LayerZero Power Systems, LLC.

The Foundation Layer

Series 70 eRPP-SL1

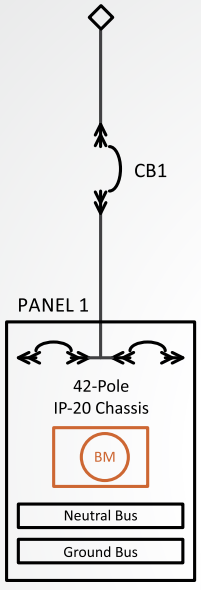
High-Density Slim Remote Power Panel

Product Brochure

eRPP-SL1 Facilitates High-Density Distribution While Maximizing Operator Safety

Make The Most of Available Data Center Space

The SL1 is designed to maximize valuable critical facility space without compromising safety or reliability. Featuring the finger-safe SafePanel® panel board with no exposed live parts, operators are protected during every interaction. Equipped with LayerZero DPQM (Distribution Power Quality Monitoring), the eRPP-SL1 provides advanced visibility into power performance, including real-time waveform capture for proactive diagnostics. For facilities that demand the highest reliability while optimizing limited space, the eRPP-SL1 delivers an ideal balance of safety, intelligence, and efficiency.



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

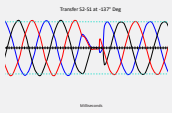
Modbus/TCP:
Open Connectivity to Existing Monitoring Systems Without Proprietary Limitations

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

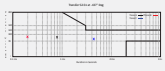
SNMP Connectivity:
Permits Remote Management Via Simple Network Management Protocol

Dry Contacts:
Access Alarms Data with Dry Contacts Connections

Power Quality Monitoring



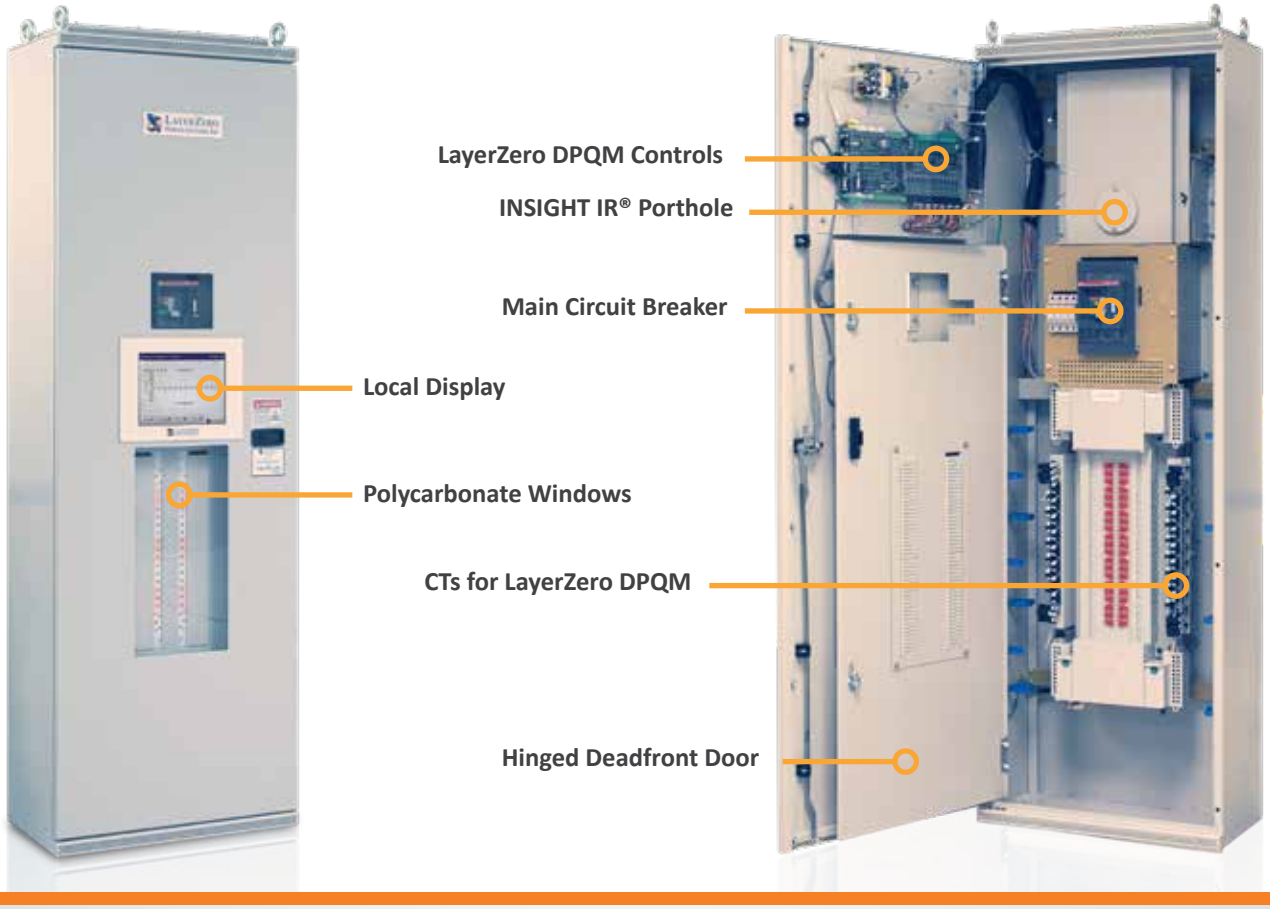
Real-Time Waveform Capture:
Automatically Captures A Picture Of The Power Six-Cycles Before and After Every Event



