LayerZero
Power Systems, Inc.

Series 70 ePODs: Type-X-SF

Power Distribution Unit → Transformer → Distribution

Product Brochure

The LayerZero ePODs: Type-X PDU
Maximizes Operator Safety

ePODs Type-X Is Inspired by NFPA-70E

The Series 70 ePODs: Type-X is a Power Distribution Unit for critical industries. It features an NFPA 70E friendly design, open layout, and the IP-20 rated Finger-Safe SafePanel, to help protect operators and ensure safe operation. With an emphasis on reliability, safety, connectivity, and power quality monitoring, the Series 70 ePODs: Type-X provides high-reliability power distribution.

The Series 70 ePODs: Type-X is designed to be easy to work with, featuring a large interior to minimize risk during installation, ideal for growing or constantly changing environments.

Type-X FSL

Type-X FFR

Equipment Layout

Main Circuit Breaker Section:
MCB optional
Mounting: Fixed, Plug-In
Type:
Molded Case Switch
65kA, 100kA
Electronic Trip
65kAIC, 100kAIC
Accessories:
CB Shunt-trip
120VAC, 24VDC
CB Position Indication:
Open, Tripped, Closed

Monitoring Section:
Color-Touch Screen Interface

Distribution Section:
Sub-feed distribution
1200A SafePanel™

Transformer Section:
Energy Efficient
Transformer Optional

Reliability

- Silver Plated Terminals
- Machined Hardware
- Convection Cooling
- Serialized Critical Board Tracking
- Transformer Vibration Isolation

Safety

- InSight™ IR Portholes
- Sectionalized Components
- Polycarbonate Windows
- Dead-Front Hinged Doors
- SafePanel™ Distribution
- Guided Wireways

Connectivity

- Ethernet Connectivity
- Modbus/TCP
- NTP Time Clock Synchronization
- SNMP Connectivity
- Bluetooth Connectivity

zen DPQM

- Waveform Capture
- "Black Box" Forensic Diagnostics
- Touch Screen Interface
- Waveforms Automatically Emailed

