LayerZero Power Systems, LLC.

The Foundation Layer

Series 70 eRDP-FS

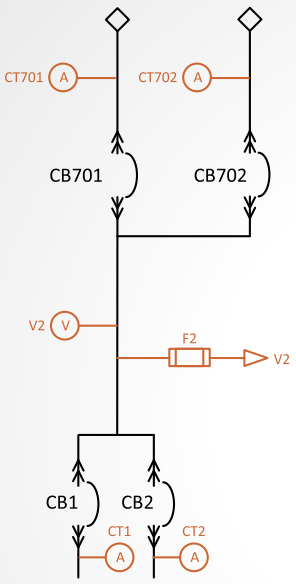
Web Enabled Remote Distribution Panel

Product Brochure

The LayerZero eRDP-FS Remote Distribution Panel Maximizes Power Reliability

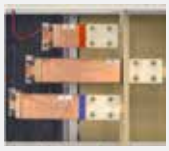
eRDP-FS Is Inspired by NFPA-70E

The Series 70 eRDP-FS is a Remote Distribution Panel designed for critical industries. It features an NFPA-70E-friendly layout, front access for circuit breakers, side access for input connections, and an IP-20 rated Finger-Safe SafePanel® to help protect operators and ensure safe operation. With a focus on reliability, safety, connectivity, and power quality monitoring, the Series 70 eRDP-FS delivers dependable power for mission-critical environments.



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

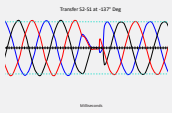
Modbus/TCP:
Open Connectivity to Existing Monitoring Systems Without Proprietary Limitations

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

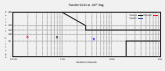
SNMP Connectivity:
Permits Remote Management Via Simple Network Management Protocol

Dry Contacts:
Access Alarms Data with Dry Contacts Connections

Power Quality Monitoring



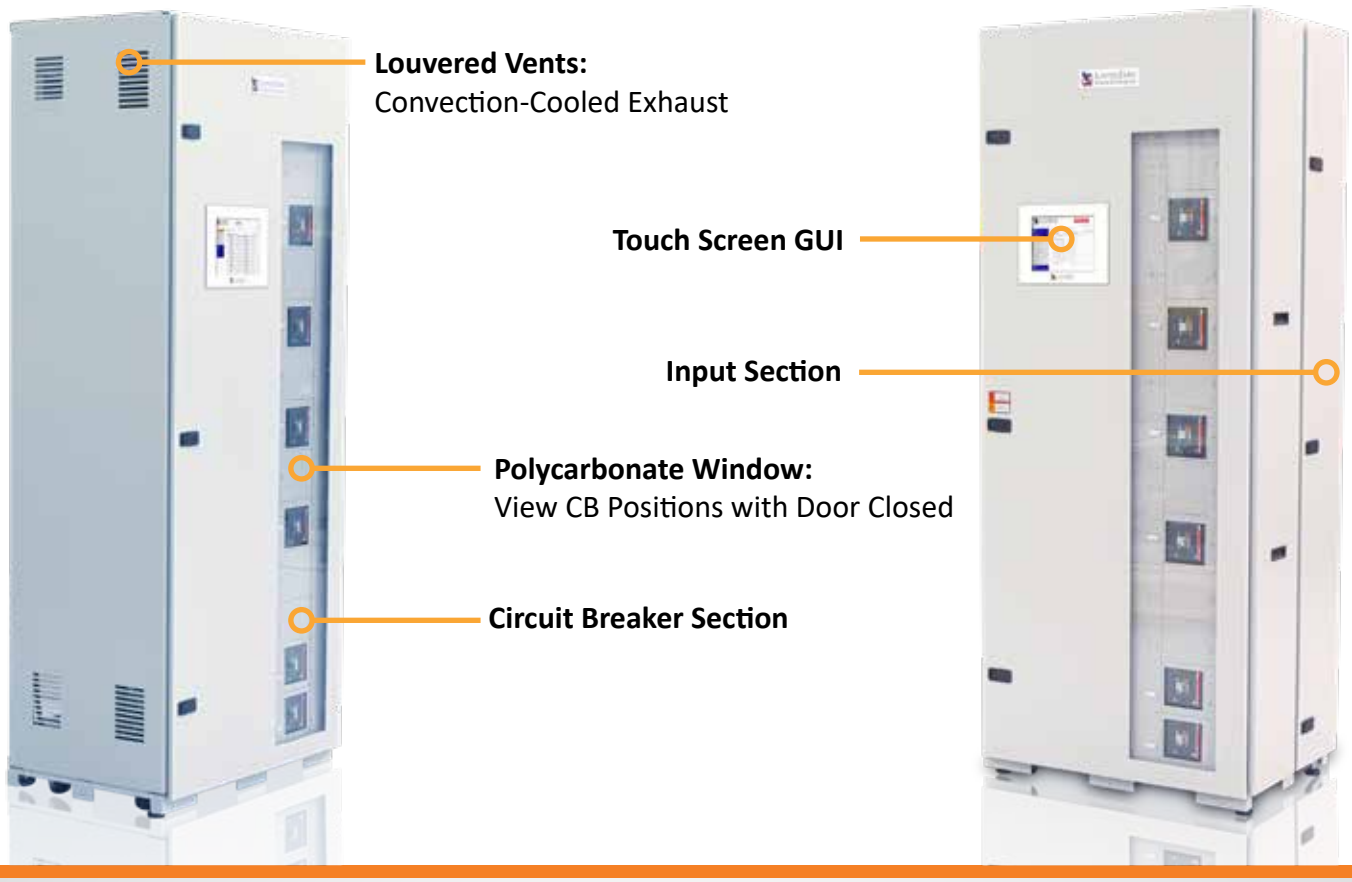
Real-Time Waveform Capture:
Automatically Captures A Picture Of The Power Six-Cycles Before and After Every Event