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

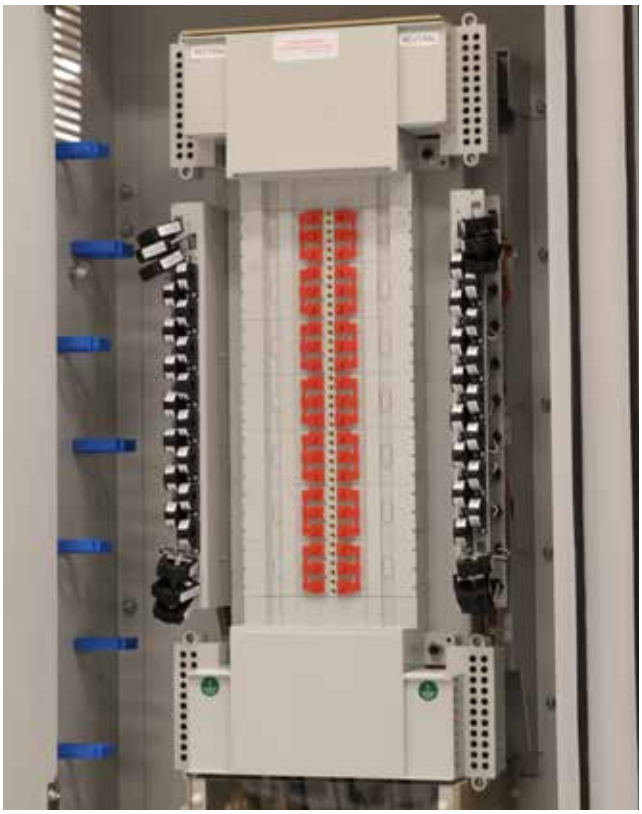


Reliability Features

Selective Trip Coordination

LayerZero SL1 Remote Power Panels are designed with selective trip coordination, ensuring the main breaker remains unaffected by branch circuit breakers during a downstream fault.

This safeguards uptime and prevents unnecessary interruptions to the entire system.



The 42-Circuit Finger-Safe 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

Silver Plating

All bus joints and terminals are silver-plated to deliver the highest performance. With superior conductivity and low resistance, silver produces an exceptionally reliable electrical contact that enhances long-term efficiency.