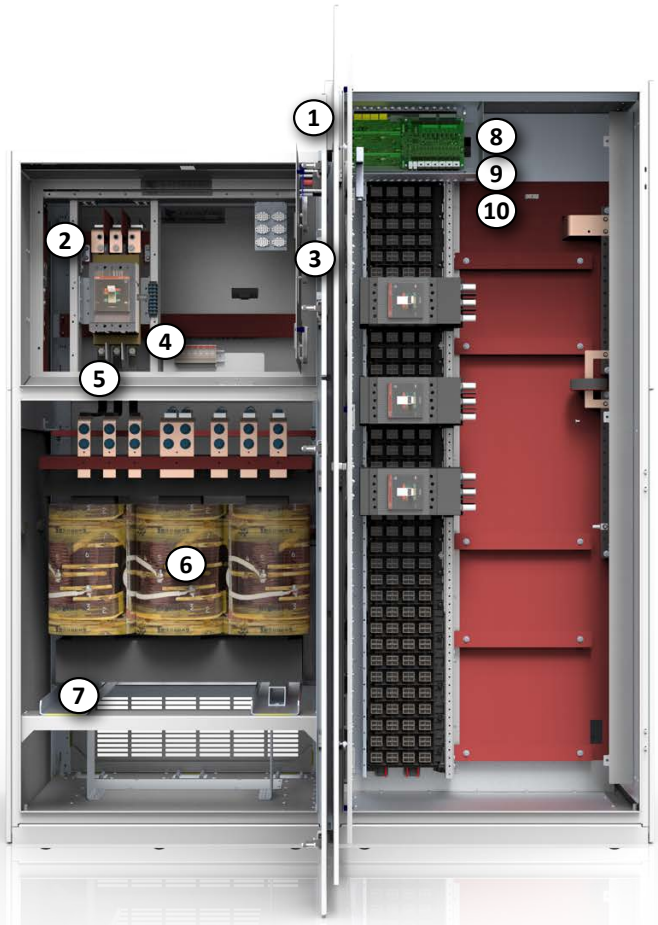
Agency Certification

The Series 70 ePODs: Type-X is ETL and cETL listed to UL 60950

Certified To CSA Std C22.2 No. 107.1

Equipment Construction Detail

1. Hinged Dead Front Doors
2. Silver Plated Terminals
3. 10.5” Color Touch Screen GUI (optional)
4. Main Circuit Breaker
5. InSight™ IR Portholes
6. Transformer
7. Transformer Vibration Isolation Mounts
8. VPN Router
9. Zen DPQM Controls
10. Bluetooth Connectivity



11 Alarm & Bypass Indicator

12. PBM Status Indicator

13 Logged In User

14. Navigation Menu

Available Configurations

Type-X FFR

Type-X FFL

Type-X FSL

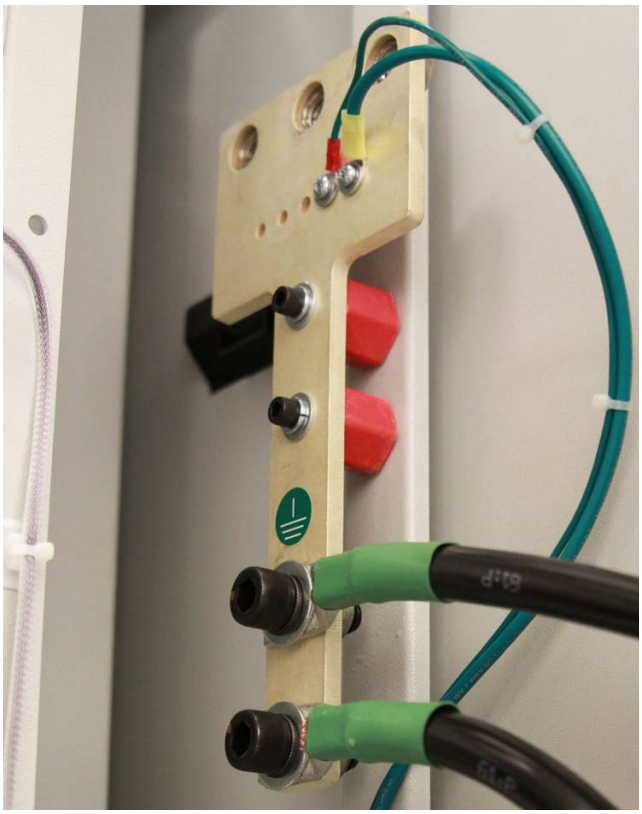
Type-X FSR

Type-X FR

Reliability Features

Silver Plated Terminals

LayerZero utilizes silver plating on all bus joints to be able to provide the highest performance. Silver has high conductivity and low resistance - which makes for a great contact.



No Fans, Dust Filters, or Fan Fuses

Fans and fan sensors are some of the most common components to fail. For maximum uptime, ePODs systems do not contain any fans, dust filters to change, or fan fuses to replace. The Series 70 ePODs: Type-X Power Distribution Unit utilizes a natural convection-cooled heat dissipation system.