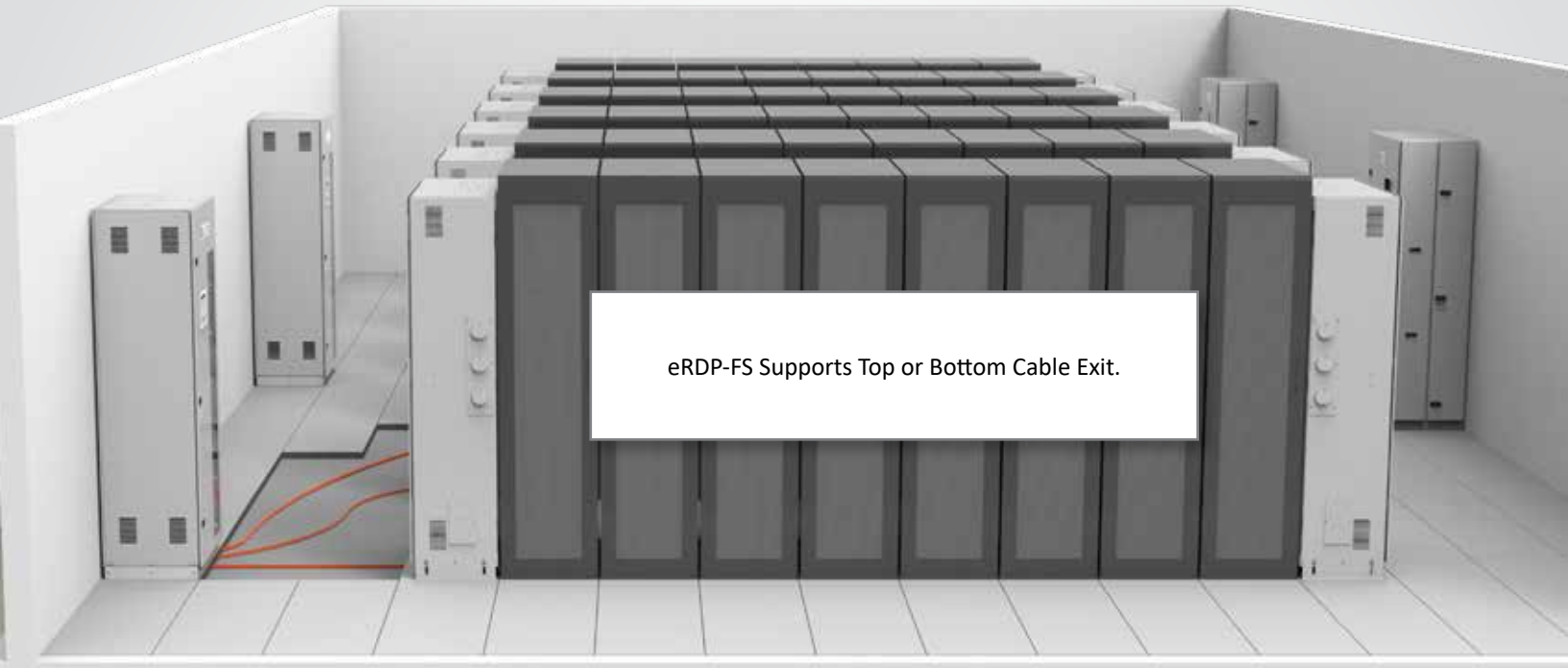


ITIC Plotting:
Generate ITIC Plots To Determine if Connected Equipment Was Affected by Power Quality Events

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

Equipment Layout





Equipment Construction Detail

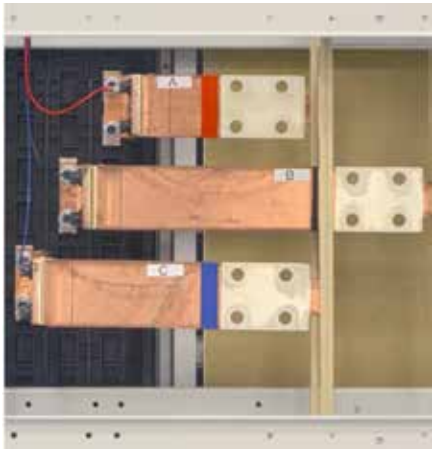
1. Hinged Dead Front Doors
2. Silver Plated Terminals
3. LayerZero DPQM Local Display
4. LayerZero DPQM Controls
5. Bluetooth Connectivity
6. Polycarbonate Window
7. INSIGHT IR®Portholes
8. Convection Cooled Exhaust
9. SafePanel™ Distribution
10. Subfeed Circuit Breakers
11. T-Handle for CB Removal
12. CTs for LayerZero DPQM

13. Alarm & Bypass Indicator
14. PBM Status Indicator
15. Logged In User
16. Navigation Menu

Reliability Features

Silver Plated Terminals

All LayerZero bus joints feature silver plating for superior performance. Silver's high conductivity and low resistance provide excellent electrical contact, minimizing heat buildup and ensuring long-term reliability.



Silver-Plated Customer Connections

Machined Hardware

Our bolted connections utilize machined cap screws and engineered disc springs. The result is a flat pressure versus deflection profile that ensures all bolted connections maintain constant torque throughout the life of the product.

