All-in-one Sodium-ion Battery UPS EA900YN Series

6kVA-40kVA

All-in-one sodium-ion battery UPS products are based on the market demand from edge computing outlets to ultra-large-scale computing power centers, relying on the latest R&D achievements and application experience in safety and security gathered by EAST Group in the field of sodium-ion batteries, and realizing new breakthroughs in safety, environmental adaptability, intelligent management, and maintainability compared to lithium-ion battery and lead-acid battery to provide users with a more environmentally friendly, safe, and reliable service.

Compared with lithium-ion batteries, sodium-ion batteries have obvious advantages in economy, safety and temperature adaptability. Especially in terms of safety, the sodium-ion battery is outstanding. According to the test of China Automotive Technology and Research Center Co., Ltd.(CATARC), sodium-ion battery does not smoke, catch fire, or explode during the nail penetration test, and it does not catch fire or burn after short-circuit, overcharge, over-discharge, extrusion or other experiments, which makes the safety significantly better than that of lithium-ion battery. At the same time, sodium-ion batteries have better thermal stability, and sodium-ion battery UPS systems are gradually becoming the preferred energy solution for data centers and other critical power applications because of their high efficiency, environmentally-friendly and long life.

Application

ISP internet service providers, IDC data exchange center, medium-sized network management systems/rooms, billing centers, bank/bond clearing centers, business service clusters, industrial process control applications, medium-sized office automation, precision instruments and equipment.

Features

High reliability

- Sodium-ion battery module is equipped with PACK level fire protection as standard configuration, and optional cabinet-level fire protection system, which is safer and more reliable than the lithium-ion battery
- Modular design, fault modules exit automatically, will not affect the normal operation of other modules of the system, improve reliability
- Sodium-ion battery does not smoke, catch fire, or explode during the nail penetration test, and it does not catch fire or burn after short-circuit, overcharge, over-discharge, extrusion or other experiments, so the safety is significantly better than that of a lithium-ion battery
- The sodium-ion battery module adopts 16S1P no parallel mode, no circulating current, and adopts DC/DC boost mode to improve system reliability

High availability

- Sodium-ion battery modular design, easy to replace, high maintainability, to achieve higher power density integration and miniaturization
- The all-in-one sodium-ion battery UPS is flexible in configuration and can expand the capacity of modules or cabinets according to the UPS capacity
- It adopts a high-security intelligent BMS system, which can be configured with HMI monitoring and intelligent visualization management
- Small footprint and high energy density, saving 70% of footprint compared to lead-acid battery
- High rate charging - supports 1H high-speed charging, saving more than 80% charging time compared to lead-acid battery
- The UPS can be started directly with the battery in the absence of mains to meet emergency requirements
- The conversion time of the UPS power supply mode is zero when the mains is unstable, which guarantees that the output will not break down

High intelligence

- The sodium-ion battery module is equipped with fault self-recovery, real-time equalization function of the battery cells, and provides overvoltage, undervoltage, overcurrent, short-circuit, high and low temperatures and other protection functions, which improves the reliability of the module and increases the life of the battery
- Intelligent charge and discharge management to avoid overcharge and over-discharge
- The sodium-ion battery module automatically detects the internal temperature of the battery, which has better thermal stability and reliability

Energy-saving and environmentally friendly

- Compared with lead-acid and lithium-ion batteries, sodium-ion batteries do not contain toxic and harmful substances, and have less impact on the environment, which is more environmentally friendly
- The UPS control utilizes active power factor correction (PFC) technology with an input power factor of up to 0.99

Warranty

- Promised 5-year warranty

Sodium-ion battery module technical parameters (EUN24050R15S1P)

MODEL		EUN24050R15S1P
Basic parameters	Cathode material	NaFePO4
	Design life	10 years
	Rated capacity	50AH/2280WH
	Cooling mode	Forced-air cooling
Electrical Characteristics	Output voltage	240VDC
	Max. output power	7500W@240V
	Max. charging current	8A@270V
	Start-up time	50-60S
	Max. parallel number	CAN: 16 units
	Cycle life	3000 times(1C, 80% DOD, 25°C)
Mechanical Properties	Dimension(W×D×H)(mm)	440×700×160(3U)(without hanging lug)
	Weight	≤46.5kg
	Installation type	Standard 19-inch rack
	Communication interface	CAN/RS485; 1pc DO; 1pc DI
Environments	Operating temperature	0°C~40°C no derating, 40°C~50°C power linear derating to 50%
	Storage temperature	0°C~55°C
	Transport temperature	-40°C~+60°C
	Relative humidity	0%~95%(non-condensing)
	Altitude	Altitude ≤1000m, load derated 1% per 100m above 1000m, up to 5000m

Specifications

MODEL	EA906/9010YN		EA9010/9015/9020YN			EA9910/9920YN		EA9930/9940YN	
Rated capacity	6kVA	10kVA	10kVA	15kVA	20kVA	10kVA	20kVA	30kVA	40kVA
INPUT									
Input phases	Single-phase three-wire (1Φ+N+PE)		Three-phase five-wire (3Φ+N+PE)			Three-phase five-wire(3Φ+N+PE)			
Input rated voltage	208/220/240Vac		380/400/415Vac			380/400/415Vac			
Input rated frequency	50/60Hz								
Input voltage range	110~176Vac(linear derating between 50%~100% load)176~288Vac(No derating)		190~304Vac(linear derating between 50%~100% load) 304~478Vac(No derating)			228~304Vac(linear derating between 50%~100% load) 304~478Vac(No derating)			
Input frequency range	40Hz~70Hz								
Input power factor	>0.99								
Input current THDi	<5%(linear load)					<3%(linear load)			
Battery module voltage	240VDC								
OUTPUT									
Output phases	Single-phase three-wire(1Φ+N+PE)					Three-phase five-wire(3Φ+N+PE)			
Output rated voltage	208/220/230/240Vac					380/400/415Vac			
Output rated frequency	50/60Hz								
Output power factor	≥0.99								
Output voltage accuracy	±1%(linear load)								
Output frequency accuracy	50/60Hz±0.1%								
Output THDu	THD <1%(linear load), THD <4%(non-linear load)		THD <1%(linear load), THD < 3%(non-linear load)						
Overload capacity	105%~110%, 10 minutes; 110%~125%, 1 minute; 125%~150%, 30s					<110%, 60 minutes; 110%~125%, 10 minutes; 125%~150%, 1 minute; >150%, 200ms			
SYSTEM									
System efficiency	Online mode: 94%; ECO mode: 98%					Online mode: 95%; ECO mode: 98%		Online mode: 96%; ECO mode: 98.5%	
Switching time	0 ms								
Display	LCD								
Communication interface	Standard configuration: RS232, RS485, cold start								
Protections	Low battery protection, output overload protection, output short-circuit protection, overtemperature protection etc.								
OPERATING ENVIRONMENT									
Operating temperature	0~40°C								
Storage temperature	-25°C~55°C(without battery)								
Relative humidity	0%~95%(non-condensing)								
Noise level at 1m	≤55dB		≤58dB			≤60dB		≤65dB	
Altitude	Altitude ≤1000m, load derated 1% per 100m above 1000m								
OTHERS									
Dimension (W×D×H)(mm)	600×850×1600							600×850×2000	
Battery pack module number(MAX)	6							8	
UPS input power distribution module	Input switch, output switch, maintenance switch, battery switch, lightning protection unit(height 4U)								
UPS feed out power distribution module(optional)	32A1P×1, 16A1P×3		32A3P×1, 16A1P×4			32A3P×1, 16A1P×4		63A3P×1, 32A3P×3, 16A1P×4	