Commercial & Industrial

Energy Storage Solutions

FOR EU MARKET

Renon Power Technology B.V.

2025-7-18

RENON
RENON POWER

Renon Power

We Care About Sustainability

With our own R&D team and automatic production factory, we are dedicated to delivering innovative, reliable, and affordable energy storage solutions to global customers.

At Renon, we believe that sustainable energy is the future. We are passionate about reducing carbon emissions and preserving our planet for future generations. That's why we invest heavily in research and development, leveraging the latest technologies to design and manufacture energy storage systems that are efficient, scalable, and adaptable.

Our products are designed to meet the needs of a wide range of applications, from residential and commercial buildings to industrial facilities and utility-scale projects. Whether you're looking to reduce your energy bills, increase your energy independence, or support your sustainability goals, Renon has the right solution for you.

Our commitment to quality and customer satisfaction is unwavering. We work closely with our clients to understand their unique needs and provide customized solutions that meet or exceed their expectations. We also provide comprehensive technical support, maintenance, and warranty services to ensure that our customers get the most out of their investment.

JOIN US ON OUR MISSION TO MAKE RENEWABLE ENERGY WITHIN REACH.

PROVIDE INNOVATIVE, RELIABLE, AND AFFORDABLE ENERGY STORAGE SOLUTIONS TO CUSTOMERS WORLDWIDE.

Content

Meeting the highest standards of quality and safety in the global market.

Industry Application

Renon's energy storage products are extensively applied across residential, commercial, and industrial sectors. With exceptional performance, cutting-edge technology, and efficient energy management, they provide reliable, innovative, and eco-friendly energy solutions, helping global users achieve their sustainability goals.

Industrial
Manufacturing

Commercial
Retail

Commercial
Office Space

Commercial
Agriculture

Commercial
Data Centers

Commercial
Utilities

Industrial
Electricity Generating

Commercial
Community

Public Safety Sector
Substations

As a company that values renewable energy, we are passionate about developing solutions that contribute to a greener, more sustainable future. Our products are designed to reduce carbon emissions and promote environmental conservation.

Products

Our integrated C&I solutions offer autonomous energy storage and management for commerce and industry.

Commercial & Industrial BESS

P03
ECube 60AP

P07
MPack 233A

AC Combiner System

P11
MCombiner

P13
MCombiner Pro

P15
MCombiner PV

Cabinet Fast DC Charging System

P17
MPack 233C

Distribution Container System

P23
Smart Matrix A

Portable BESS

P27
XGen

ECube 60AP

60kWh Air-Cooling Battery

The ultimate commercial and industrial energy storage solution with optimized temperature control, high-rate energy cycling, comprehensive fire and gas safety detection, and advanced integrated power management technologies.

Product Function

Efficient Energy Storage

Stores 60kWh of electricity for future use, ensuring a stable energy reserve. It supports multiple energy inputs, including solar power, diesel generators, and the grid, providing flexible power integration.

Reliable Backup Power

Acts as an emergency power source during grid failures, ensuring critical equipment remains operational. With uninterrupted power supply capabilities, it is ideal for data centers, hospitals, and other essential facilities.

Smart Load Balancing

Optimizes energy usage by charging during off-peak hours and discharging during peak demand, helping balance the grid load. By leveraging time-of-use pricing, it effectively reduces electricity costs.

Independent Off-Grid Power

Provides a reliable power supply in areas without grid access, making it suitable for homes, businesses, and communities. As a core component of microgrids, it ensures stable and efficient energy distribution.

Intelligent Energy Management

Utilizes an advanced Energy Management System (EMS) to optimize charging and discharging strategies. Remote monitoring and management capabilities enhance operational efficiency and system performance.

Scalable & Flexible Design

Features a modular design that supports parallel system integration for expanded capacity. Its flexible configuration allows adjustments in power output and storage capacity to meet diverse energy needs.

Product Features

High Energy Density

Built with high-energy-density 1P16S 100Ah batteries, this system features a compact design, making it ideal for space-constrained environments. Its lightweight structure enhances ease of installation and transportation.

High-Efficiency Power Conversion

With superior charge and discharge efficiency and a charge/discharge current of 95A, it minimizes energy loss while delivering millisecond-level response times to meet urgent power demands.

Extended Lifespan

Designed for longevity, it supports over 8000 charge-discharge cycles with minimal degradation, ensuring stable long-term performance.

Enhanced Safety & Reliability

Equipped with multiple protection mechanisms, including safeguards against overcharging, over-discharging, overheating, and short circuits. With an IP55 protection rating, fire-resistant materials, and a flame-retardant design, it further enhances operational safety.

