AESON POWER

SAFE POWER THERMAL STABILITY

Safer, Stronger, Go Longer

SODIUM-ION & LITHIUM-ION BATTERIES AND ENERGY STORAGE SYSTEM

The future of battery storage in cyclic and standby applications.

www.aesonpower.com

Company Profile

Aeson Power is an Australian company taking sodium ion technology globally. We are a major partner with the China based XuPai Group to delivery factory direct supply of lead-acid, lithium-ion and sodium-ion batteries for every application.

Manufacturing

Aeson Power delivers safe, reliable and high-quality products. We have 7 specialist factories with over 30 years of experience in R&D and manufacturing. Our manufacturing team has developed secure supply chains and rigorous quality control to ensure every product meets the highest global standards.

Sodium Ion Technology

Sodium Ion Technology will provide you with many benefits. Its energy is derived from one of the most clean and common materials on the planet – salt (Sodium Chloride = NaCl). Its performance exceeds any lead battery and is like a lithium battery.

However, it is different in some key areas, chiefly it does not suffer from very cold or very hot temperatures, and crucially, it does not suffer from thermal runaway, which results in battery fires.

Why Sodium-Ion Batteries?

Technical Landscape of Mainstream Cathode Materials

Positive Electrode Technology Routes	Advantages	Disadvantages
Layered Oxides (NFM)	High energy density	Poor safety, high cost, and poor cycle life
Polyanion Compounds(NFPP)	Good cycle life	Low energy density
Prussian Blue Analogs (PBA)	High energy density	Difficulty in removing moisture during manufacturing, and toxic gases generated under specific conditions

Lead-Acid, Lithium, and Sodium-Ion Batteries Comparison

	Lead Acid = Pb	LFP	NMC	NFPP
Energy Density (Wh/kg)	30~50	120~200	200~300	100~130
Cycle Life	>700	5000~6000	2500~5000	>5000
Voltage Range	1.75~2.4V	2.5~3.65V	2.8~4.3V	1.5~3.65V
High-Temperature Performance	Moderate	Limited	Poor	Good
Low-Temperature Performance	Moderate	Poor	Good	Good
Cost	Low	Relatively High	High	Low

THE CATALOG OF PRODUCTS

01

Batteries

- SIBPOM-12100 (Na^+ NFPP)
- SIBPOM-4850 (Na^+ NFPP)
- SIBPOM-4850 Pro(Na^+ NFPP)
- LIBLFP APS5000 (Li^+ LFP)
- Performance Comparison: Sodium Ion 12V 100Ah vs Lead AGM 12V 100Ah
- Performance Comparison: Sodium Ion 48V 50Ah*2 vs Lithium Ion 48V 100Ah

02

Accessories

- EcoBox
- EcoCase
- EcoCab

03

ESS

- SIBPOM-75/150, 125/150 (Na^+NFPP)

30 GWh
Annual Production Capacity

90
Production Lines

1.1M sqm
Area Covered

7
Manufacturing Centres

Batteries

ESON
POWER
SIBPOM-12100
SODIUM ION
TECHNOLOGY
12V 100Ah Sodium-ion Battery

SIBPOM-12100 (Na^+NFPP)

SIBPOM-12100 is uninterrupted Power Supply (UPS) or standby/backup rechargeable battery using Sodium Ion (Na) Technology.

No BMS required, so the risk of failure is greatly reduced. Temperature control equipment may not be needed.

Features:

Application:

Technical Specifications

Item		SIBPOM-12100
Series Characteristics	Application	UPS/Standby Energy Storage
	Technology	Sodium Ion (Na^+)
	Cathode Material	Polyanionic
	Chemistry	NFPP
	Communication	No BMS or Bluetooth
	Balance Bar	No
	Circuit Protection	Busbar. No internal fuse.
Electrical Specifications	Nominal Voltage	12V
	Nominal Capacity	100Ah
	Energy Capacity	1140Wh
	Usable Capacity	100%
	Cycles	5,000 – 100% DoD @ 0.5C @ 25°C 2,000 – 100% DoD @ 1C @ 25°C
	Charge Rate (Recommended)	0.5C
	Voltage Range (Working)	6V – 14.4V
	Charge Voltage (Recommended)	13.2V (0°C ~ +80°C)
	Operating Temperature Range	-30°C ~ +80°C
	Charger Type(Recommended)	Lithium, but do not use recondition mode. You can also use lead battery, but do not use de-sulphation or recondition mode. Power Supply mode is also possible.
Phyiscal Specifications	Dimensions (L x W x H)	332 x 172 x 221 (mm)
	Weight	16kg
	Case Material	UL94 V0
	Terminal Type	M8 insert bolt
Special Features	Parallel Connection ONLY	Refer to Series Warranty Document
	Maintenance Free	Yes
	Fully Sealed	Yes
Certifications	Certifications, Standards Compliance and Registration	CE-EMC, UN38.3, IEC6000, AU/NZ EESS, IEC62619* E/N 50342*, JB/T 12666-2015* * Compliant - passed testing, but no certification because no specific international Sodium Ion standard yet

SIBPOM-4850 (Na^+NFPP)

SIBPOM-4850 rack mounted batteries are perfect for off-grid and grid connected energy storage systems.

They will deliver lithium-like performance without the risk of thermal runaway and fire, or the limitations of cold or hot climates.

SIBPOM-4850 does not require a BMS, operating just like a lead-acid battery.

Non-toxic, natural materials makes them the environmentally friendly choice.

Features:

Application:

Technical Specifications

Item		SIBPOM-4850
Electrical Specifications	Rated Capacity	50Ah
	Nominal Voltage	48.5V
	Discharging Cut-off Voltage	40V(25.5V)
	Charging Cut-off Voltage	56.1V(56.1V)
	Internal Resistance	≤17.5m Ω
	Standard Charging	Continuous Current: 50A Cut-off Voltage: 56.1V
	Standard Discharging	Continuous Curent: 50A Cut-off Voltage: 40V
	Max Continuous Charging Current	50A
	Max Continuous Discharging Current	50A
	Peak Charge/Discharge Current	60A@15min
	Peak Charge/Discharge Current	100A@10s
	Operating Temp. Range	Charging:-10-50°C Discharging:-45-65°C Cell:80°C
	Storage Temp. Range	25±3°C
Phyiscal Specifications	Dimensions(W*D*H)	486*563*133(mm)
	Weight	43kg±3kg
	Shipped Product Charging	40%
	Packaging Material	Cardboard

SIBPOM-4850 Pro (Na^+NFPP)

SIBPOM-4850 Pro rack mounted batteries are perfect for off-grid and grid connected energy storage systems.

They will deliver lithium-like performance without the risk of thermal runaway and fire, or the limitations of cold or hot climates.

SIBPOM-4850 Pro has a BMS and communications for maximizing performance, safety and remote monitoring.

Non-toxic, natural materials makes them the environmentally friendly choice.

Features:

Application:

Technical Specifications

Item		SIBPOM-4850 Pro
Electrical Specifications	Rated Capacity	50Ah
	Nominal Voltage	48.5V
	Discharging Cut-off Voltage	40V(25.5V)
	Charging Cut-off Voltage	56.1V(56.1V)
	Internal Resistance	≤17.5m Ω
	Standard Charging	Continuous Current: 50A Cut-off Voltage: 56.1V
	Standard Discharging	Continuous Curent: 50A Cut-off Voltage: 40V
	Max Continuous Charging Current	50A
	Max Continuous Discharging Current	50A
	Peak Charge/Discharge Current	60A@15min
	Peak Charge/Discharge Current	100A@10s
	Operating Temp. Range	Charging:-10-50°C Discharging:-45-65°C Cell:80°C
	Storage Temp. Range	25±3°C
Phyiscal Specifications	Dimensions(W*D*H)	486*563*133(mm)
	Weight	43kg±3kg
	Shipped Product Charging	40%
	Packaging Material	Cardboard

LIBLFP APS5000 (LFP)

LIBLFP APS5000 lithium-ion batteries are CEC listed and proven to be easy to install and compatible with any quality inverter.