Silver-Plated Customer Connections

Machined Hardware

Bolted connections feature machined cap screws and engineered disc springs, producing a consistent pressure-versus-deflection profile. This ensures torque stability throughout the life of the product.

Proven in wide-ranging environments, these connections stay secure once tightened, supporting long-term reliability.

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

View Status LEDs and Distribution CB Positions With Dead-Front Doors Closed

The SL1 enhances operator safety with polycarbonate viewing windows built into the outer door. These windows allow visibility of circuit breaker positions and status LEDs without opening the dead-front door, protecting personnel while simplifying monitoring.

Polycarbonate Windows in the SL1 Power Panel

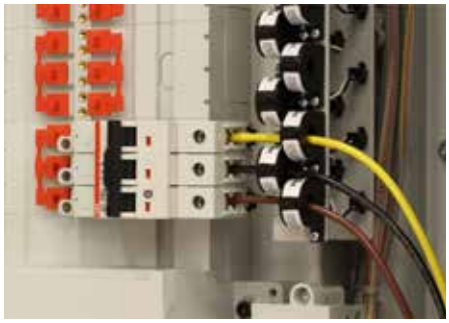
Safety Features

Circuit Breaker Shrouds

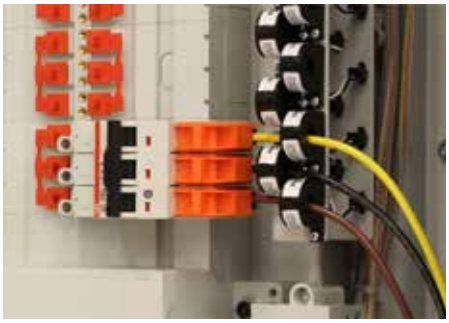
LayerZero Series 70 eRPP-SL1 Remote Power Panel provides optional circuit breaker shrouds, designed to eliminate exposure to live parts.

No Exposed Live Parts

LayerZero's patented Circuit Breaker Shrouds cover exposed wiring, maximizing operator safety.



Wiring Without Shrouds Leaves Wiring Exposed



Circuit Breaker Shrouds Maximize Operator Safety

Scan Bolted Connections with Dead-Front Doors Closed

Strategically positioned IR-scan portholes to enable safe thermal scanning of all bolted connections with the deadfront closed, without exposing the operator to power circuit voltage.

The IR window swivels upward and unlocks with key-hole access to reveal a mesh, allowing the operator to point-and-shoot thermal cameras to obtain accurate readings. LayerZero provides documentation for proper thermal scanning procedures.

INSIGHT IR® Porthole on eRPP-SL1

Safety Features

The LayerZero Finger-Safe SafePanel®

The Series 70 eRPP-SL1 features an IP-20, finger-safe panel board, meaning that the opening will not allow ingress of ½" (12.5mm) diameter probe, for maximum operator safety.

An arc can form as two live conductors are separated – such as the removal of a circuit breaker from a panel board. The SafePanel design ensures that a potential arc would be contained in the connection well so that even if a branch breaker were to be removed, the arc would be contained in the connection well.

Insulated with the components deeply isolated, removal of the breaker is safe and easy.