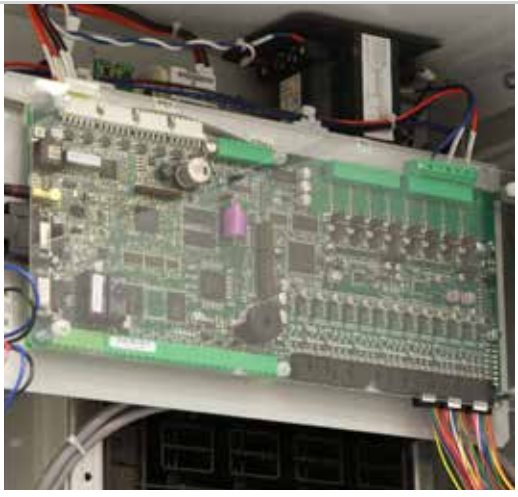
These technologies have been extensively tested across a wide range of environmental conditions to ensure that, once connections are tightened, they stay that way.

Machined Cap Screws and Engineered Disc Springs
Utilized in LayerZero Power Systems Products

Serialized Circuit Boards

Every critical circuit board and memory card in the Series 70 eRDP-FS is serialized and tracked through the LayerZero eBOSS portal. Customers can view component details, test results, and quality notes for full transparency.

Serialized tracking also supports predictive modeling, allowing potential component issues to be identified early and addressed proactively to maximize uptime.



Serialized "Panel Board Monitor" (PBM) in an eRDP

Safety Features

Sectionalized Components Help Maximize Operator Safety

Operators are well-protected from exposed connections through a fully sectionalized design. There is physical separation between the main circuit breaker(s) and the branch circuit breakers, with all connections optically isolated to minimize risk. Polycarbonate windows provide visibility while maintaining safety.

