Elecnova

SHANGHAI ELECNOVA ENERGY STORAGE CO., LTD.

ENERGY STORAGE SYSTEM

Elecnova

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ABOUT US

Shanghai Elecnova Energy Storage Co.,Ltd is a hi-tech enterprise, focusing on integrated ESS solutions. Elecnova is capable to provide complete ESS package consisting of PACK, PCS, BMS and EMS.

Product as core, quality as cornerstone, Elecnova aims to meet the diversified energy requirements from all over the world. Elecnova is committed to providing customized ESS products and services for various scenarios such as power plant, power grid, commercial and industrial applications.

Corporate Vision

· Build Elecnova as a top expert in energy storage solutions

Enterprise Spirit

· Unity in a concerted effort
· Honesty
· Intelligence, innovation
· Scientific development

Core Values

· Create value for customers
· Share value with employees
· Contribute value to community

ESS Scenarios

Provide one-stop industrial and commercial distributed energy storage battery system solutions with high safety, high reliability, high efficiency and long cycle life.

① Industrial Parks

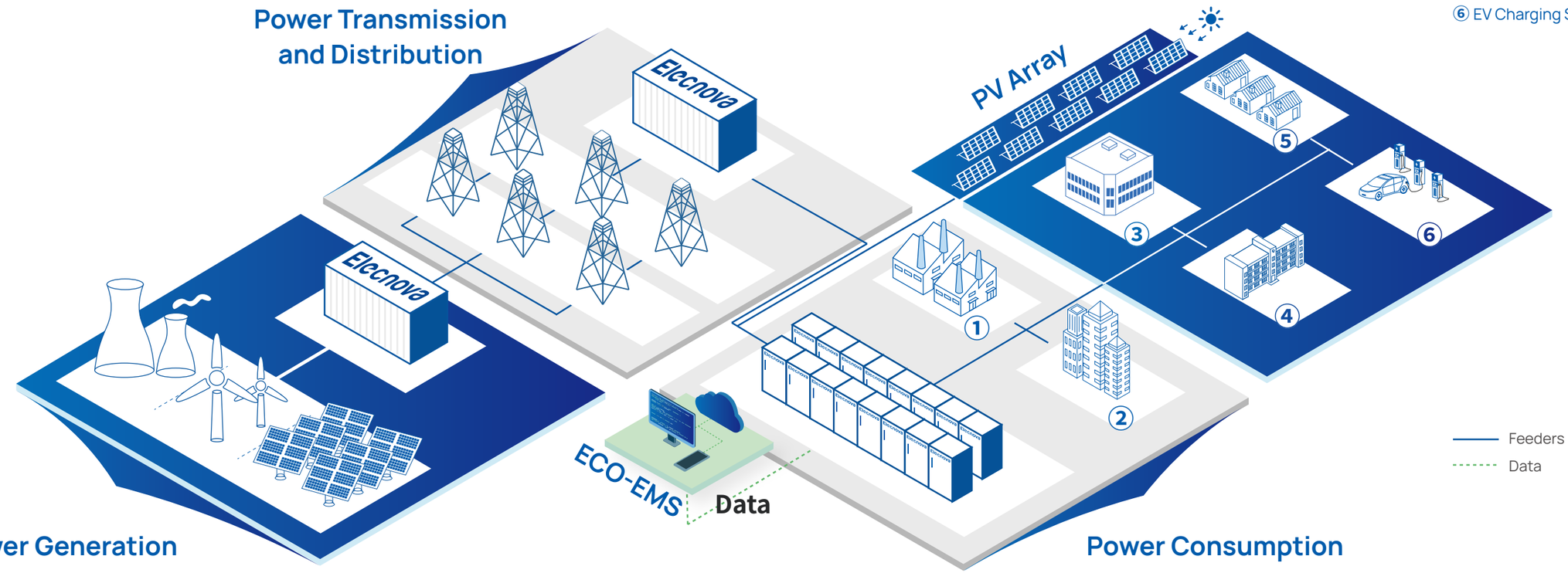
② Commercial Buildings

③ Data Centres

④ Utility Facilities

⑤ Dwellings

⑥ EV Charging Stations



Energy Arbitrage

Power Quality Optimisation

Power Market Ancillary Services

Backup Power Supply

Microgrid

VPP

All-in-one Air-cooled ESS Cabinet

ECO-E215WS

Brief

The all-in-one air-cooled ESS cabinet integrates long-life battery, efficient balancing BMS, high-performance PCS, active safety system, smart distribution and HVAC into one cabinet, enabling long-term operation with safety, stability and reliability. Through AC side parallel connection, it achieves agile deployment of ESS power station with flexible capacity expansion.

Features

Economical and Efficient
Conversion efficiency over 90%,
DoD over 95%.

Safe & Reliable
IP55 protection level, optimized ventilation design, cells temperature difference ≤6°C.

Compact
1.6m² footprint only,
easy transportation & fast installation.

Self-developed
Self-developed PACK, PCS, BMS and EMS with good product compatibility.

Flexible Expansion
Modular design, simplified parallel expansion, fast expansion.

Smart O&M
Diversified O&M access, both on APP & Cloud.

Specifications

DC Side	
Cell Type	LFP 280Ah
PACK	17.92kWh/1P20S
Battery System	215kWh/1P240S
Voltage Range	672~864Vdc
Rated Voltage	768Vdc
AC Side	
Rated Power	100kW
Max. Power	110kW
THDi	≤3%
DC Ratio	＜0.5%Ipn
Nominal Voltage	400Vac/3P+N+PE
Power Factor	-1 lagging~1 leading
Nominal Frequency	50Hz/60Hz
General	
Efficiency	≥90%
Charge/Discharge Rate	0.5P
DoD	95% (25±2°C)
Cycle Life	≥8,000 times
Switching Time	＜100ms
Connectivity	Ethernet /RS485
Ingress Rating	IP55
Cooling	Forced air cooling
Operating Temperature	-25°C~55°C
Humidity	0-95%RH, non-condensing
Noise	80dB
Altitude	≤2,000m (derating above 2,000m)
Fire Safety	Aerosol
Dimensions (W*D*H)	1,250*1,300*2,400 (mm)
Weight	2,630kg
Compliance	UN38.3, IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, EN50549

All-in-one Liquid-cooled ESS Cabinet

ECO-E233LS

Brief

The all-in-one liquid-cooled ESS cabinet adopts advanced cabinet-level liquid cooling and temperature balancing strategy. The cell temperature difference is less than 3°C, which further improves the consistency of cell temperature and extends the battery life. The modular design makes the parallel solution more flexible and has higher energy density, which significantly improves the economy, safety and construction convenience of ESS projects.