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

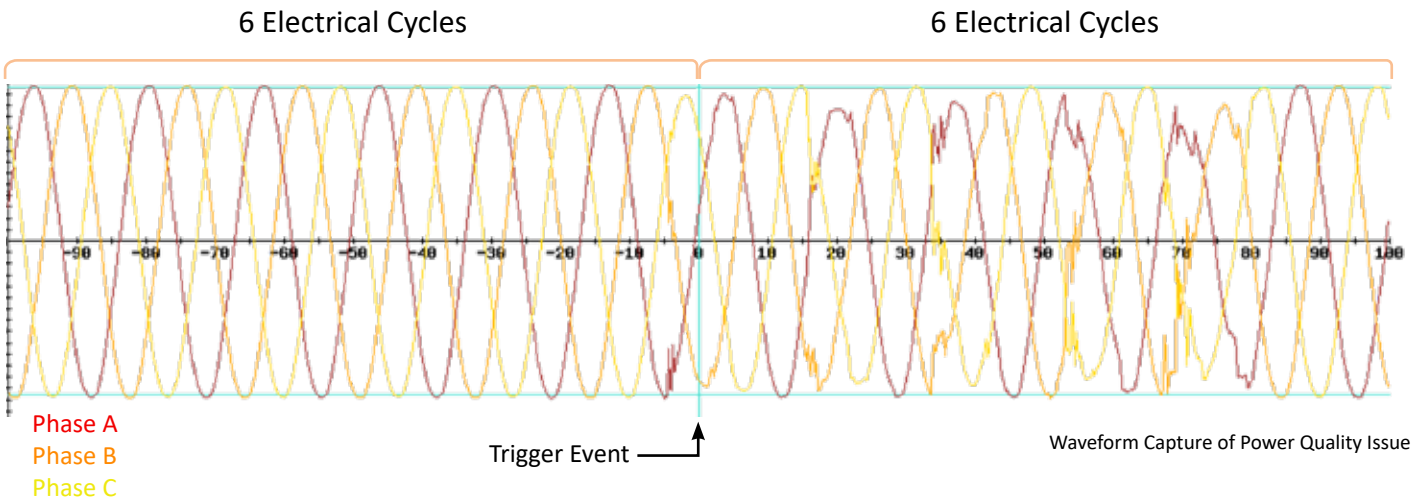
LZ DPQM

The Series 70 eRPP-SL1 is equipped with LayerZero DPQM (Distribution Power Quality Monitoring), an all encompassing monitoring system with local and remote communications options.

From basic monitoring & alarm reporting, to advanced power quality monitoring functionality, LayerZero DPQM provides a wide-range of options to help you be aware, be vigilant, be proactive in your quest to create a safe, stable and reliable operation.

LayerZero DPQM Provides Answers

DPQM delivers timestamped waveform capture before and after power events, giving operators the ability to methodically identify and correct root causes of disturbances. Detailed event information supports thorough post-event analysis, with power quality data actively captured at the STS, PDU, and RPP to ensure visibility across the entire distribution system.



Waveform Capture of Power Quality Issue

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.

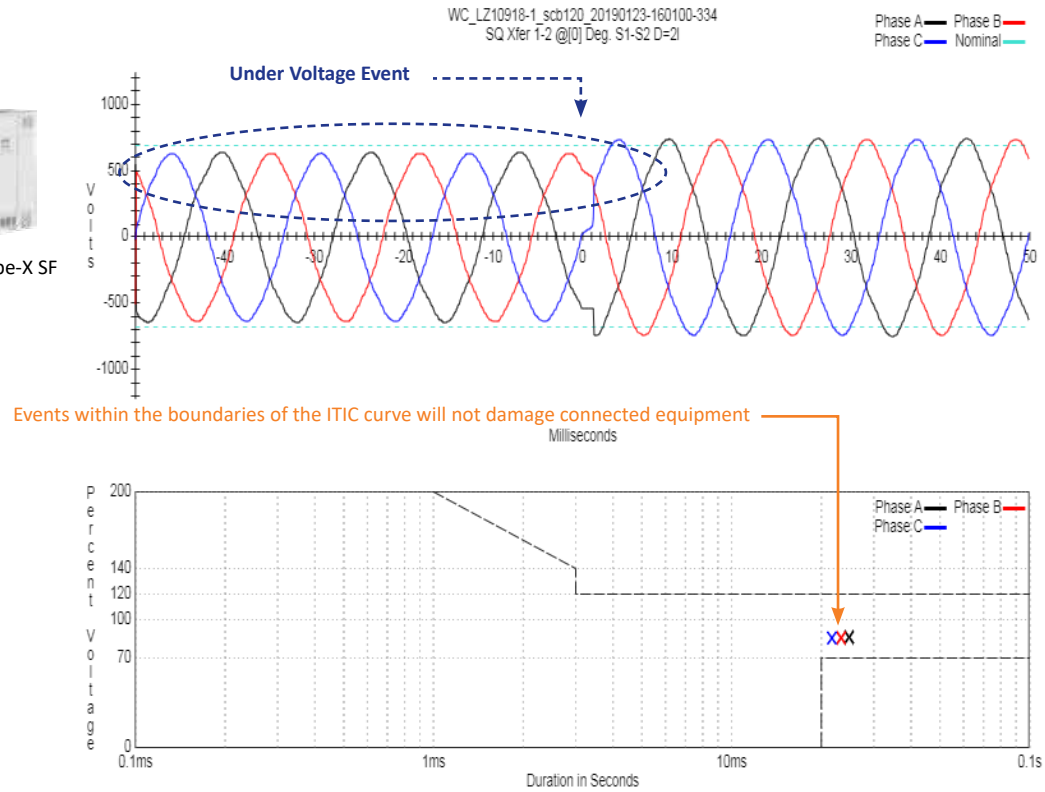
All LayerZero products break down incoming power into samples for detailed analysis, with data accessible remotely through a standard web browser.