All energized parts are insulated, covered, recessed, and internally mounted for safer operation. Insulated barriers between machine components further enhance protection. Once installed, there is no need to open the eRDP-FS main circuit breaker inner cabinet.

Sectionalized Components to Maximize Safety

Scan Bolted Connections with Dead-Front Doors Closed

Strategically positioned IR-scan portholes on the inner dead-front doors allow safe thermal scanning of all bolted connections with the dead-front closed, eliminating exposure to live power circuits.

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

INSIGHT IR® Portholes on the eRDP

Polycarbonate Windows

The Series 70 eRDP-FS features polycarbonate windows on the outer doors, allowing circuit breaker positions to be viewed with the dead-front doors closed.

A hinged polycarbonate window over the input terminals further increases operator safety by eliminating exposure to live bus components.

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

Safety Features

The LayerZero SafePanel™

The Series 70 eRDP-FS features an IP-20, finger-safe panel board that prevents ingress of objects larger than ½" (12.5 mm), ensuring 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, so even if a branch breaker is removed, the arc remains safely contained.

With insulated and deeply isolated components, breaker removal is both safe and straightforward, reinforcing the system's focus on operator protection.

Finger-Safe SafePanel® Subfeed Panel Board

eRDP-FS 1200 A Circuit Breaker Installation Process

The Breaker Is Inserted Into The SafePanel

The Handle Is Unlocked

Screws Help Secure The Breaker

For Maximum Safety, The SafePanel Has Recessed Bus Work and Finger Safe Lattice.

Power Quality Monitoring

LZ DPQM

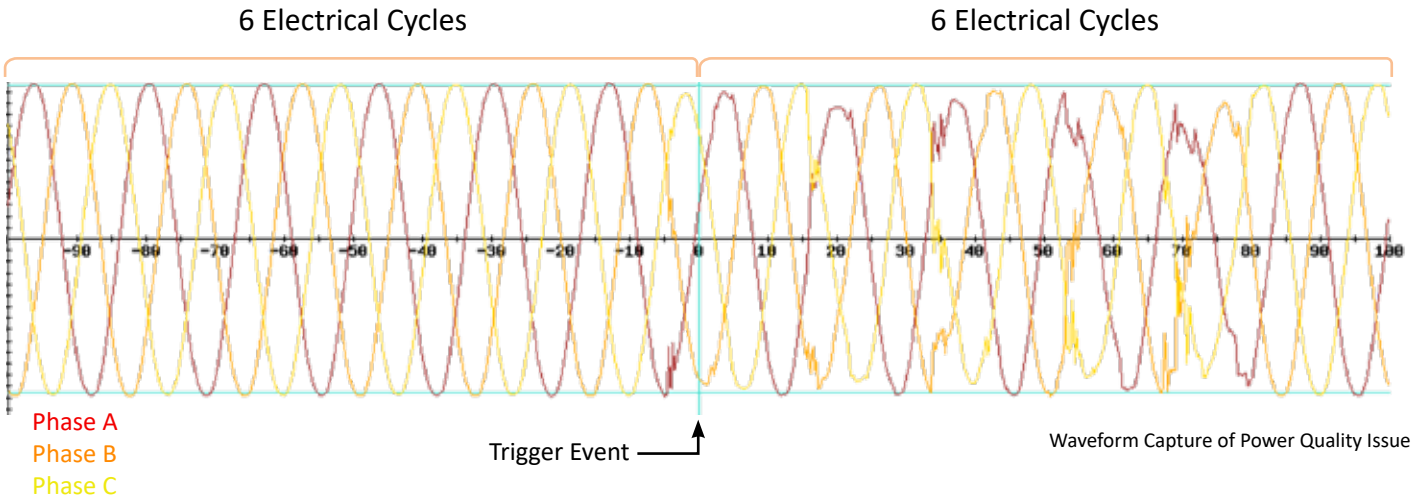
Every Series 70 eRDP-FS is equipped with LayerZero PDQM, a comprehensive monitoring system offering both local and remote communication capabilities.

From essential monitoring and alarm reporting to advanced power quality analysis, LayerZero DPQM empowers operators to stay aware, vigilant, and proactive in maintaining a safe, stable, and reliable operation.