Features

Compact
1.4m² footprint only, easy transportation & fast installation.

High Integration
233kWh energy in one cabinet with remarkable endurance.

Efficient Cooling
Optimal in-PACK duct design,
achieve high-efficient cooling and low energy consumption.

Long Cycle Life
Over 8,000 times cycle life, excellent performance of battery system.

Flexible Expansion
Modular design,
simplified parallel expansion.

Ultimate Safety
In-PACK fire warning and protection with NOVEC1230/aerosol, prevent heat diffusion and runaway.

Specifications

DC Side	
Cell Type	LFP280Ah
PACK	46.592kWh/1P52S
Battery System	232.96kWh/1P260S
Voltage Range	728~936Vdc
PACK Ingress Rating	IP65

AC Side	
Rated Power	100kW
Max. Power	110kW
THDi	≤3%
DC Ratio	＜0.5%Ipn
Nominal Voltage	400Vac/3P+N+PE
Power Factor	-1 lagging~1 leading
Nominal Frequency	50Hz/60Hz

General	
System Efficiency	≥90%
Charge/Discharge Rate	0.5P
DoD	95%（25±2°C）
SOC Accuracy	＜3%
Cycle Life	≥8,000 times
Switching Time	＜100ms
Connectivity	Ethernet /RS485
Ingress Rating	IP55
Cooling	Active liquid cooling
Operating Temperature	-25°C~55°C
Humidity	5~95%RH, non-condensing
Noise	≤75dB
Altitude	≤2,000m (derating above 2,000m)
Fire Safety	Aerosol
Dimensions (W*D*H)	1,050*1,350*2,400 (mm)
Weight	2570kg
Compliance	UN38.3, IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, EN50549

All-in-one Air-cooled ESS Cabinet

ECO-E101WX

Brief

The all-in-one air-cooled ESS cabinet integrates long-life battery, efficient balancing BMS, high-performance PCS, active safety system, smart distribution and HVAC into one cabinet, enabling long-term operation with safety, stability and reliability. Through AC side parallel connection, it achieves agile deployment of ESS power station with flexible capacity expansion.

Features

Fast response
1P fast charge/discharge rate.

Energy Saving
Achieve utilization of new energy via energy storing & releasing of renewables.

Economical & Efficient
Conversion efficiency over 90%, DoD over 95%.

Smart O&M
Diversified access of monitoring by HMI (local), APP/web (remote).

Self-developed
Self-developed PACK, PCS, BMS and EMS with good compatibility.

Safe & Reliable
IP55, fully tested and optimized thermal management, cell difference ≤6°C.

Specifications

DC Side	
Cell Type	LFP 120Ah
Battery System	1P264S
Rated Energy	101kWh
Rated Voltage	844.8V
Voltage Range	739.2V~950.4V

AC Side	
Rated Power	100kW
Max. Power	110kW
Nominal Voltage	400Vac/3P+N+PE
Nominal Frequency	50Hz/60Hz
THDi	≤3%
DC Ratio	＜0.5%Ipn
Power Factor	-1 lagging～1 leading

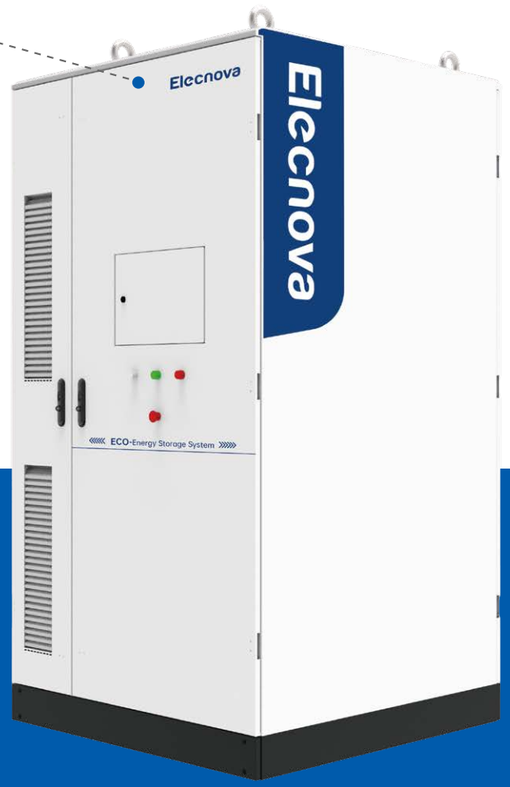
General	
Efficiency	≥89%
Charge/Discharge Rate	1P
DoD	95% (25±2°C)
Cycle Life	≥5500 cycles
Ingress Rating	IP55
Cooling	Forced air cooling
Operating Temperature	-25°C～55°C
Humidity	0～95%RH, non-condensing
Altitude	≤2,000m (derating above 2,000m)
Dimensions (W*D*H)	1,250*1,200*2,150 (mm)
Weight	2,000kg
Fire Safety	Aerosol
Connectivity	Ethernet /RS485
Compliance	UN38.3, IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, EN50549

Liquid-cooled Battery Cabinet

ECO-B372LS

Brief

The liquid-cooled battery cabinet adopts advanced cabinet-level liquid cooling and temperature balancing strategy. The cell temperature difference is less than 3°C, which further improves the consistency of cell temperature and extends the battery life. The modular design makes the parallel solution more flexible and can be combined with the centralized PCS to form an ESS with higher energy density, which significantly improves the economy, safety and construction convenience of ESS projects.