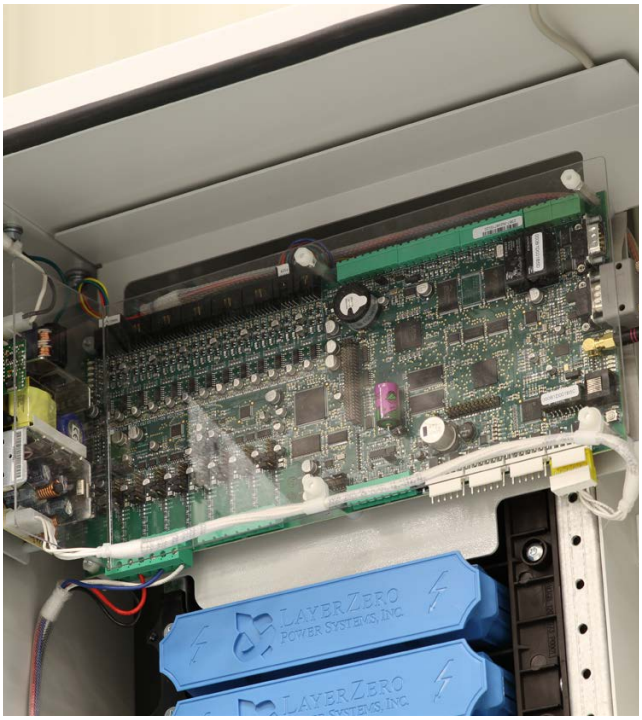
Type-X FR

Reliability Features

Serialized Circuit Boards

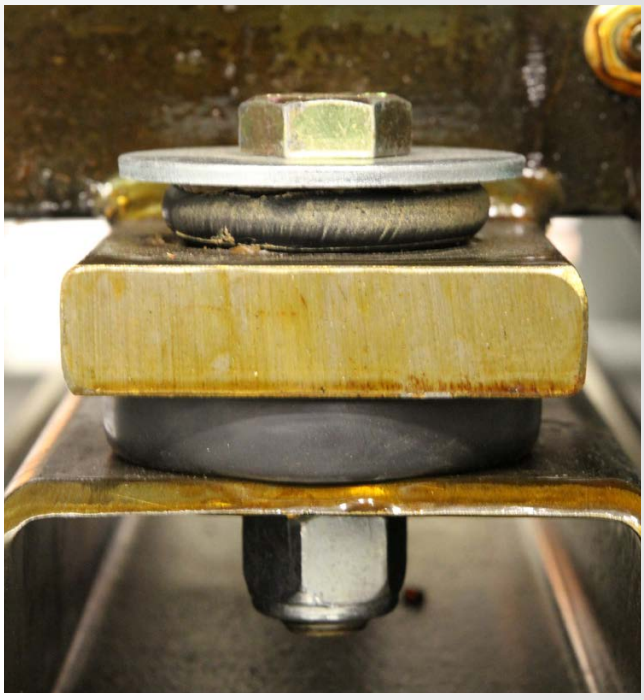
We serialize and track all critical circuit boards and memory cards through our eBOSS portal, which allows customers to reference which components their machines are made from, who tested the components, as well as the ability to view notes generated from testing.

Serialized components offer the ability to drill-down on prospective component failure utilizing predictive modeling techniques, so if part fails, the instance can be cross-referenced with similar parts. This preventative maintenance helps ensure maximum uptime.



Vibration Isolation Damper Mounts

Transformers in the Series 70: ePODs Type-X Power Distribution Unit are equipped with vibration isolation damper mounts, helping to reduce the amount of vibration and noise that originates from transformers, ultimately leading to a higher reliability of electrical and mechanical connections over the life of the product.



Ease of Maintenance

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.

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

Our Series 70 product line was inspired by NFPA-70E, to help data centers drastically reduce the risks of their energy distribution systems.

Operators can view the status of diagnostic LEDs without exposure to the energized power electronics section. In addition, SafePanel circuit breaker positions can be viewed with the dead-front door closed.

Safety Features

The LayerZero 1200 A Finger-Safe SafePanel™

The LayerZero 1200 A SafePanel™ Panel Board is a finger safe panel board with no exposed live parts.

The 1200 A SafePanel™ optionally includes shrouds, covering unused spaces, maximizing operator safety.