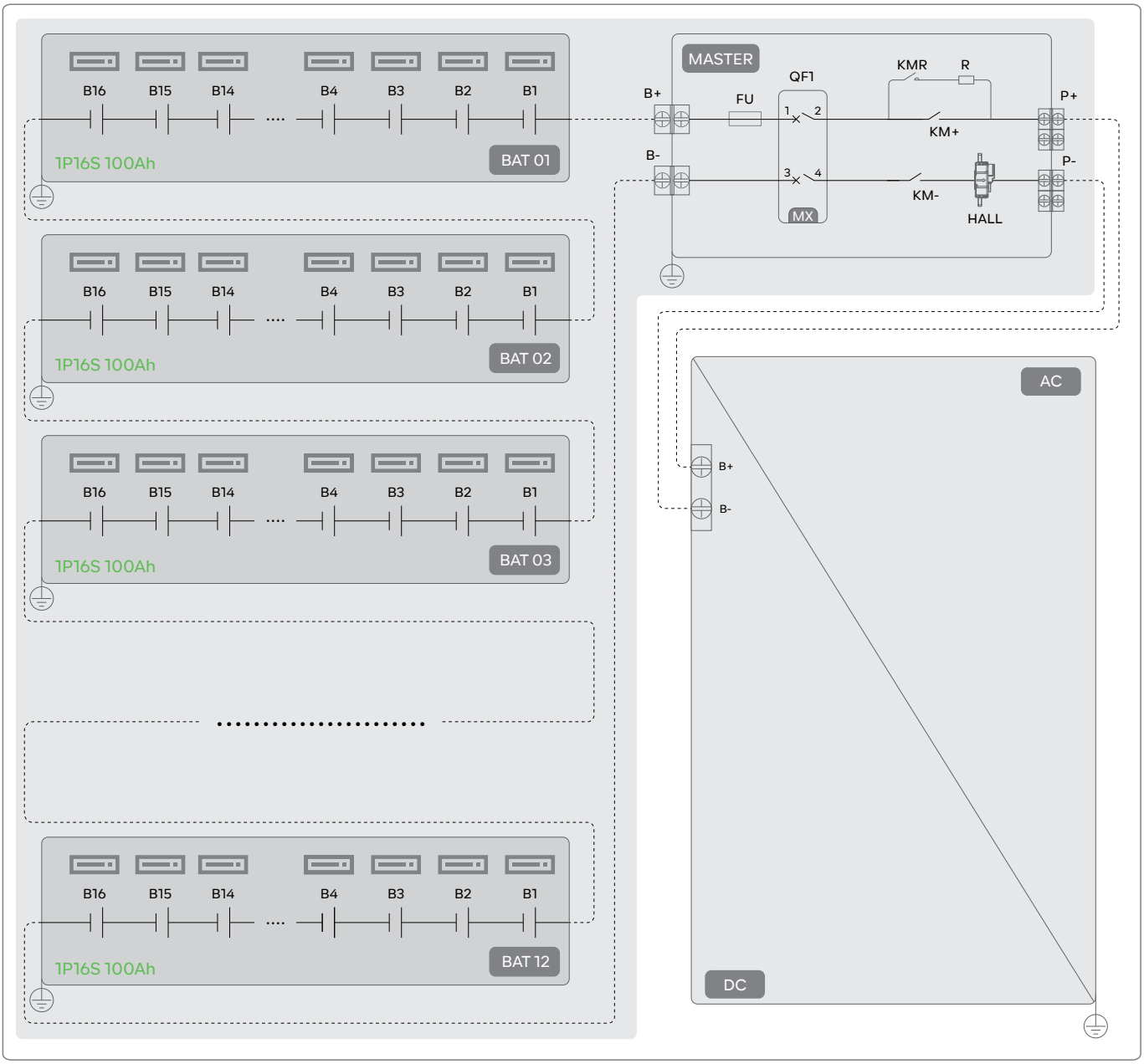
Application Scenario


MANUFACTURING

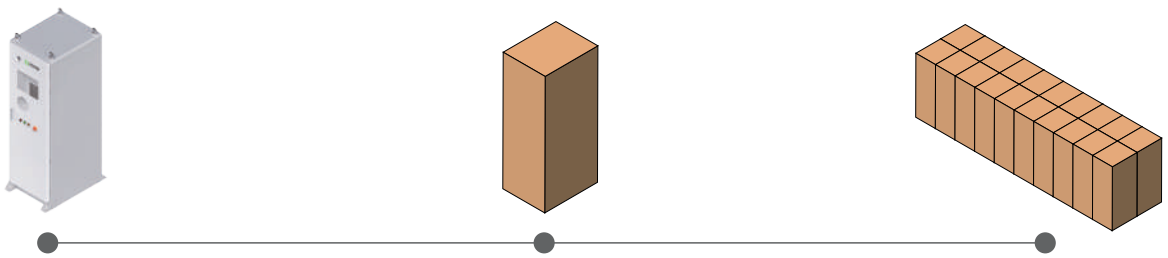

OFFICE SPACE


RETAIL

Product Topology

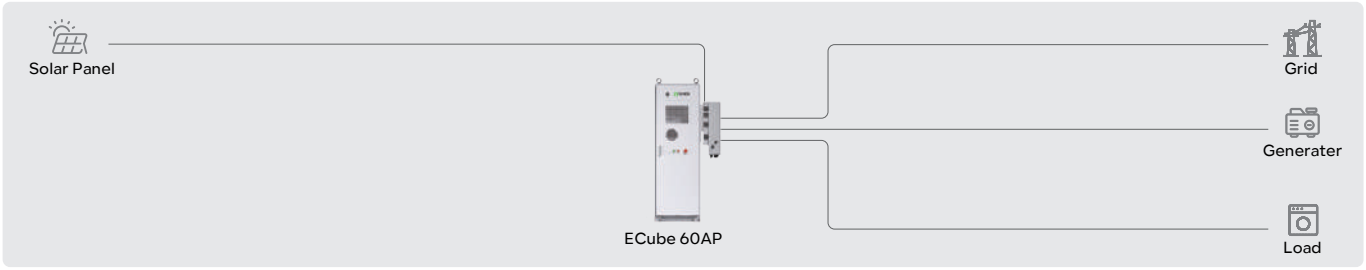


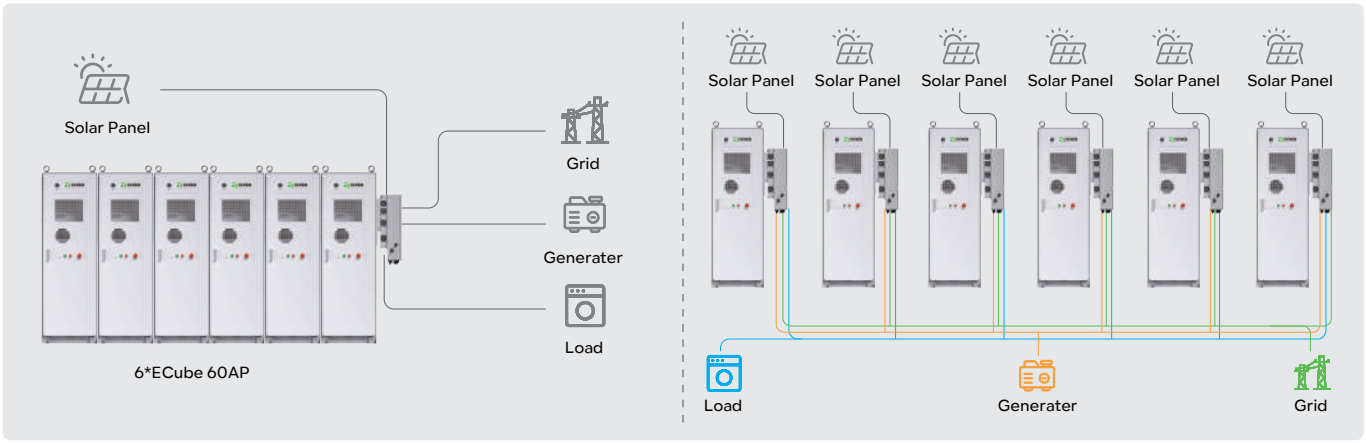
Packaging & Shipping Details



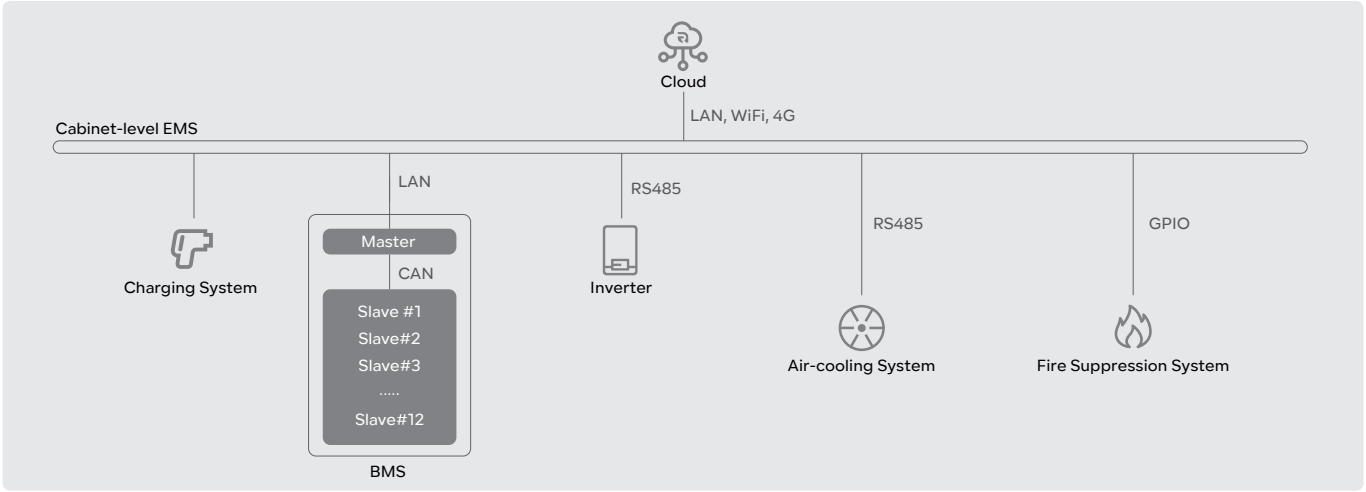
Product	1Set	40C
750*950*2280 mm	850*1050*2350 mm	20 Set
1050 kg	1100 kg	22000 kg

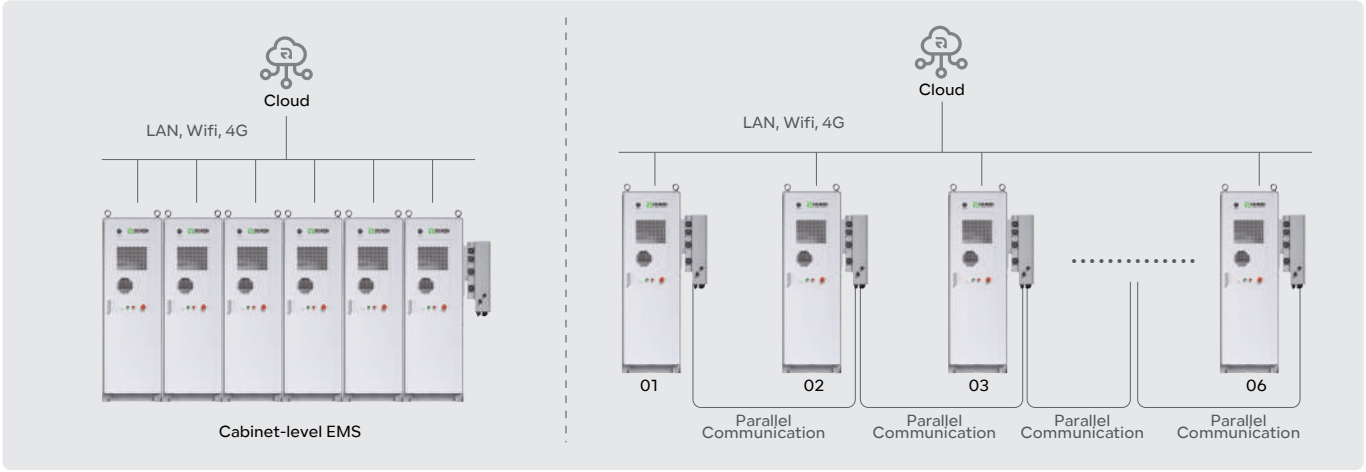
Single / Max. Parallel System Layout





Energy Management System(EMS) Structure





Product Parameter

Battery Energy Storage	
Cell Chemistry	$LiFePO_4$
Module Energy (kWh)	5.12
Module Nominal Voltage (V)	51.2
Module Capacity (Ah)	100
Battery Module Combination	12S1P
System Nominal Voltage (V)	614.4
System Operating Voltage (V)	562.5~681.6
System Energy (kWh)	61.44
Charge/discharge Current (A)	95