A factory “voltage sag” test performed on a Series 70 ePODS: Type-X demonstrated this capability.

In that test, all three phases dropped below a user-defined setpoint, triggering an undervoltage alarm, automatic waveform capture, and the generation of an ITIC plot for review.

On LayerZero PDUs and RPPs, waveforms and ITIC plots are automatically generated for every phase, on every circuit, for every event, providing unmatched visibility and traceability.

ePODs: Type-X SF PDU

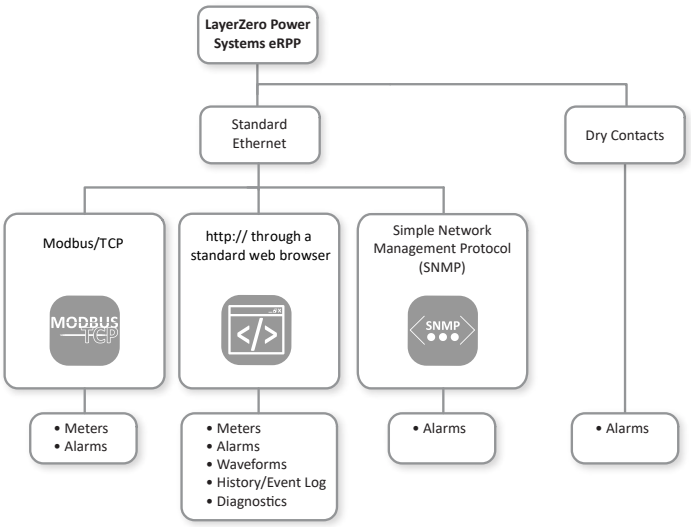


How to Read the Curve

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.

eRPP-SL1 Models with System Withstand Ratings	
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	23.25”W x 71”H x 12“D (590.55 mm x 1803.4 mm x 304.8 mm)
Weight	340 lbs (154 kg)
Enclosure Mounting	Free-Standing, Wall-Mounted
Frame Construction	Welded Frame
Internal 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
Circuit Breaker Mounting Type	Fixed, Plug-In
Frequency	50 Hz, 60 Hz
Poles	3-pole, 4-pole
Input Feeder Termination	Two-Hole, Compression Nema Hole Pattern; Single Mechanical; Dual Mechanical
Neutral Rating	100%, 200%
Number of Output CBs	42-Circuit
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 Top Only Access
IR Scan Port Type	INSIGHT IR® Portholes on Input
Display Type	3.2” LCD with Membrane,
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, UL 67
CSA	CSA 22.2

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Learn more at www.LayerZero.com

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