Features

Compact
1.7㎡ footprint only, easy transportation & fast installation.

High Integration
Multiple units connected in parallel achieve MV/HV connection with PCS-boost containers.

Efficient Cooling
Optimal in-PACK duct design, achieve high-efficient cooling and low energy consumption

Long Cycle Life
Over 8,000 times cycle life, excellent performance of battery system.

Flexible Expansion
Support seamless cabinets combination and flexible grid access

Ultimate Safety
In-PACK fire warning and protection with NOVEC1230/aerosol, prevent heat diffusion and runaway.

Specifications

Specification	
Cell Type	LFP280Ah
DoD	95%(25±2°C)
Configuration	1P416S
Rated Energy	372kWh
Rated Voltage	1331.2Vdc
DC Voltage Range	1165~1498Vdc
PACK Ingress Rating	IP65
Rated Charge/Discharge Rate	0.5C
Cycle Life	≥8000 times
Operating Temperature	-25°C~55°C
Fire Safety	Aerosol
Ingress Rating	IP55
Cooling	Liquid cooling
Altitude	≤2,000m (derating above 2,000m)
Dimensions (W*D*H)	1,300*1,300*2,400 (mm)
Weight	3,660kg
Compliance	UN38.3, IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, EN50549

All-in-one Air-cooled Hybrid Solar ESS Cabinet

ECO-E64WX

Brief

ECO-E64WX is a small capacity PV-plus ESS solution provided by Elecnova through its long-term accumulation in the field of ESS integration and digital monitoring technology. Adopting the all-in-one design concept, this PV-plus ESS cabinet highly integrates equipment such as lithium battery ESS, hybrid inverter, HVAC, FSS, BCQ, etc. The product has a more compact structure, easy installation, and flexible capacity expansion, supporting multiple operating modes such as self use, peak shaving, and backup power.

Features

Economical and Efficient
RTE over 87%, DOD over 95%.

Versatile
Support multiple brands of hybrid inverter, with higher selectivity.

Safe & Reliable
IP55, optimized ventilation design, temperature difference within 6℃.

PV pluggable
Support PV connection, with higher integration.

Compact & Convenient
0.96 ㎡ footprint, easy to transport and install.

Self-developed
PACK, BMS and EMS are all independently developed with good compatibility.

Expandable & Modular
Easy modular design supports parallel connection for convenient system expansion.

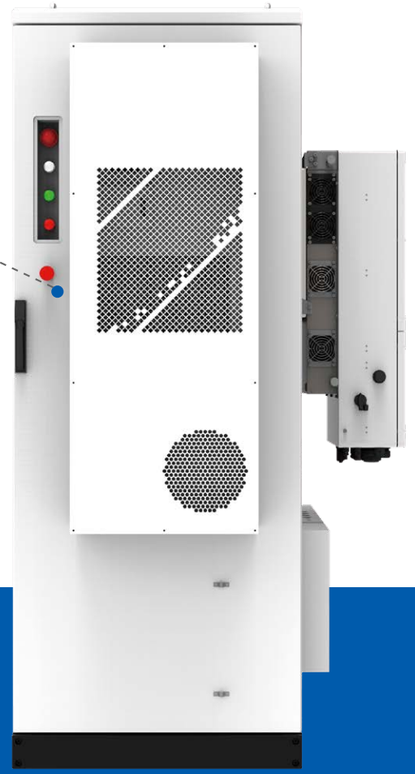
Easy O&M
Support multiple ways of operation and maintenance, including onsite, cloud.

Specifications

Battery Input					
Cell Type	LFP 120Ah				
Battery System	1P168S				
Rated Energy	64.512kWh				
Rated Voltage	537.6V				
Voltage Range	470.4V~604.8V				
PV Input					
Recommended input power Max.	37.5kW	45kW	54kW	60kW	75kW
PV Voltage	200V~850V				
MPPT	4				
MAX. Input Current	30A*4				
AC Output					
Rated Power	25kW	30kW	36kW	40kW	50kW
Max. Power	27.5kVA	33kVA	39.6kVA	44kVA	55kVA
Nominal Voltage	400Vac/3P+N+PE				
Nominal Frequency	50Hz/60Hz				
THDi	＜3%				
DC Ratio	＜0.5%Ipn				
Power Factor	0.8 leading~0.8 lagging				
General					
Efficiency	≥87%				
Charge/Discharge Rate	0.8P Max.				
DoD	95%(25±2℃)				
Cycle Life	≥5500 Cycles				
Ingress Rating	IP55				
Cooling	Force air colling				
Operating Temperature	-25~55℃				
Humidity	0~95%RH，non-condensing				
Altitude	≤2000m(derating above 2,000m)				
Dimensions（W*D*H）	800*1200*2030mm				
Weight	1 t				
Fire Safety	Aerosol				
Connective	Ethernet/RS485				
Compliance	UN38.3, IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, EN50549				
Grid Connection Certifications	G99, VDE-AR-N 4105 / VDE V 0124, EN 50549-1 / EN 50549-10, VDE 0126 / UTE C 15 / VFR:2019, NTS 631 / RD 1699 / RD 244 / UNE 206006 / UNE 206007-1, CEI 0-21, C10/11, NRS 097-2-1, TOR, EIFS 2018.2,IEC 62116, IEC 61727 , IEC 60068 , IEC 61683, EN 50530, MEA, PEA, PORTARIA Nº 140, DE 21 DE MARÇO DE 2022				

All-in-one Air-cooled Hybrid Solar ESS Cabinet

ECO-E107WS



Brief

ECO-E107WS is a professional PV-plus ESS solution provided by Elecnova through its long-term accumulation in the field of ESS integration and digital monitoring technology. Adopting the all-in-one design concept, this PV-plus ESS cabinet highly integrates equipment such as lithium battery ESS, hybrid inverter, HVAC, FSS, BCQ, etc. The product has a compact structure, easy installation, and flexible capacity expansion, supporting multiple operating modes such as self use, peak shaving, and backup power.