The Breaker Is Inserted Into The SafePanel

The Handle Is Unlocked

Screws Help Secure The Breaker

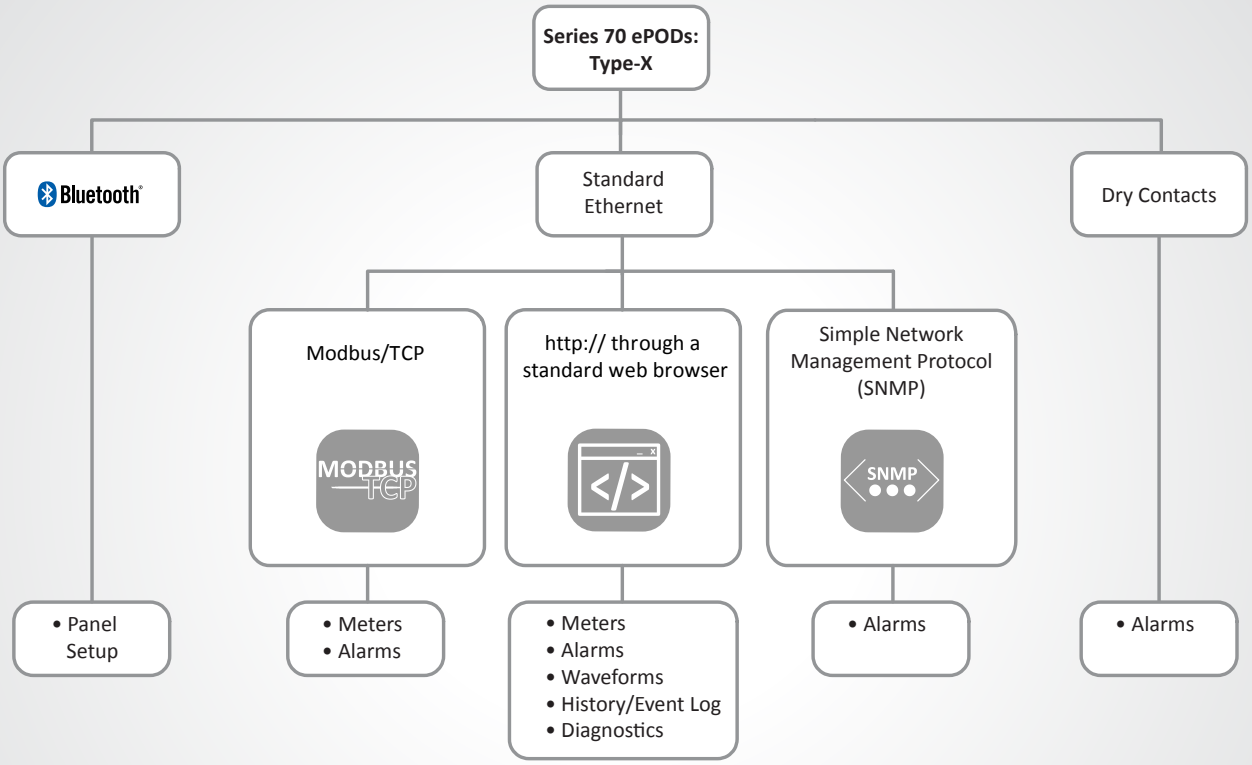
For Maximum Safety, The SafePanel Has Recessed Bus Work And IP-20 Finger Safe Lattice.

Connectivity Options

Bluetooth Keeps Panel Board Names Up-To-Date

Coordinate efforts to keep panel board naming conventions accurate and up-to-date with Bluetooth connectivity. In critical facilities, Facilities typically install the physical circuit breakers, while IT workers manage naming of panel designations.

With Bluetooth connectivity, the naming of circuit breakers can be taken care of at the point-of-impact, bringing together the efforts of facilities and IT for more accurate panel names.