PV Input	
Max. Input Power (kW)	96
Max. Input Voltage (V)	1000
Start-up Voltage (V)	180
Rated Voltage (V)	600
MPPT Voltage Range (V)	150~850
Number of MPP Trackers	4
Number of String per MPPT	8
Max. Current per MPPT (A)	40
Max. Short Circuit Current per MPPT (A)	60

Charging System(Optional)	
Charging Type	Charging Mode 3 Case B & Case C
Outlet Options	AC Type 2 (IEC 62196-2)
Input/Output Current Rating (A)	32, three phase
Input/Output Power Rating (kW)	23@415Vac
Input/Ouput Voltage (Vac)	380~415
Input Frequency (Hz)	50/60
Cable Length	5.0 m, Optional: 7.5 m
Distribution Systems	TT, TN system
Connector Type	3P + N + PE
Certifications	IEC/EN 61851-1, IEC 61851-21-2 IEC 62196-1, IEC 62196-2, IEC62109

AC Output(On-Grid)	
Rated Output Power (kW)	50
Max. Output Power (kVA)	50
Rated Output Current (A)	76
Max. Input Power from Grid (kW)	50
Max. Input Current from Grid (A)	76
Rated Grid Voltage	3 / N / PE, 230 V / 400 Vac
Rated Grid Frequency (Hz)	50 / 60
Max. AC Passthrough Current (A)	152
THDi (@Rated Power)	<3%
Power Factor	0.8 leading ~ 0.8 lagging

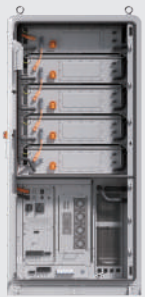
AC Output(Back Up)	
Rated Output Power (kW)	50
Max. Apparent Output Power	1.6 times / 2s
Rated Output Current (A)	76
Switch Time	<10ms
Rated Voltage	3 / N / PE，230V / 400Vac
Rated Frequency (Hz)	50/60
THDv (@linear load)	<2%

General Parameters	
Battery Model	R-EC060050A1-EU
Dimension - W*D*H (mm/in)	750*950*2280/29.5*37.4*89.7
Weight (kg/lb)	~1050/~2314.8
Operating Temperature (°C/°F)	-30~50/-22~122
Communication Interface	CAN, RS485, Wi-Fi, LTE
Humidity(RH)	5%~85%, non-condensation
Altitude	≤4000m/13122ft(2000m/6561ft derating)
IP Rating	IP55
Storage Temperature (°C/°F)	-20~35/-4~95
Recommend Depth of Discharge	90%
Cycle Life	>8000 cycles
Warranty	3 years free, paid from the 4th to the 15th year
Certification	IEC/EN62619:2022, IEC/EN62477-1:2012+A11+A1+A12 IEC/EN61000-4-2:2019, IEC/EN61000-4-2:2019 EN301908-1 V15.2.1:2013, EN301908-13 V13.2.1:2022 EN301489-1:2019 V2.2.3:2019, EN301489-52 V1.2.1:2021

MPack 233A

233kWh Liquid-Cooling Battery

MPack 233A is a high-performance energy storage solution for commercial and industrial use, featuring optimized thermal management, efficient energy cycling, advanced fire and gas detection, and intelligent power management for reliable and scalable energy integration.



Product Function

Advanced Energy Storage

Stores 233 kWh of electricity for future use, ensuring a reliable energy reserve. It supports integration with multiple power sources, including solar energy, diesel generators, and the grid, offering versatility in energy input.

Reliable Backup Power

Provides a dependable backup power supply during grid failures, keeping critical equipment operational. With seamless, uninterrupted power delivery, it is ideal for mission-critical applications such as data centers and hospitals.

Smart Load Management

Balances grid demand by charging during off-peak hours and discharging during peak hours, optimizing energy distribution. By leveraging time-of-use pricing, it helps reduce electricity costs and enhance overall energy efficiency.

Independent Off-Grid Power

Delivers a stable power supply to homes, businesses, or communities in off-grid areas, enabling independent operation. As a key component of microgrid systems, it ensures efficient and reliable energy distribution.

Intelligent Energy Management

Optimizes charging and discharging efficiency through an advanced Energy Management System (EMS). With remote monitoring and real-time control capabilities, it enhances operational oversight and improves energy utilization.

Scalable & Flexible Design

Features a modular design that supports parallel system integration for seamless capacity expansion. Its customizable configuration allows adjustments in power output and storage capacity to meet specific energy demands.

Product Features

High Energy Density

Designed with high-energy-density 1P52S 280Ah batteries, this system offers a compact size, making it ideal for space-constrained environments. Its optimized structure reduces weight, enhancing ease of installation and transportation.

High-Efficiency Conversion

With superior charge and discharge efficiency and a charge/discharge current of 180A, it minimizes energy loss while delivering millisecond-level response times to meet urgent power demands.

Long Lifespan

Designed for longevity, it supports over 8000 charge-discharge cycles with minimal degradation, ensuring stable long-term performance.