Features

Economical and Efficient
RTE over 90%, DOD over 95%.

Versatile
Support multiple brands of hybrid inverter, with higher selectivity.

Safe & Reliable
IP55, optimized ventilation design, temperature difference within 6℃.

PV pluggable
Support PV connection, with higher integration.

Compact & Convenient
0.96㎡ footprint, easy to transport and install.

Self-developed
LFP280Ah battery cell system integration, leading cost advantage, 3S fusion.

Expandable & Modular
Easy modular design supports parallel connection for convenient system expansion.

Easy O&M
Support multiple ways of operation and maintenance, including onsite, cloud.

Specifications

Battery Input			
Cell Type	LFP 280Ah		
Battery System	1P120S		
Rated Energy	107.52kWh		
Rated Voltage	384V		
Voltage Range	336~432V		
PV Input			
Recommended input power Max.	60kW	80kW	100kW
PV Voltage	150V~850V	150V~850V	150V~850V
MPPT	3	4	4
MAX. Input Current	40A*3	40A*4	40A*4
AC Output			
Rated Power	30kW	40kW	50kW
Max. Power	30kVA	40kVA	50kVA
Nominal Voltage	400Vac/3P+N+PE		
Nominal Frequency	50Hz/60Hz		
THDi	＜3%		
DC Ratio	＜0.5%Ipn		
Power Factor	0.8 leading~0.8 lagging		

General	
Efficiency	90%
Charge/Discharge Rate	0.5P Max.
DoD	95%(25±2℃)
Cycle Life	≥8000 Cycles
Ingress Rating	IP55
Cooling	Force air colling
Operating Temperature	-25~55℃
Humidity	0~95%RH，non-condensing
Altitude	≤2000m(derating above 2,000m)
Dimensions（W*D*H）	800*1200*2100mm
Weight	1.2 t
Fire Safety	Aerosol
Connective	Ethernet/RS485
Compliance	UN38.3, IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, EN50549
Grid Connection Certifications	G99, VDE-AR-N 4105 / VDE V 0124, EN 50549-1 / EN 50549-10, VDE 0126 / UTE C 15 / VFR:2019, NTS 631 / RD 1699 / RD 244 / UNE 206006 / UNE 206007-1, CEI 0-21, C10/11, NRS 097-2-1, TOR, EIFS 2018.2,IEC 62116, IEC 61727 , IEC 60068 , IEC 61683, EN 50530, MEA, PEA, PORTARIA Nº 140, DE 21 DE MARÇO DE 2022

Liquid-cooled Battery Container

ECO-B20FT4472LS

Brief

The 20-ft liquid-cooled ESS container product integrates PACK, EMS, BMS, HVAC, fire safety system into one container. Compared with the air cooling, the liquid cooling empowers the ESS product with higher power density and ensures the cell temperature difference less than 3°C, which effectively extends battery service life and improves energy efficiency. The 20-ft liquid-cooled ESS container product can be applied to power generation side, grid side, as well as C&I ESS scenarios which has strict requirements on power and capacity.

Features

Higher Energy Density
The 20-foot liquid-cooled energy storage container has a maximum capacity of 4.472MWh, providing higher energy density, and saving costs.

Lower Local Power Consumption
The variable-frequency compressor adjusts its operating status based on temperature conditions, thus reducing the equipment's power consumption.

Lower Operating Noise
The product significantly reduces the use of fans, resulting in lower noise compared to air-cooled products.

Longer Service Life
The cell temperature consistency extends the battery service life by 5% and enhances the safety of batteries, and increases returns.

Better Temperature Control
In comparison to air cooling, the liquid cooling scheme keeps cell temperature difference less than 3°C, which improves cell voltage consistency.

Higher Protection
The product utilizes the IP55 (PACK IP65) high protection level & C4 protection level and the high/low-temperature design.

Specifications

Item	Specification
Cell type	LFP280Ah
Configuration	12P416S
Rated Energy	4.472MWh
Rated Voltage	1331.2Vdc
Voltage Range	1165-1498Vdc
PACK Ingress Rating	IP65
Rated Charge/Discharge Rate	0.5P
Operating Temperature	-25°C~55°C
Fire Safety	Aerosol+water
Ingress Rating	IP55
Cooling	Chiller+liquid cooling
Altitude	≤2,000m (derating above 2,000m)
Dimensions (W*D*H)	6,058 mm x 2,550mm x 2,896 mm
Weight	42 t
Compliance	Pack: UN38.3, IEC62477, IEC61000, IEC62619, IEC63056 System: IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, UN3536, EN50549

Liquid-cooled Battery Container

ECO-B20FT5015LP

Brief

The 20-ft liquid-cooled ESS container product integrates PACK, EMS, BMS, HVAC, fire safety system into one container. Compared with the air cooling, the liquid cooling empowers the ESS product with higher power density and ensures the cell temperature difference less than 3°C, which effectively extends battery service life and improves energy efficiency. The 20-ft liquid-cooled ESS container product can be applied to power generation side, grid side, as well as C&I ESS scenarios which has strict requirements on power and capacity.

Features

Higher Energy Density
The 20-foot liquid-cooled energy storage container has a maximum capacity of 5.015MWh, providing higher energy density, and saving costs.

Lower Local Power Consumption
The variable-frequency compressor adjusts its operating status based on temperature conditions, thus reducing the equipment's power consumption.

Lower Operating Noise
The product significantly reduces the use of fans, resulting in lower noise compared to air-cooled products.

Longer Service Life
The cell temperature consistency extends the battery service life by 5% and enhances the safety of batteries, and increases returns.