Power Quality Monitoring

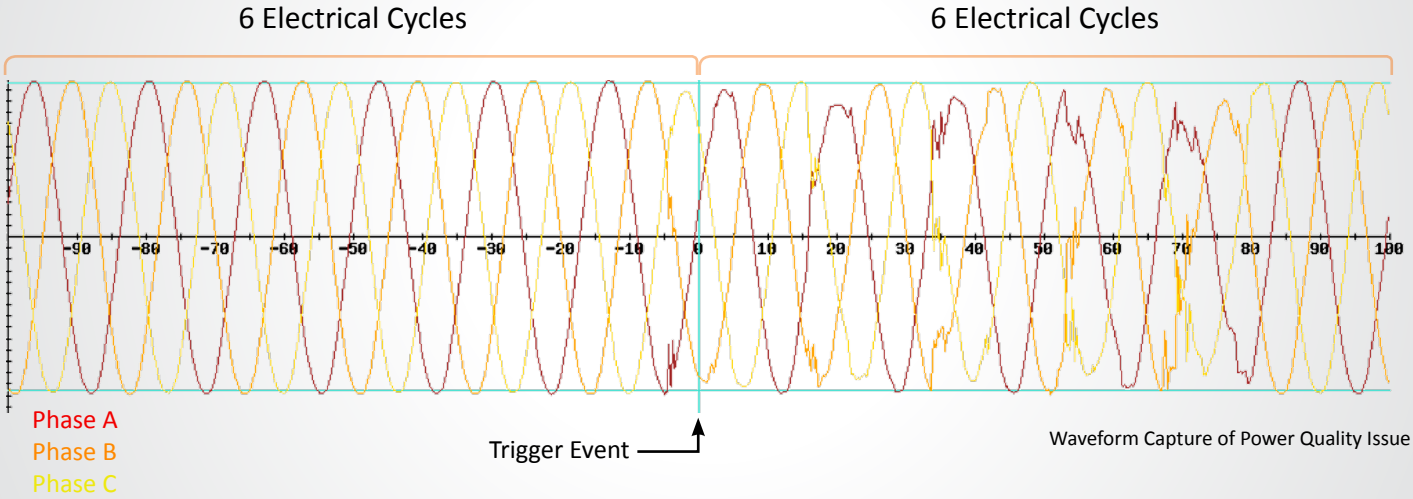
zen DPQM

The Series 70 ePODs: Type-X is equipped with Zen 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, Zen 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.

Zen DPQM Provides Answers

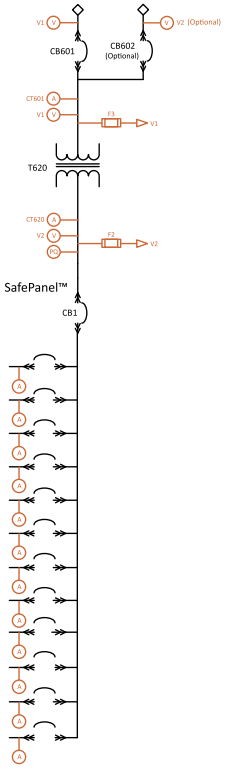
Zen DPQM provides timestamped pictures of waveforms before and after events, providing information that enables facilities to go back in time to methodically identify and correct the root causes of events. Zen actively captures power quality information at the STS, PDU, and RPP - permitting thorough post-event analysis.



Waveform Capture of Power Quality Issue

Power Quality Monitoring

zen DPQM



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

Doors Removed For Visibility

zen DPQM

Zen 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

Mechanical Characteristics							
Configurations	Front-Only Access Right-Side Distribution (FFR); Front-Only Access Left-Side Distribution (FFL); Front-And-Side Access Right-Side Distribution (FSR); Front-And-Side Access Left-Side Distribution (FSL); Front-and-Rear Access Rear Distribution (FR)						
Dimensions (Single Side Distribution)	FFR; FFL		FSR; FSL		FR		
	72” W x 88” H x 36” D (1828 mm H x 2235 mm H x 914 mm D)		48” W x 88” H x 36” D (1219 mm H x 2235 mm H x 914 mm D)		36” W x 88” H x 48” D (914 mm H x 2235 mm H x 1219 mm D)		
Weight (Single-side distribution)	75 kVA	144 kVA	216 kVA	225 kVA	250 kVA	288 kVA	300 kVA
	2,450 lbs (1111 kg)	2,950 lbs (1338 kg)	3,300 lbs (1497 kg)	3,600 lbs (1633 kg)	3,700lbs (1678 kg)	3,900 lbs (1769 kg)	
Heat Dissipation	Varies on Transformer Efficiency, Please Contact LayerZero Engineering.						
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						
Electrical Characteristics							
Input Voltages	480 V; 575 V; 600 V						
Output Voltages	120/208 V; 240/415 V						
Transformer Size	75 kVA, 150 kVA, 216 kVA, 225 kVA, 288 kVA, 300 kVA						
Frequency	50 Hz, 60 Hz						
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	Zen DPQM™ (Distribution Power Quality Monitoring)						
Waveform Capture	Local Display, Remote Display via Web Browser						