Safe & Reliable

Equipped with multiple protection mechanisms, including safeguards against overcharging, over-discharging, overheating, and short circuits. With an IP54 protection rating, fire-resistant materials, and a flame-retardant design, it further enhances operational safety.

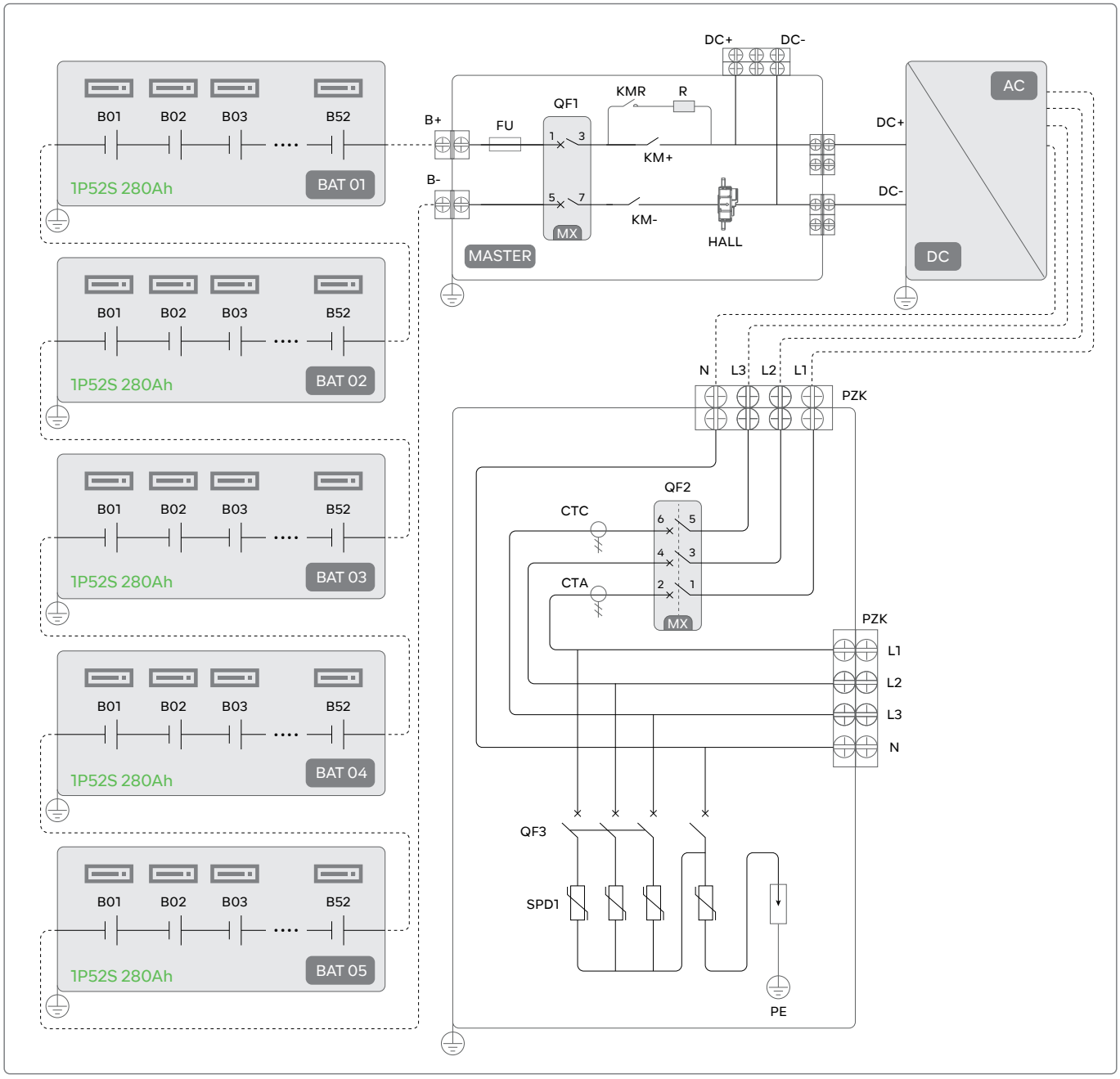
Application Scenario

AGRICULTURE

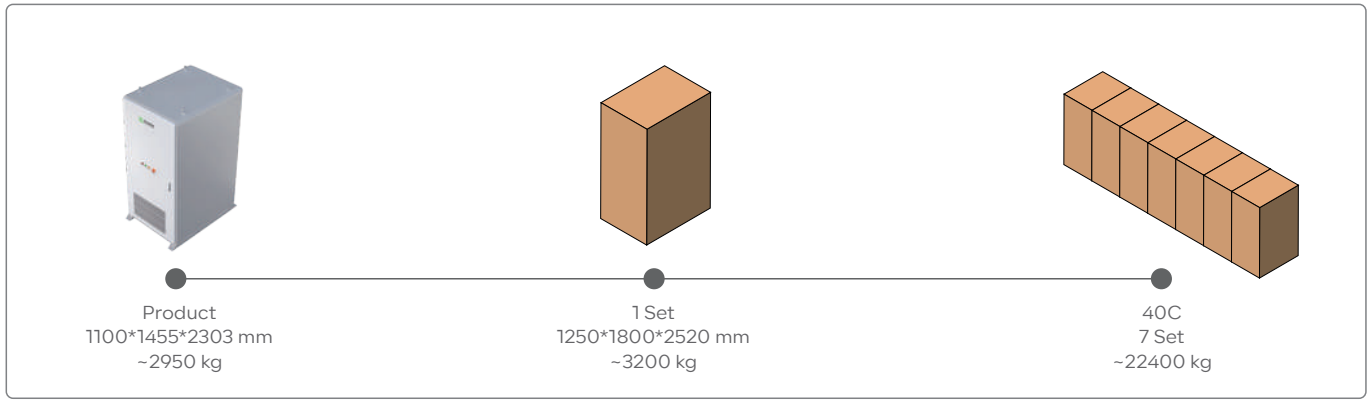
DATA CENTERS

UTILITIES

Product Topology



Packaging & Shipping Details

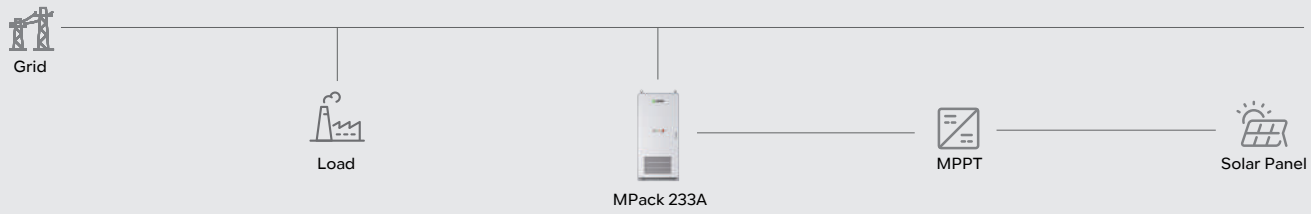


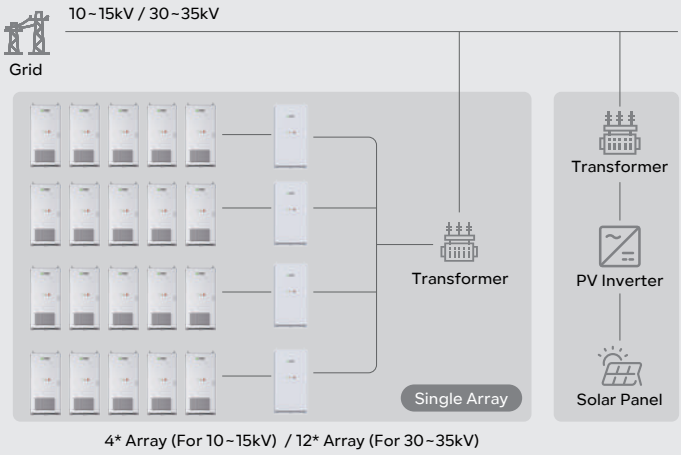
Product
1100*1455*2303 mm
~2950 kg

1 Set
1250*1800*2520 mm
~3200 kg

40C
7 Set
~22400 kg

Single / Max. Parallel System Layout

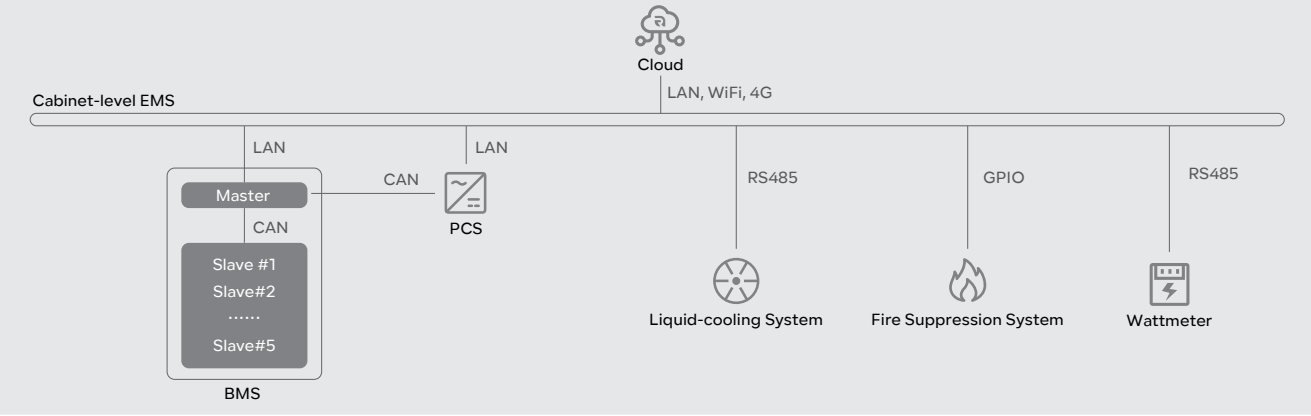


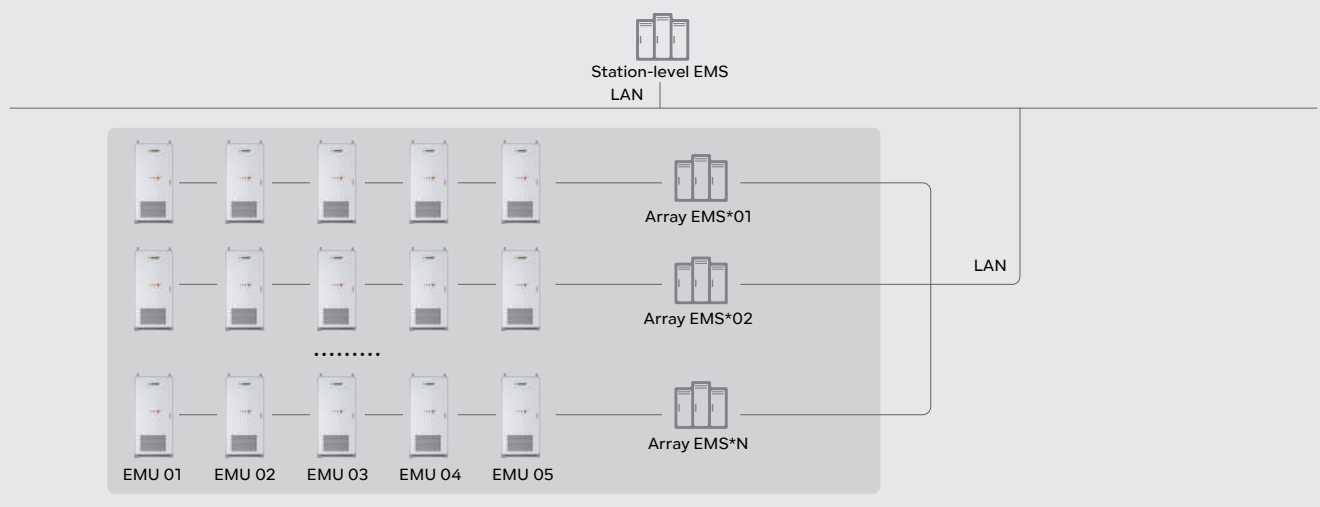


Grid Voltage	10~15kV
Number of ESS	80(4*20)
Number of Array	4
Total Capacity(MWh)	18.64(4*20*233kWh)

Grid Voltage	30~35kV
Number of ESS	240(12*20)
Number of Array	12
Total Capacity(MWh)	55.92(12*20*233kWh)

Energy Management System(EMS) Structure





Product Parameter

