

NICKEL-ZINC

NiZn Retrofit Kit



ZincFive

The Power of Good Chemistry™

Upgrade with The Power of Good Chemistry™

- ✓ **Drop-in Ready** – Direct replacement for VRLA batteries, avoiding the regulatory and fire safety challenges of lithium-based retrofits.
- ✓ **Industry Compliant** – Pre-validated configurations are aligned with industry standards and compliance requirements, avoiding risk, delay, or penalties.
- ✓ **Flexible, Scalable Design** – Leveraging ZincFive's NiZn Monobloc batteries and BMS within standard tray formats, the kit provides predictable scope, installation effort, and economics to service providers.
- ✓ **Reduced Maintenance** – With a 15-year lifespan, NiZn batteries do not require replacement after kit installation, significantly lowering total cost of ownership.
- ✓ **Superior Power Density** – NiZn chemistry provides 3x the power density of VRLA batteries, reducing the overall footprint compared to alternate solutions.
- ✓ **Safety Compliance** – With no risk of thermal runaway, NiZn batteries eliminate the need for costly fire-suppression systems.



High Power Density, Where You Need It

The ZincFive NiZn Retrofit Kit offers scalable, repeatable, drop-in replacement of Valve Regulated Lead-Acid (VRLA) batteries, across multiple configurations, to support mission-critical battery back up applications.



NiZn Retrofit Kit



Open Rack Solution

Specifications

Module		NiZn Retrofit Kit
System Overview		
Battery Chemistry	Nickel-Zinc (NiZn), Wet alkali electrolyte	
Application	UPS battery retrofit for VRLA Battery Strings	
UPS Compatibility	External battery cabinet UPS systems	
Typical UPS Size Range	1 MW - 2.5 MW, Engineering Validation may be required	
System Architecture		
Battery Type	NiZn Monobloc	
Nominal Battery Voltage	13 VDC per monobloc battery	
Cells Per Battery	8 cells	
Batteries Per String	36 – 39 batteries, configurable string architecture	
Nominal System Voltage	468 – 507 VDC	
Maximum Charge Voltage	537 – 600 VDC	
Low Voltage Cutoff	360 – 390 VDC	
Battery Performance		
Nominal Capacity	80 – 90 Ah	
Nominal Energy per Battery	1.0 – 1.2 kWh	
Max Continuous Discharge Power	8,000 W – 12,000 W	
Max Discharge Current	800 A – 1200 A	
Short Circuit Current	5,400 A – 7,222 A	
Charging Characteristics		
Charge Voltage	CC to 15.1 VDC (80 Ah)/15.04 VDC (90 Ah) then CV per battery	
Charge Current Range	20 A – 180 A per battery module (160 A HSF, 180 A USF)	
Typical Charge Current	~90 A	
Recharge Time	2 – 5 hours	
Environmental		
Discharge Temperature Range	-20 °C to 50 °C	
Charge Temperature Range	15 °C to 40 °C	
Recommended Operating Temperature	20 °C – 35 °C	
Humidity Range	0 – 95% non-condensing	
Storage Temperature Range	-20 °C to 50 °C	
Storage Duration	6 months at 25 °C before recharge	
Mechanical		
Battery Dimensions (LxWxH)	278 mm x 174.6 mm x 188 mm 10.94 in x 6.9 in x 7.4 in	
Battery Weight	16 – 18 kg (35 – 40 lbs)	
Battery Terminal Type	M6 threaded terminal	
Terminal Torque	9.1 N-m ± 0.9 N-m	
Shelf Type	Retrofit battery tray designed for legacy VRLA cabinets	
Shelf Dimensions	≤38 in, Designed to fit inside 40 in cabinet width, and 29.5-30.5 in depth cabinets	
Shelf Height (per tray)	~8 – 10 in, Dependent on battery orientation	
Shelf Material	Flame-retardant polymeric material with aluminum tray structural supports	
Shelf Mounting	Method compatible with existing cabinet rails; drop-in retrofit architecture	
System Monitoring		
BMS Monitoring Parameters	Real-time battery monitoring of voltage, current, and temperature	
Data Communications	Ethernet, Modbus TCP/RTU, USB	
Power Supply	100 – 240 VAC 50/60 Hz with option 600VDC optional supply	
Certifications		
Battery	UL 9540A, UL 1973, UL 1989, IBC 2021 / ICC AC156	
Battery Management System	UL 61010-1	



Immediate Power Solutions

Safe, reliable and sustainable short-duration high-rate power technologies for critical applications.