Better Temperature Control
In comparison to air cooling, the liquid cooling scheme keeps cell temperature difference less than 3°C, which improves cell voltage consistency.

Higher Protection
The product utilizes the IP55 (PACK IP65) high protection level & C4 protection level and the high/low-temperature design.

Specifications

Item	Specification
Cell type	LFP314Ah
Configuration	12P416S
Rated Energy	5.015MWh
Rated Voltage	1331.2Vdc
Voltage Range	1165-1498Vdc
PACK Ingress Rating	IP65
Rated Charge/Discharge Rate	0.5P
Operating Temperature	-25℃~55℃
Fire Safety	Aerosol+water
Ingress Rating	IP55
Cooling	Chiller+liquid cooling
Altitude	≤2,000m (derating above 2,000m)
Dimensions (W*D*H)	6,058 mm x 2,550mm x 2,896 mm
Weight	45 t
Compliance	Pack: UN38.3, IEC62477, IEC61000, IEC62619, IEC63056 System: IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, UN3536, EN50549

Air-cooled Battery Container

ECO-B20FT3404WS

Brief

The 20-ft air-cooled ESS container product integrates PACK, EMS, BMS, HVAC, fire safety system into one container. It has the advantages of high energy density, easy transportation & installation, and high protection level. The DC output can combine with PCS-boost container to realize AC network connection at medium/high voltage . It can be applied to the generation side, grid side, and ESS applications with high power/capacity requirements.

Features

Safe & Reliable
High-end and ESS-specific LFP cells to achieve high energy density, long cycle life and non-spontaneous combustion.

Economical & Efficient
Low system cost, high charge/discharge efficiency, support various ESS applications

Smart Cooling
Smart cooling ensures temperature difference not over 8°C.

Smart O&M
Triple-level BMS achieves real-time monitoring and control of core from battery, PCS, HVAC, fire safety etc,. EMS achieves remote monitoring and control to reduce cost and improve maintainability.

String Design
Cooperate with modular PCS to eliminate battery system inconsistency caused by parallel connection of cells

Precise Temp Control
One-cluster-one-air-conditioning achieves accurate temp control for battery consistency and modular temp strategy.

Specifications

Item	Specification
Cell type	LFP280Ah
Configuration	10P380S
Rated Energy	3.404MWh
Rated Voltage	1216Vdc
Voltage Range	1064~1368Vdc
Nominal Charge/Discharge Rate	0.5P
Operating Temperature	-25℃~55℃
Fire Safety	Aerosol+water
Ingress Rating	IP55
Cooling	Forced air cooling
Altitude	≤2,000m (derating above 2,000m)
Dimensions (W*D*H)	6,058 mm x 2,438mm x 3,100mm
Weight	35 t
Compliance	Pack: UN38.3, IEC62477, IEC61000, IEC62619, IEC63056 System: IEC62477, IEC61000, IEC62619, IEC63056, UL9540A, UN3536, EN50549

PCS-Boost Container

ECO-H3200K

Brief

In order to meet the modular, integrated and convenient design needs of large-scale ESS stations, the all-in-one PCS-Boost container prefabricates the PCS, boost transformer, HV & LV power distribution unit, communication unit, etc. in one container, to achieve the fast construction of ESS stations. It has a virtual synchronization function and assures quality and stability for regional power distribution.

Features

Fast Delivery
Prefabrication & all-in-one design, high system integration, easy transportation and installation.

Ultra Bearing
Wide DC voltage range, Full load capacity at DC1500V.

Multi-level Protection
Supports charge/discharge management, and cooperates with EMS, BMS and other systems to achieve multi-level protection.

Swift Scheduling
Excellent functions such as fast power scheduling, off-grid operation and black start to improve energy efficiency.

Ultimate Safety
Whole-unit intelligent forced air cooling & high protection, adaptable to various harsh environments.

On-demand Customization
On-demand customization according to power and structural requirements to meet customized needs.

Specifications

Model	Item	ECO-H3200K-G6-35
DC side	Max. Voltage	1500Vdc
	Max. Power	200kW*16
	Max. Current	200A*16
	Voltage Range	1000-1500Vdc
AC Side	Rated Power	3200kW
	Max. Power	3520kW
	Nominal Voltage	6-35kV optional
	Rated Frequency	50Hz/60Hz
	THD	‹1.5% @rated power
	Power Factor	-1 lagging~1 leading
General	Isolation	dry/oil transformer
	Max. Efficiency	98%
	Ingress Rating	IP54
	Operating Temperature	-40℃~60℃
	Altitude	4000m(derating above 4000m)）
	Cooling	Smart air cooling
	Connectivity	RS485/CAN/Ethernet
	Dimensions (W*D*H)	6058*2438*2591mm

Air-Cooled PACK

ECO-P1P20WS

Brief

The air-cooled PACK consists of LFP cells, grouping in 1P20S. With built-in BMU, HV connectors, fans, and fixed structural components, these accessories enable the PACK module to have protection functions such as overvoltage, undervoltage, overcurrent, insulation, short circuit, and overheat. Combined with PCS, it achieves energy charge and discharge. This PACK is compatible with 1500V platform.

Features

Excellent Performance
Laser welding for excellent cells consistency and superior charging/discharging performance.

Long Cycle Life
Over 8,000 times cycle life and a designed lifespan up to 10 years.

Safe and Reliable
Optimized ventilation system, active thermal management system.

Flexible Configuration
Standard & modular design, on-demand flexible expansion.