Battery Energy Storage	
Cell Type	LFP 3.2V / 280Ah
Module Combination	1P52S
System Combination (Modules)	5 in series
Capacity (kWh)	233
Nominal Voltage (V)	832
Voltage Range (Vdc)	702~936
Discharge Depth	90% DoD
Thermal Management Mode	liquid-cooling
Thermal Control Management	Aerosol Extinguishing

AC Output	
Rated AC Output Power (kW)	125
Max. AC Output Power (kVA)	150
Rated Output Voltage (Vac)	400
Output Voltage Range (Vac)	340~440(Settable)
Rated Grid Frequency (Hz)	50/60
Max. Output Current (A)	182
Adjustable Power Factor	＞0.99
THDi	＜3%

DC Input/Output	
Max. Power (kW)	250
Voltage Range (V)	761~923
Max. Current (A)	320

* The charging power of the DC interface is related to the load power, battery SOC and temperature.The discharge power of the DC interface is related to the battery's state of charge

System Characteristic	
Communication Interface	CAN, RS485, WiFi, LTE
Warranty	3 years free, paid from the 4th to the 15th year
Certifications	IEC/EN62619:2022, IEC/EN62477-1:2012+A11+A1+A12 IEC/EN61000-6-2:2019, IEC/EN61000:-6-4:2019, EN 50549-1:2019, EN 50549-10:2022