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: SafePanel Distribution	
UL	ETL Listed to UL 60950
CSA	C22.2 No 29-M1989

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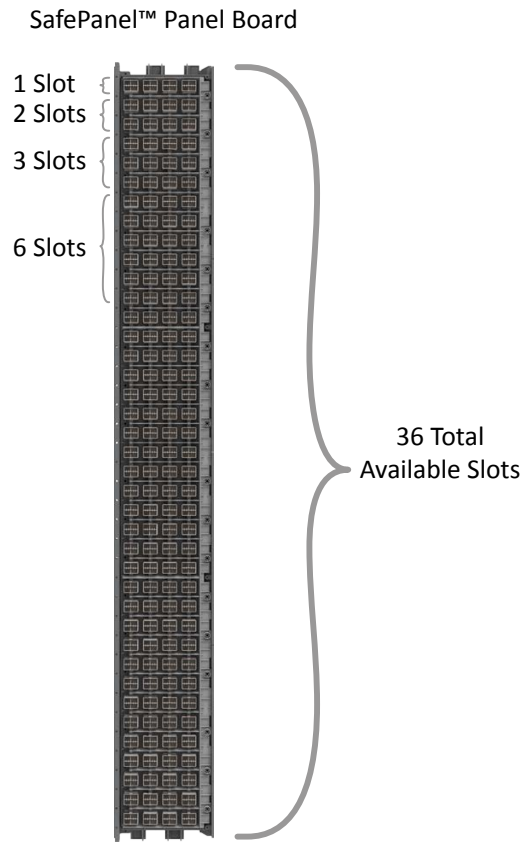
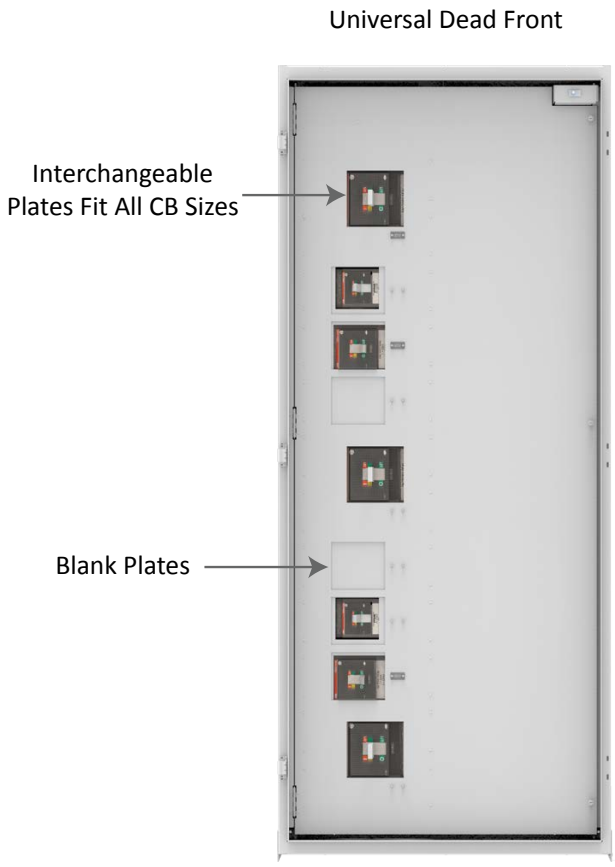
Number of Output Circuit Breakers	
Number of Available SafePanel™ Slots	36 per panel, up to two panels
CB Rating	Number of Slots Required
100 AF	2
250 AF	3
400 AF	3
400 AF 100%	6
800 AF	6





Learn more at www.LayerZero.com

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