

Data Sheet

ZincFive BC Series UPS Battery Cabinet



ZincFive

Introduction

The ZincFive UPS Battery Cabinet is the world's first NiZn (Nickel-Zinc) BESS (Battery Energy Storage Solution) product with backward and forward compatibility with megawatt class UPS inverters. Unique NiZn benefits include:

- Industry-leading safety with no thermal runaway¹
- Depleted NiZn cells remain conductive, enabling reliable string operation
- High power density in a light-weight package
- Module level monitoring, string level management
- Over/under current, voltage, and temp protection
- Easy maintenance pullout battery trays
- Seismic IBC 2018 rated, highly durable cabinet design
- Highly effective charge control across multiple inverter platforms

¹ ZincFive batteries were tested at the cell level to UL9540A, a Test Method for Evaluating Thermal Runaway, and ZincFive's nickel-zinc batteries did not exhibit thermal runaway in any of the five tests.

Benefits of NiZn Technology

Superior Power Density – Approximately 50% the weight of lead acid batteries. Twice the power density.

Low Total Cost of Ownership – Low battery maintenance and small footprint.

Superior Battery Cycle Life – Exceeds twice the typical industry required cycle life

Safety – No thermal runaway nor travel restrictions for NiZn batteries. NiZn batteries contain no hazardous materials.



ZincFive BC Series UPS
Battery Cabinet

Specifications

Model	ZincFive BC Series UPS Battery Cabinet 481V ZF37A6SU221A	ZincFive BC Series UPS Battery Cabinet 494V ZF38A6SU221A	ZincFive BC Series UPS Battery Cabinet 507V ZF39A6SU221A
Electrical			
Nominal Voltage	481 Vdc	494 Vdc	507 Vdc
Charge Voltage Range	552 Vdc to 566 Vdc	567 Vdc to 581 Vdc	582 Vdc to 596 Vdc
Charge Method	BMS adapts lead-acid charge profile to nickel-zinc charge profile and subsequent intermittent boost charge		
Minimum and Maximum Charge Current	20 A minimum; 160 A maximum		
Standard Charging Current	80 A		
Charge Time	Ranges from 2 hours to 5 hours for 0-100% SOC, dependent on charge current		
Low Voltage Cutoff	370 Vdc	380 Vdc	390 Vdc
Nominal Capacity C/2 at 25°C	>80 Ah		
Nominal Energy Storage at C/2	37 kWh	38 kWh	39 kWh
Battery Chemistry	NiZn with starved, KOH aqueous electrolyte (Alkaline, no acid)		
Maximum Discharge Current	800 A		
Single String Battery Configuration	37 Battery modules in a single string per cabinet (37S1P)	38 Battery modules in a single string per cabinet (38S1P)	39 Battery modules in a single string per cabinet (39S1P)
Example Configurations	Recommended 1052 kW Configuration: 4 Cabinets operating at 263 kW each at specified runtime		Recommended 1264 kW Configuration: 4 Cabinets operating at 316 kW each at specified runtime
System BMS Functions			
Monitoring	BMS manages charge/discharge functions and monitors full suite of parameters including battery voltage and temperature; string voltage and current		
Protection Features	Hi/Low Charge/Discharge voltage, current and temperature		
Data Communications	Ethernet, USB		
Safety and Environmental			
Safety	Batteries exhibit no thermal runaway as per UL 9540A		
Breaker Protection	Circuit breaker (manual or upon fault) removes batteries from inverter and isolates battery string in two parts		
Operating Temperature Range ¹	20°C to 35°C		
Storage Temperature Range	-20°C to 50°C		
Storage Period	6 months at 25°C before batteries need charge		
Cooling	Natural convection (no fan)		
Transport	No Transportation Restrictions		
Certifications			
Cabinet	UL1778		
Battery	UL1989		
Seismic	IBC 2018		
Mechanical			
Height	82 Inches (2083 mm)		
Width	26.6 Inches (676 mm)		
Depth	31 Inches (785 mm)		
Total Weight	1,925 lbs. (873 kg)	1,960 lbs. (889 kg)	1,995 lbs. (905 kg)

¹consult with ZincFive for use outside this temperature range

* All Specifications Valid at Operating Temperature Range *All Specifications Subject to Change