General Parameters	
Battery Model	R-MP233125A0-EU
Dimensions - W*D*H (mm/in)	1100*1455*2303(±10)/43*57.3*93.4
Total Weight (kg/lb)	2630(±10%)/5798(±10%)
Operation Altitude	≤4000m/13122ft(2000m/6561ft derating)
Noise Level @1m	<75 dB(A)
IP Rating	IP54
Operating Temperature(°C/°F)	–20~55/-4~131
Operating Humidity (RH)	0 to 95%, non-condensation
Storage Conditions	–20-30°C/–4-86°F, Up to 95% RH, non-condensation, State of Energy (SoE): 50% initial

MCombiner

On Grid Switching Combiner System

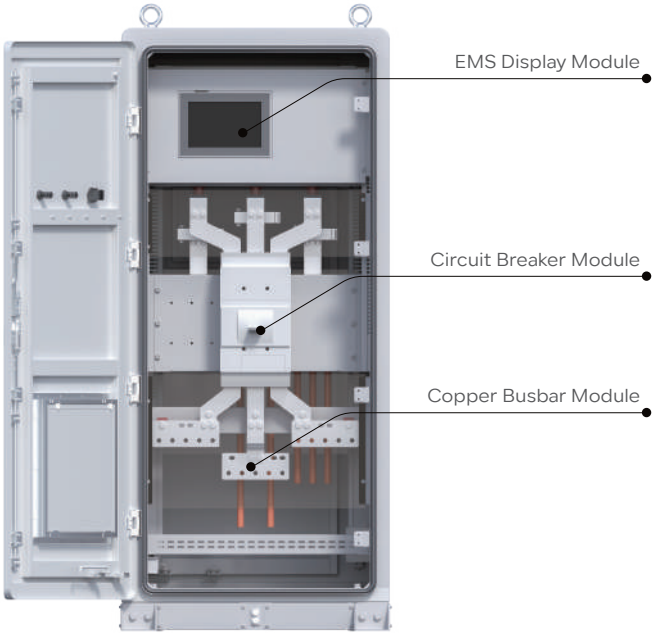
Secure Grid Interface: Acts as a pure grid-tied distribution cabinet without PCS, offering safe and stable connection for energy storage systems.

High-Efficiency Power Routing: Supports multi-loop battery access and DC bus integration with smart communication for optimized charge/discharge control.

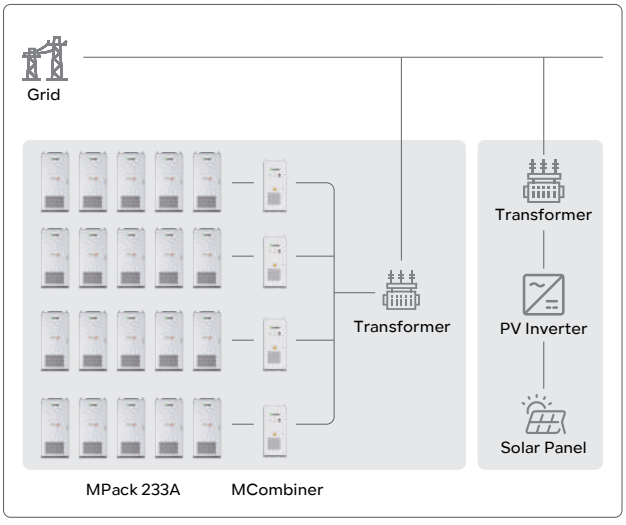
Reliable Protection Design: Features short-circuit protection, insulation monitoring, surge protection, and flame-retardant cabinet materials.