Specifications

ECO-P1P20WS	
Cell Type	LFP
Rated Capacity	280Ah
Grouping	1P20S
Rated Energy	17.92kWh (rated conditions)
Rated Voltage	64Vdc
Recommended Operating Voltage	56-72Vdc
Rated Charge/Discharge Rate	0.5C
Cooling	Air cooling
Cycle Life	≥8,000 times
Storage Environment	0~35℃, RH<75%(non-condensing)
Operating Temperature	-20℃~50℃ (discharging)/0~55℃ (charging)
Ingress Rating	IP20
Dimensions (W*D*H)	470*950*230mm
Weight	143kg
Compliance	UN38.3, IEC62619, IEC63056

Liquid-Cooled PACK

ECO-P1P52LS

Brief

The liquid-cooled PACK consists of LFP cells, grouping in 1P52S. With built-in BMU, HV connectors, liquid cooling module, fixed structural components , these accessories enable the PACK module to have protection functions such as overvoltage, undervoltage, overcurrent, insulation, short circuit, and overheat. Working together with PCS, it enables charge/discharge operation.

Features

Excellent Performance
Laser welding for excellent cells consistency and superior charging/discharging performance.

High Integration
High energy density, built-in BMU monitoring the cell status in real-time

Safe and reliable
The cells temperature difference less than 3°C.

Flexible Configuration
Standard & modular design, on-demand flexible expansion.

Long Cycle Life
Over 8,000 times cycle life and a designed lifespan up to 10 years.

Advanced Protection
IP65 protection level, meeting various scenarios.

Specifications

ECO-P1P52LSP	
Cell Type	LFP
Rated Capacity	280Ah
Grouping	1P52S
Rated Energy	46.592kWh (rated conditions)
Rated Voltage	166.4Vdc
Recommended Operating Voltage	145.6-187.2Vdc
Rated Charge/Discharge Rate	0.5C
Cooling	Liquid cooling
Cycle Life	≥8,000 times
Storage Environment	0~35℃， RH＜75%(non-condensing)
Operating Temperature	-20℃~50℃(discharging)/0~55℃(charging)
Ingress Rating	IP65
Dimensions (W*D*H)	812*1132*238mm
Weight	342kg
Compliance	UN38.3, IEC62619, IEC63056

Battery Management System (ECO-BMS)

Brief

BMS supports two architectures: three-level architecture (BMU+BCU+BAU) and two-level architecture (BMU+BCU). BMU, BCU and BAU respectively offer PACK-level, cluster-level and array-level protection against overcharging, over-discharging, overcurrent, overheat and short circuit for battery clusters. Real-time monitoring of battery safety status, fault diagnosis, and warnings are provided. The main control unit within the cluster can accurately estimate SOC/SOH (State of Charge/State of Health) and offers insulation detection function with precision requirements exceeding national standards, ensuring efficient, reliable and safe operation of the energy storage system.

Features

Complete Architecture
Compatible with two-/three-level architectures, support distributed and centralized scenarios.

High-Precision Insulation Estimation
Flexible insulation diagnosis solution, compatible with two-/three-level architectures with high accuracy.

Multiple Interfaces
Multiple types of DI/DO interfaces, adaptive to status input and control of various equipment.

Various Applications
Supports air-/liquid-cooled scenarios.

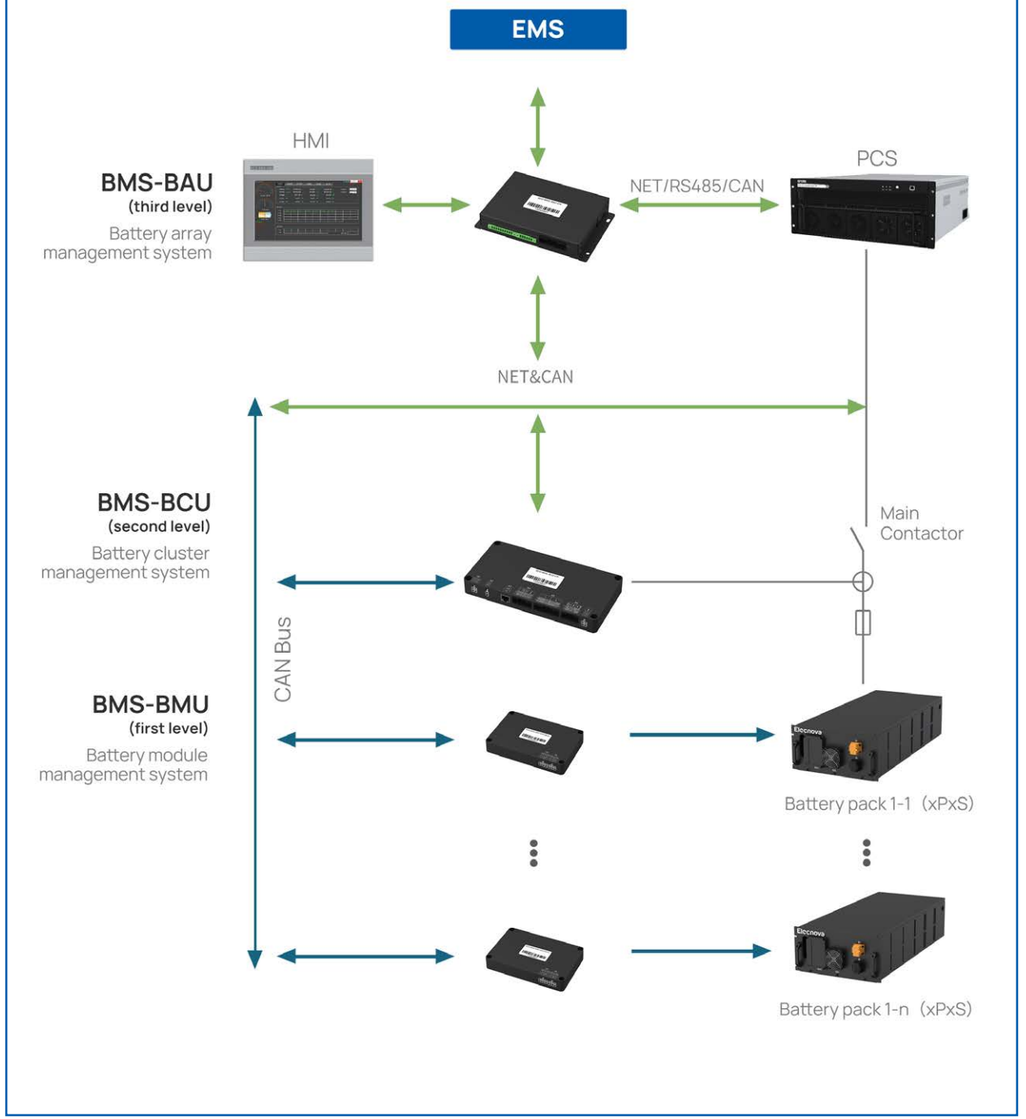
Protocol Compatible
Support multiple PCS protocols.