A color touch screen GUI is optional

LayerZero DPQM Provides Answers

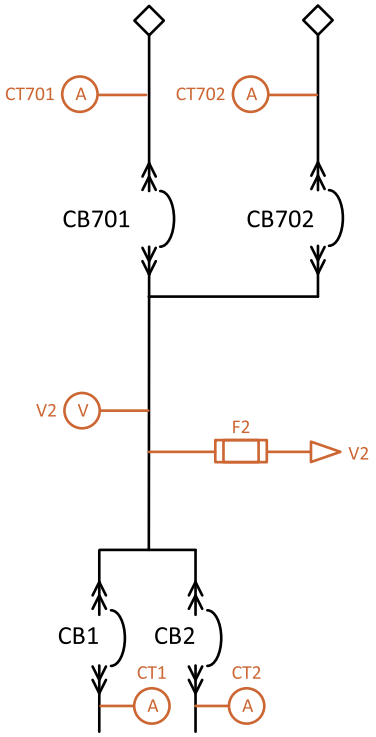
DPQM delivers timestamped waveform data before and after events, allowing facilities to trace and identify root causes with precision. LayerZero continuously captures power quality information at the STS, PDU, and RPP levels, enabling thorough post-event analysis and informed corrective action.



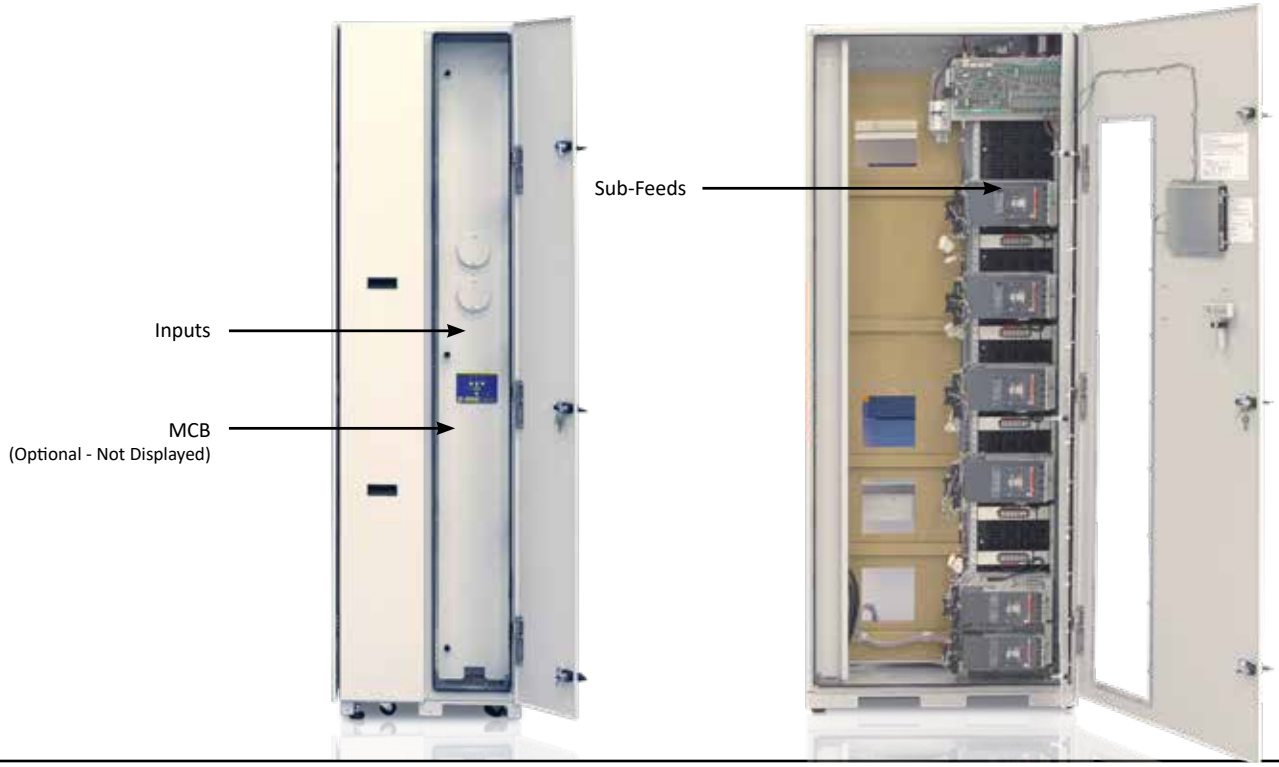
Waveform Capture of Power Quality Issue

Power Quality Monitoring

LZ DPQM



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



Technical Specifications

LZ DPQM

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)	✓	

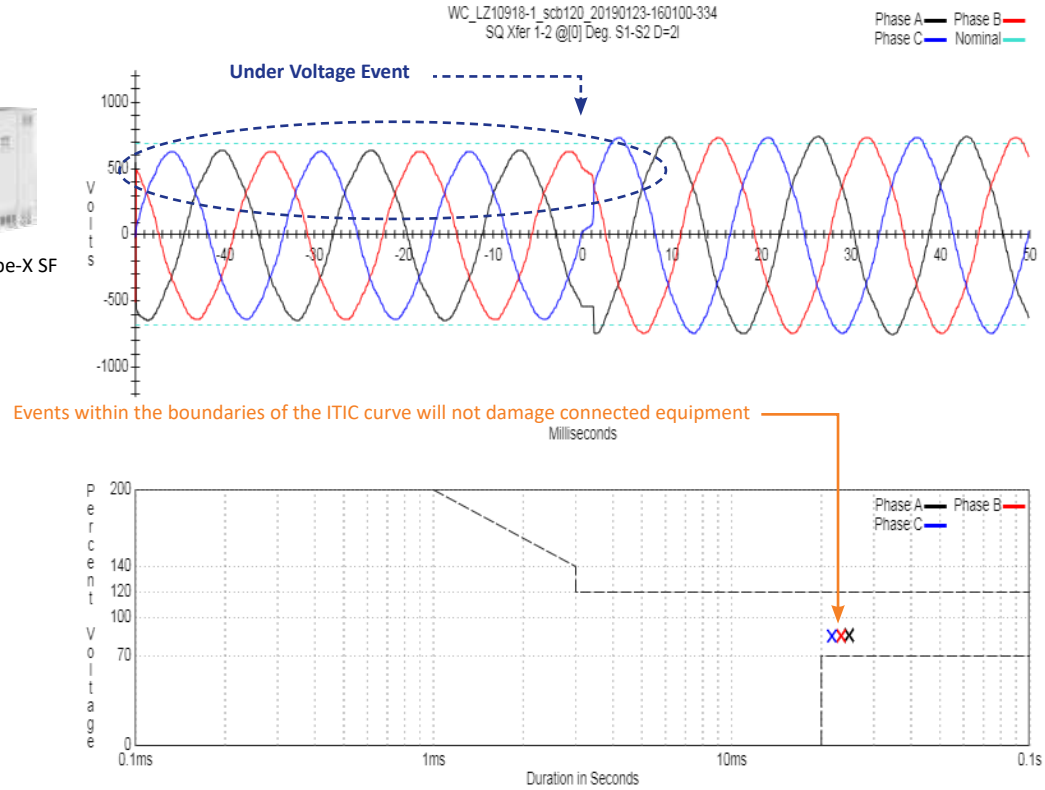
All product specifications are subject to change without notice.

All LayerZero products sample and analyze incoming power sources for detailed power quality assessments. This data is remotely accessible via a standard web browser connection.

The example shown represents a “voltage sag” factory test performed on a LayerZero Series 70 ePODs: Type-X PDU. Each phase is shown as a colored line plotting voltage over time. In this instance, all three phases dropped below the user-defined setpoint, triggering an undervoltage event, automatic waveform capture, and ITIC plot generation.

On LayerZero PDUs and RPPs, waveform and ITIC plots are automatically generated for every phase, on every circuit, and for every event, ensuring full visibility into system performance.