The batteries can operate with OR without communications with an inverter. Bluetooth dongle allows cell evel inspection and identifies a module with an error.

They have been designed for use in the harshest conditions for off-grid and grid connected cyclic applications.

Keeping the design simple, they are extremely durable.

Features:

- LIGHT WEIGHT
- MATCH TOP INVERTER
- FLOOR MOUNTED
- 100% USEABLE CAPACITY
- CEC LISTED

Application:

- Solar Battery System
- Emergency Back up
- Off-Grid
- On-Grid

Technical Specifications

Item		Parameters	Note
Series Characteristics	Battery Cell Technology	Lithium Iron Phosphate	
Electrical Specifications	Cycle Life	⩾6000	@25°C80%DoD @25°C60%EOL
	Design Life	15+years	@25°C
	Discharge Voltage	46.4V~47V	
	Charge Voltage	56V~57V	
	Standard Charge Current	20A	0.2C
	Max. Continuous Charge/Discharge Current	100A	1C
	Peak Charge/Discharge Current	101~120A	@15min
	Peak Charge/Discharge Current	121~200A	@10s
	Communication	RS485, CAN,RS232	
	Nominal Capacity	100Ah	
	Nominal Voltage	51.2V	
	Charge & Discharge Efficiency Discharge	>98%	0.5C Charge;1C
	Self-discharge/month	⩽3%	50% SOC
	Enclosure Protection Rating	IP20	
	Working Temperature Discharge	-20°C~50°C	
	Working Temperature Charge	0°C~60°C	
	Working Temperature Storage	-5°C~45°C	
	Humidity	5%~95%(RH)	No Condensation
Phyiscal Specifications	Dimension	442*470*133(mm)	
	Weight	44kg± 1kg	
Certifications	Certifications,Standards Compliance and Registration	UN38.3/IEC 62619 IEC62040/CE/MSDS/CEC	