SOC Estimation Accuracy
Error < 5%

Ultra-Low Consumption
Flexible power supply and hibernation function.

Real-Time Response
100ms sampling interval to ensure timeliness of data.

Typical Architecture



Specifications (Battery Module Unit BMU)

BMU-S24PB-A

BMU-S64PB-A

Functions

- Acquisition of cell voltage
- Acquisition of cell temperature
- Passive balancing execution
- Liquid leakage monitoring
- Module fan feedback
- Module fan control

Specifications		Min.	Typical	Max.		Unit
				BMU-S24PB-A	BMU-S64PB-A	
Auxiliary Power Supply	Voltage	9	12, 24	32		V
Operating Environment	Temperature	-25	—	65		℃
	Humidity	5	—	95		%
Cell Voltage	Voltage Range	0	—	5		V
	Sampling channel	—	—	24	64	mV
	Insulation Resistance	—	100	—		MΩ
Voltage Resistance Insulation	Rated Operating Voltage			1500		V
	Voltage Resistance	50Hz 3,000VAC applied between voltage sampling terminal and housing and digital interface terminal for 1 minute without breakdown or flashover				
Temperature Sampling	Temperature Range	-40	—	125		℃
	Sampling Points	—	—	24	64	—
	Sampling Accuracy	—	1	—		℃
Passive Balancing	Current	—	—	100mA		mA
DI/DO	DI	—	—	2		Channel
	DO	—	—	1		Channel
Signal Wiring	Wiring	—	—	Side connection		—

Specifications (Battery Cluster Unit BCU)

Functions

- Total voltage acquisition, main circuit current, insulation resistance and temperature detection
- Control of main circuit contactor and pre-charge relay, as well as status detection of relay
- Communication with sub-control unit for information acquisition of sub-control individual voltage and temperature
- Communication with master control unit to upload battery system information
- Communication with display screen (only for two-level architecture), PCS and EMS to display battery system information
- Passive balancing control algorithm, single cluster SOC/SOH calculation
- Sub-control address allocation control, sub-control fan control, system alarm and protection operations
- System battery data storage
- Multiple digital input/output channels (active/passive)

Main Technical Parameters		Min.	Typical	Max.	Unit
Auxiliary Power Supply	Voltage	9	12, 24	32	V
Operating Environment	Temperature	-25	—	65	℃
	Humidity	5	—	95	%
Total Voltage Sampling	Voltage Range	100	—	1500	V
	Sampling Accuracy		±0.5		%
Shunt Current Sampling	Current Range	-500	—	500	A
Hall Current Sampling	Sensor Power Supply Voltage		5		V
	Current Range	—	80	—	mA
Insulation Resistance	Detection Range	0	—	10	MΩ
Voltage Resistance Insulation	Rated Operating Voltage		1500		V
	Voltage Resistance	50Hz/3,000VAC applied between voltage sampling terminal and housing and digital interface terminal for 1 minute without breakdown or flashover			
AI	Voltage Range	0	—	3.3	V
	Temperature Sampling Accuracy		±1		℃
DI/DO	DI		3		Channel
	DO		8		Channel
SOC	Calculation Error		5		%
CAN			3		Channel
RS485			3		Channel
Ethernet			1		Channel

Specifications (Battery Array Unit BAU)

Product Functions

- Three-level architecture system management
- Communication with the main control unit to summarize information from the multi-cluster battery system
- Communication with the display screen, PCS and EMS to display all battery system information
- System alarms and protection operations
- Multiple digital input/output channels (active/passive)

Main Technical Parameters		Min.	Typical	Max.	Unit
Auxiliary Power Supply	Voltage	9	12, 24	32	V
Operating Environment Quantity	Temperature	-25	—	65	℃
	Relative Humidity	5	—	95	%
DI	High-level	4 high-level effective inputs			—
	Low-level	4 low-level effective inputs			—
Passive Dry Contact	Normally Open	12			Channel
	Normally Closed	2			Channel
CAN		3			Channel
RS485		5			Channel
Ethernet		1			Channel

Specifications (Human-machine Interface BMS-HMI)

Product Model	ECO-BMS-HMI-7	ECO-BMS-HMI-10
LCD Screen	7" TFT	10" TFT
Resolution	800×480	1024×600
Memory	128M	128M
Interface	2 channels serial interface, 2 channels USB Interface	2 channels serial interface, 2 channels USB interface, 1 channel Ethernet interface
Power Supply	24±20%Vdc	24±20%Vdc
Overall Dimensions	226mm×163mm	271mm×213mm
Hole Dimensions	215mm×152mm	260mm×202mm

Power Conversion System (ECO-PCS)

Brief

This product is a modular inverter specifically designed for small-scale ESS. It achieves bidirectional energy conversion in ESS and meets the requirements of various scenarios such as C&I ESS, microgrid energy storage, PV-plus ESS.

Features

Ultra-High Efficiency
GEN7 IGBT, three-level topology and minimal switch loss modulation method, conversion efficiency reaches up to 99%.

Flexible Configuration
Modular design enables parallel expansion, can directly connect to LV distribution.

Reliable
IP65 protection level, ms-level on-/off-grid switching.

Versatile Applications
Extra-wide DC voltage input range, suitable for various battery types and scenarios.

