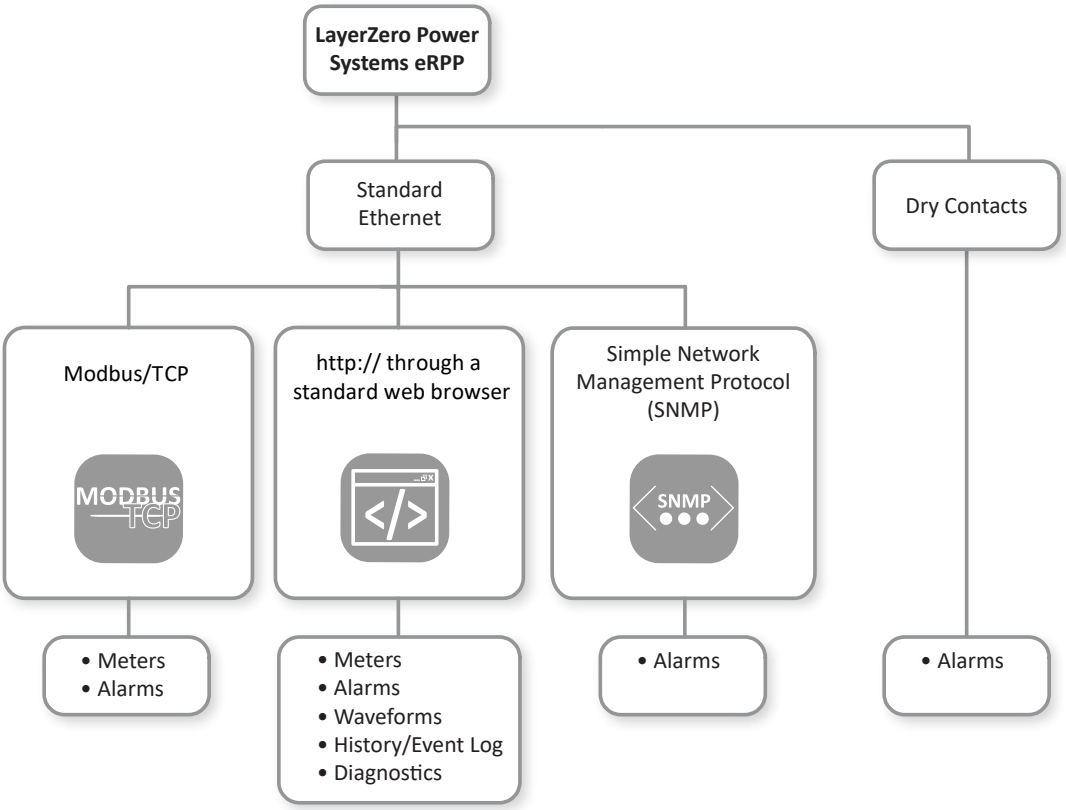
Mechanical Characteristics		
Dimensions	47”W x 80”H x 10.5”D (1193 mm W x 2032 mm H x 266.7 mm)	
Weight	550 lbs (250 kg)	
Enclosure Mounting	Wall-Mounted	
Frame Construction	Welded Frame	
Electrical Connections	Flexible Laminated Bus, Silver-Plated Solid Busbar	
Color	Textured Powder Coat White (RAL 7035), Blue (RAL 5017), Black, Custom	
Seismic Floor Anchors	Optional	
Seismic Floor Stand	Optional	
Sectionalization	Engineered Composite Insulation, Dead Front Doors	
Circuit Breaker Identification	Labels Viewable Through Polycarbonate Window	
Electrical Characteristics		
Input Voltage	120/208 V, 3-Phase, 4-Wire + Ground; 220/380 V, 3-Phase, 4-Wire + Ground; 230/400 V, 3-Phase, 4-Wire + Ground; 240/415 V, 3-Phase, 4-Wire + Ground; 277/480 V, 3-Phase, 4-Wire + Ground; 480 V, 3-Phase, 3-Wire + Ground	
Configuration	1 Input, 2 Panels	2 Inputs, 2 Panels
	Parallel (P), Shared Parallel (SP)	Dedicated (D), Feed Through (FT)
Frequency	50 Hz, 60 Hz	
Poles	3-pole, 4-pole	
Input Feeder Termination	Single, Mechanical; Dual, Mechanical; Two-Hole, Compression	
Phases	3-Phase, 3-Wire (Input); 3-Phase, 4-Wire + Ground (Output)	
Neutral Rating	100%, 200%	
Circuit Breaker Mounting Type	Fixed, Plug-In	
Distribution	SafePanel® Distribution	
Number of Output CBs	84-Circuit	
Power Quality Monitoring		
Power Quality Monitoring Technology	LayerZero DPQM (Distribution Power Quality Monitoring)	
Waveform Capture	Local Display, Remote Display via Web Browser	

All product specifications are subject to change without notice.

Technical Specifications

Operational Characteristics	
Cooling	Convection Cooling
Cable Access	Top/Bottom
Service Access	Front Only Access
IR Scan Port Type	INSIGHT IR® Portholes
Display Type	3.2” LCD with Membrane, 10.5” Color Touch Screen GUI (Optional)
Connectivity	
Meters	Local Display, Ethernet, Modbus/TCP, http via Web Browser (Non-Proprietary)
Alarms	Local Display, Ethernet, Modbus/TCP, http via Web Browser (Non-Proprietary)
Summary Alarm	Dry Contacts
Waveforms	Local Display, Ethernet, http via Web Browser (Non-Proprietary)
History/Event Log	Local Display, Ethernet, http via Web Browser (Non-Proprietary)
Diagnostics	Local Display, Ethernet, http via Web Browser (Non-Proprietary)
Time Synchronization	Network Time Protocol (NTP)
Standards Conformance	
UL	ETL and cETL listed to UL 60950

Contact LayerZero for custom sizes and designs.



All product specifications are subject to change without notice.

Learn more at www.LayerZero.com

LayerZero Power Systems, LLC.
1500 Danner Drive
Aurora, OH 44202 U.S.A.

Rev. 4/26 #9