Performance Comparison

Sodium Ion 12V 100Ah vs Lead AGM 12V 100Ah

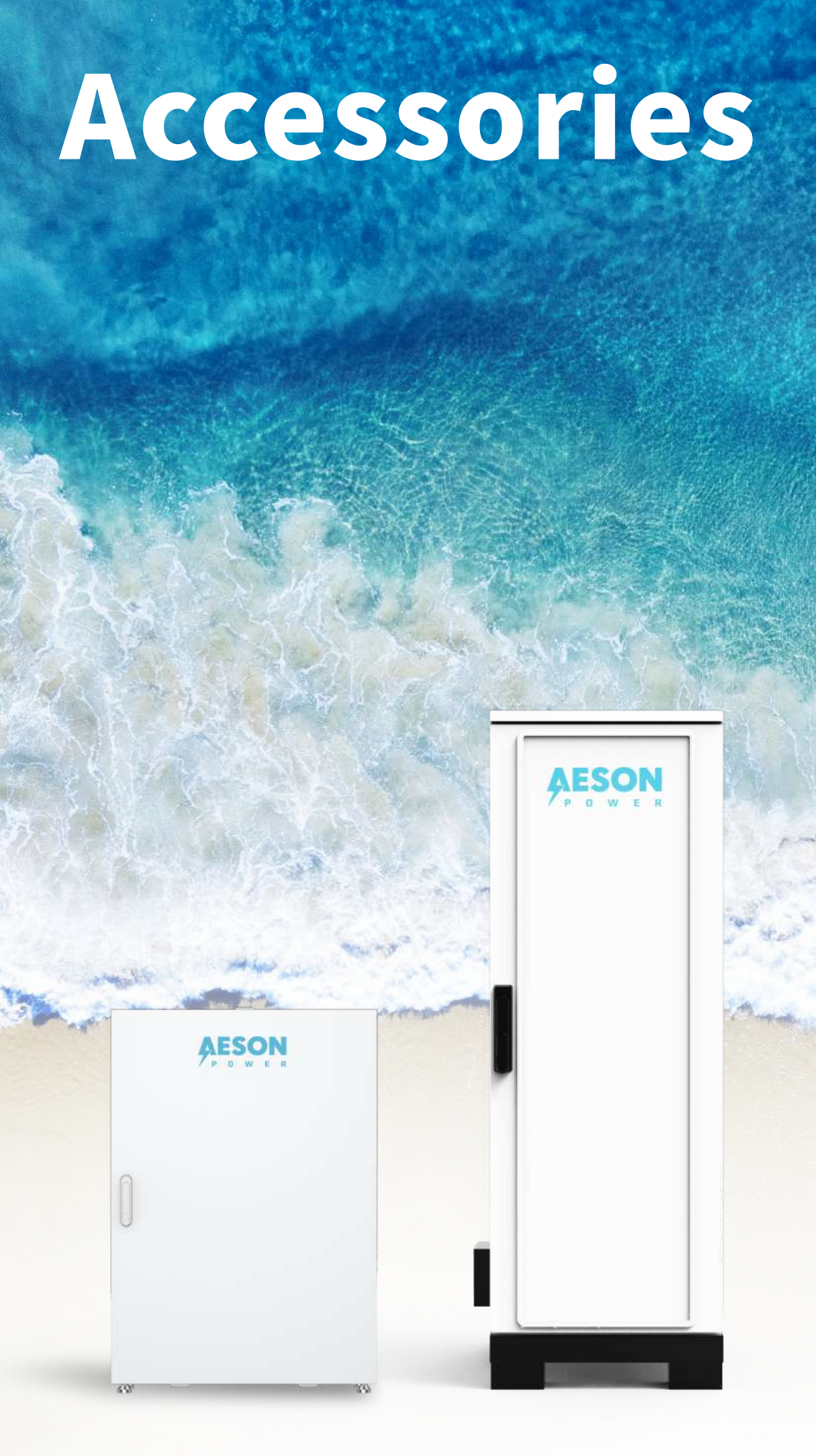
LEAD-ACID	SODIUM
	Na^+ Na^+
Amp Hour Capacity	
100Ah	100Ah
Recommended Depth of Discharge	
50%DoD	80%DoD (Max. usable capacity is 100%)
Recommended Charging Rate	
0.2C	0.5C(150% faster) Max. is 1C
Lifetime Cycles	
Approx. 700	5000
Min. Voltage Without Damage Cycles and Performance	
11.8~12V	0.0V
Lifetime Energy Output (Ah × V ×Cycles)	
Approx.420kWh	Approx.19.2MWh

Performance Comparison

Sodium Ion 48V 50Ah*2 vs Lithium Ion 48V 100Ah

LITHIUM	SODIUM
Li^+	Na^+ Na^+
Amp Hour Capacity	
100Ah	100Ah
Recommended Depth of Discharge	
90%DoD	80%DoD (Max. usable capacity is 100%)
Recommended Charging Rate	
0.5C	0.5C
Lifetime Cycles	
6000	5000
Min. Voltage Without Damage Cycles and Performance	
11.8~12V	0.0V
Lifetime Energy Output (Ah × V ×Cycles)	
Approx.25.92MWh	Approx.19.2MWh

Accessories



AESON
POWER

ECO BOX

Suits LIBLFP APS5000, SIBPOM-4850 Pro, SIBPOM-4850

ECO BOX: 1085*750*217(mm) pre-wired enclosure for 2 * LIBLFP APS5000, 2 * SIBPOM4850 Pro or 2 * SIBPOM4850.

Features:

- UP TO 2 MODULES
- WATERPROOF
- IP54 PROTECTION
- FLOOR MOUNTED
- MATCH TOP INVERTER

Application:

- Home
- Outdoor

Technical Specifications

Item	ECO BOX
Pre-configured	PRE-WIRED with Busbar
Number of Battery Modules	Up to 2
Installation	Wall or Floor
Dimensions (W*D*H)	1085*750*217(mm)
Weight	20kg
IP Rating	IP54
Anti-Corrosion	C4H
Cooling	Natural Air Convection
Power Cables	Rear Wiring
Colour	White RAL9016

ECO CASE

Suits LIBLFP APS5000, SIBPOM-4850 Pro, SIBPOM-4850

Features:

Application:

Home

Outdoor

Technical Specifications

Item	ECO CASE
Pre-configured	PRE-WIRED with Busbar
Number of Battery Modules	Up to 4
Installation	Wall or Floor
Dimensions (W*D*H)	475*1250*750(mm)
Weight	90kg
IP Rating	IP54
Anti-Corrosion	C4H
Cooling	Natural Air Convection
Power Cables	Rear Wiring
Colour	White RAL9016

ECO CAB

Suits LIBLFP APS5000, SIBPOM-4850 Pro, SIBPOM-4850

ECO CAB: 622*1800*843(mm) pre-wired enclosure for 8 * LIBLFP APS5000, 8 * SIBPOM4850 Pro or 8 * SIBPOM4850.

Features:

- UP TO 8 MODULES
- WATERPROOF
- IP54 PROTECTION
- FLOOR MOUNTED
- MATCH TOP INVERTER

Application:

- Home
- Outdoor

Technical Specifications

Item	ECO CAB
Pre-configured	PRE-WIRED with Busbar
Number of Battery Modules	Up to 8
Installation	Wall or Floor
Dimensions (W*D*H)	622*1800*843(mm)
Weight	220kg
IP Rating	IP54
Anti-Corrosion	C4H
Cooling	Forced Air Cooling
Power Cables	Rear Wiring
Colour	White RAL9016

ESS

for Commercial & Industrial

SIBPOM-75/150,125/150 (Na^+NFPP)

All-in-One BESS
Plug and Play Sodium Ion solution for:

Extreme hot and cold climate
Lithium prohibited applications
Safe Transport at 0.0 volts

Features:

SAFE POWER THERMAL STABILITY

ALL-IN-ONE DESIGN

HIGH ENERGY DENSITY

DEPTH OF DISCHARGE

EXTREME TEMPERATURE

CLUSTER MANAGEMENT

Application:

Commercial Buildings

Industrial Parks

Data Center

Hotels and Residences

Technical Specifications

Item		SIBPOM-75/150	SIBPOM-125/150
AC Information	Rated Voltage	400V	400V
	Voltage Range	300V~460V	300V~460V
	Rated Power	75kW	125kW
	Maximum Power	90kW	150kW
	Rated Frequency	50/60Hz	50/60Hz
	Wiring Method	Standard Connection	Three-Phase Four-Wire
DC Information	Rated Voltage	837.9VDC	837.9VDC
	Voltage Range	588.00~970VDC	588.00~970VDC
	Rated Charging/Discharging Power	75kW	125kW
	Max Charge/Discharge Current	128A	212A
	Nominal Capacity	150.882kWh	150.882kWh
System Information	Battery Configuration	1P294	1P294
	Battery Type	Sodium-ion,180Ah,2.85V	Sodium-ion,180Ah,2.85V
	Power Factor	> 0.99	> 0.99
Basic Information	Maximum Conversion Effciency	90%	90%
	Cooling Method	Air Conditioning Cooling	Air Conditioning Cooling
	Fire Protection Medium	Aerosol	Aerosol
	Operating Altitude	⩽2000m, Derating at 4000m	⩽2000m, Derating at 4000m
	Protection Level	⩾IP54	⩾IP54
	Corrosion Resistance Level	C4H	C4H
	Dimensions(W*D*H)	1400*1700*2100(mm)	1400*1700*2100(mm)
	Weight	⩽2.7t	⩽2.7t
	Communication Protocol	Modbus TCP	Modbus TCP
	Units in Parallel Connection	**On Grid up to 32; Off Grid up to 6**	
	BMS	**Integration**	
	EMS	**Local integration**	
	User Interface	**ModbuS TCP/IP, IEC 61850, IEC 104, CAN**	
	Remote Monitoring	**4G Ethernet**	
	Inverter	**AS4777 Compliant Grid-tie Inverter**	
Compliance Standards	UN 38.3, UN 3551, UN3552, IEC 61000, IEC 62619, IEC 62477,IEC 60529		

AESON POWER

AESON POWER PTY LTD
Address: 3 Cochrane Street, Mitcham,
VIC 3132, Australia
www.aesonpower.com
contact@aesonpower.com
+61 3 9545 5993