Unique Design
Adapt to single-/three-phase loads, active/reactive power control capabilities

Excellent load-bearing
100% three-phase unbalanced loads, strong resistance to load fluctuations.

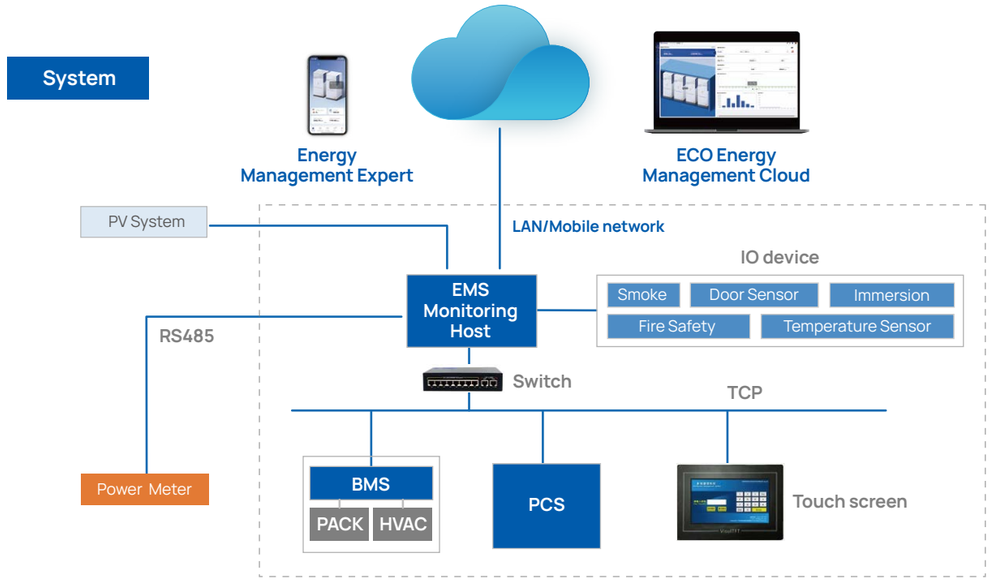
Specifications

DC Side	ECO-PCS-100/0.4-S	ECO-PCS-100/0.4-T
Voltage Range	615~950Vdc	615~950Vdc
Max. Current	165A	165A
Max. Voltage	1000Vdc	1000Vdc
Max. Power	110kW	110kW
AC Side		
Rated Power	100kW	100kW
Max. Power	110kW	110kW
THDi	＜3%	＜3%
Wiring	3P3W	3P4W
Nominal Voltage	400Vac	400Vac
Power Factor	＞0.99	＞0.99
Power Factor Range	-1 lagging~1 leading	-1 lagging~1 leading
Nominal Frequency	50Hz/60Hz	50Hz/60Hz
General		
System Efficiency	≥98.5%	≥98.5%
Switching Time	≤52ms	≤52ms
Connectivity	RS485/CAN	RS485/CAN
Ingress Rating	IP20	IP20
Cooling	Forced air cooling	Forced air cooling
Operating Temperature	-30~55℃	-30~55℃
Humidity	5~95%RH(non-condensing)	5~95%RH(non-condensing)
Dimensions (W*H*D)	484*703*256(front/back connection) 544*717*271.5(circular connector)	
Weight	47kg	47kg

Energy Storage Management System (ECO-EMS)

Brief

The ECO-EMS series products are integrated EMS designed for ESS scenarios, enabling real-time monitoring to meet the requirements of comprehensive operation monitoring, ensuring the safe, reliable, and cost-effective operation of ESS. Adopting an integrated architecture design, the system is suitable for user-side ESS, microgrid and PV-plus ESS and more. It ensures that the system operates optimally at all times, maximizing overall benefits and shortening ROI.



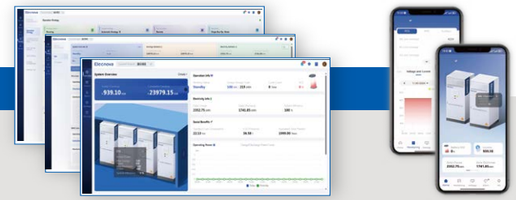
Features

Smart O&M
Support 4G network access to achieve intelligent O&M both on site and cloud.

Stable and Reliable
Bus monitoring and bus wake-up, support the parallel operation of up to 10 integrated units, auto-networking, mutual backup operation between APP and nodes.

Diverse Integration
Support real-time power control, load tracking, demand management, and charge/discharge planning strategies, integrate with distributed power generation equipment, support coordination control of PV-ESS, and distributed consumption and other operation modes.

Self-adaptive Operation
Flexible arrangement of single-/dual-bus during parallel operation, identify the bus operation mode to achieve adaptive operation of multiple units, ensuring the safety of line operation.



Functions

System Monitoring
Real-time monitoring of the operating status of PCS, BMS, air conditioning, access control, fire protection equipment, smoke sensors, immersion sensors, temperature and humidity sensors, and other devices.

Peak Shaving
Adapt charge and discharge strategies to achieve energy arbitrage.

Time Shifting
Intelligent prediction of new energy generation, maximizing the self-consumption utilisation of PV and reducing customer electricity costs.

SOH Analysis
Collect data such as cell voltage, total current, SOC, and accurately assesses the battery's health status based on cloud.

Intelligent Alarms
Various notification methods, help customers quickly address operational abnormalities and ensure reliable system operation.

Demand Management
Smooth the electricity load through charge and discharge strategies, reduce peak power & maximum demand, and lower the customer's electricity cost.

Remote O&M
Remote fault diagnosis and maintenance, reducing equipment downtime and safety risks, improving operation efficiency, and reducing maintenance costs, ensuring system stability.

PV-ESS Coordination
Accurately predict electricity loads and intelligently control the output of PV generation and ESS, improving power supply reliability.

Build Elecnova
as a Top Expert In Energy Storage Solutions.