ePODs: Type-X SF PDU



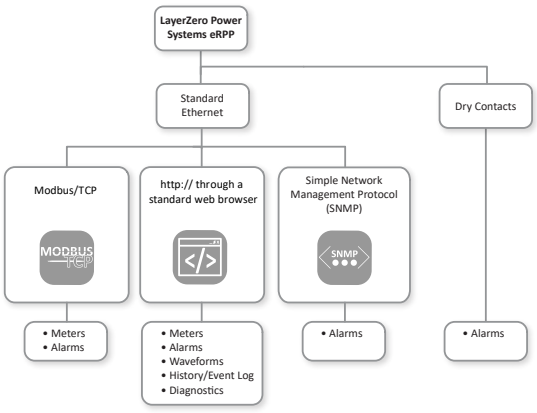
How to Read the Curve

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

eRDP Models with System Withstand Ratings	
120/208V, 3-Phase, 4-Wire + Ground	100 kA
220/380V, 3-Phase, 4-Wire + Ground	65 kA
230/400V, 3-Phase, 4-Wire + Ground	
240/415V, 3-Phase, 4-Wire + Ground	
277/480V, 3-Phase, 4-Wire + Ground	
480V, 3-Phase, 3-Wire + Ground	
575V, 3-Phase, 3-Wire + Ground	42 kA
600V, 3-Phase, 3-Wire + Ground	

Mechanical Characteristics	
Dimensions	36”W x 88”H x 24”D (610 mm x 2235 mm x 914 mm)
Weight	510 lbs (231 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	120/208V, 3-Phase, 4-Wire + Ground; 220/380V, 3-Phase, 4-Wire + Ground; 230/400V, 3-Phase, 4-Wire + Ground; 240/415V, 3-Phase, 4-Wire + Ground; 277/480V, 3-Phase, 4-Wire + Ground; 480V, 3-Phase, 3-Wire + Ground; 575V, 3-Phase, 3-Wire + Ground; 600V, 3-Phase, 3-Wire + Ground
Withstand	100 kA
Configuration	Parallel (P), Shared Parallel (SP), Dedicated (D), Feed Through (FT)
Frequency	50 Hz, 60 Hz
Poles	3-pole, 4-pole
Neutral Rating	100%, 200%
Circuit Breaker Type	Electronic Trip, Molded Case Switch, Thermal Magnetic Trip
Distribution	SafePanel™ Distribution
Power Quality Monitoring	
Power Quality Monitoring Technology	LayerZero DPQM (Distribution Power Quality Monitoring)
Waveform Capture	Local Display, Remote Display via Web Browser



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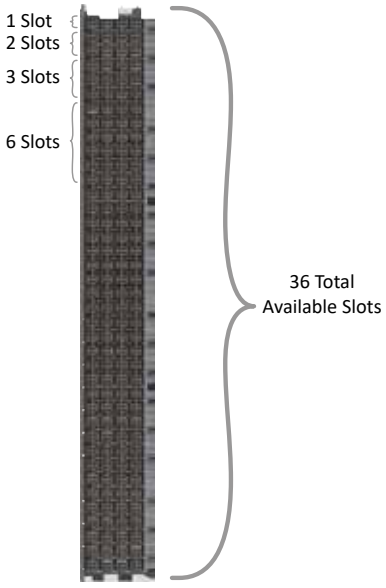
Technical Specifications

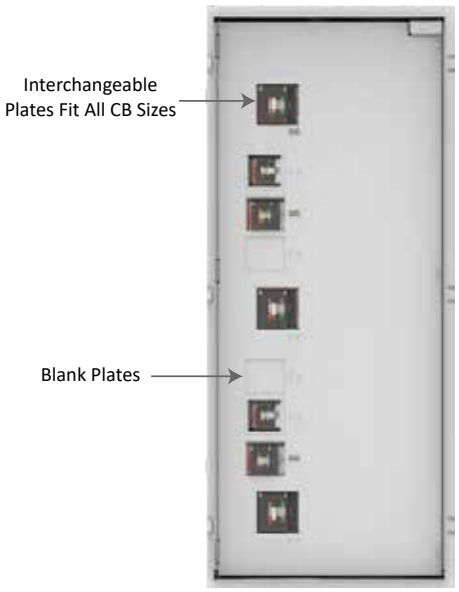
Operational Characteristics	
Cooling	Convection Cooling
Cable Access	Top/Bottom
Service Access	Front and Side Access
IR Scan Port Type	INSIGHT IR® Portholes
Display Type	3.2” LCD with Membrane, 10.5” Color Touch Screen GUI (Optional)
Connectivity	
Meters	Local Display, Ethernet, Modbus/TCP, http via 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

Number of Output Circuit Breakers	
Number of Available SafePanel™ Slots	36
CB Rating	Number of Slots Required
100 AF	2
250 AF	3
400 AF	3
400 AF 100%	6
800 AF	6

SafePanel™ Panel Board



Universal Dead Front



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Learn more at www.LayerZero.com

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