Intelligent Monitoring & Communication: Built-in HMI display with Modbus TCP/IEC 61850 support for seamless EMS/SCADA integration.

System Demonstration



System Layout



Application Scenario


AGRICULTURE


DATA CENTERS

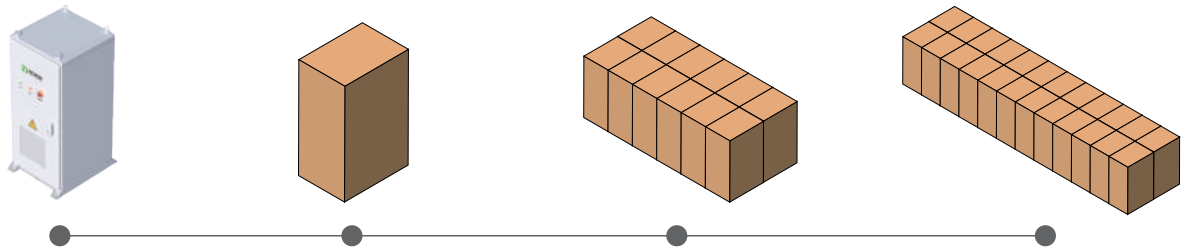

UTILITIES

Product Parameter

Product Parameter	
Input Voltage (Vac)	400
Access Channel	5
Output Channel	1
Rated Power (kW)	625
Rated Current(A)	900
Pcs (Power Conversion System) Switch (A)	250
Grid Switch, Load Switch (A)	1000

General Parameters	
Battery Model	R-MC625ACC01-EU
IP Rating	IP54
Dimensions - W*D*H (mm)	800*880 *1800
Total Weight (kg)	~446
Operating Temperature (°C/°F)	-20~55/-4~131
Storage Temperature (°C/°F)	–20~35/-4~95
Relative Humidity (RH)	0~95%
Altitude	≤2000m / 6561ft
Noise Level @1m	<65 dB(A)
Communication Interface	RS485, CAN, LAN
Specifications Matched for Energy Storage Systems	233kWh ESS, Supports Parallel Connection of Up to 5 Units

Packaging & Shipping Details



Product
~800*880*1800 mm
~446 kg

1 Set
~990*1100*1900 mm
~550 kg

20C
12 Set
~6600 kg

40C
24 Set
~13200 kg

MCombiner Pro

On/Off Grid Switching Combiner System

Seamless Mode Switching: Supports both grid-tied and off-grid modes with automatic switchover to ensure uninterrupted power supply during outages.

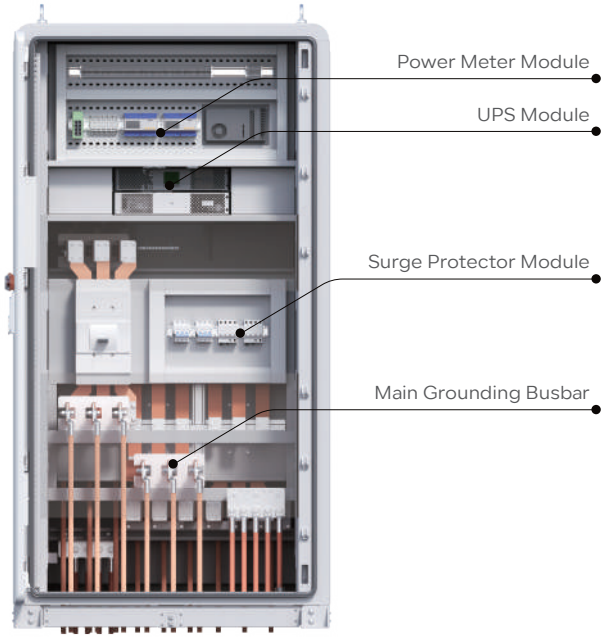
High System Reliability: Built with premium components and advanced control algorithms to ensure long-term stable operation.

Comprehensive Protection: Equipped with overcurrent, short-circuit, and other protection features to safeguard the entire system.

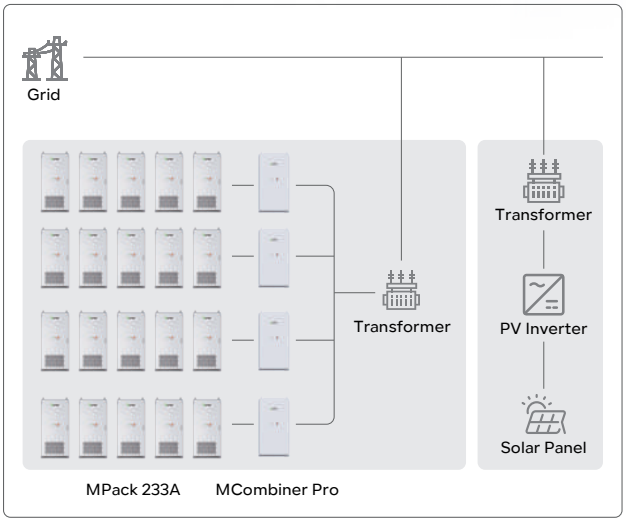
Remote Monitoring & Control: Enables real-time remote monitoring and operation for efficient system management and troubleshooting.

Modular Architecture: Modular design simplifies installation, maintenance, and future capacity expansion.

System Demonstration



System Layout



Application Scenario

AGRICULTURE

DATA CENTERS

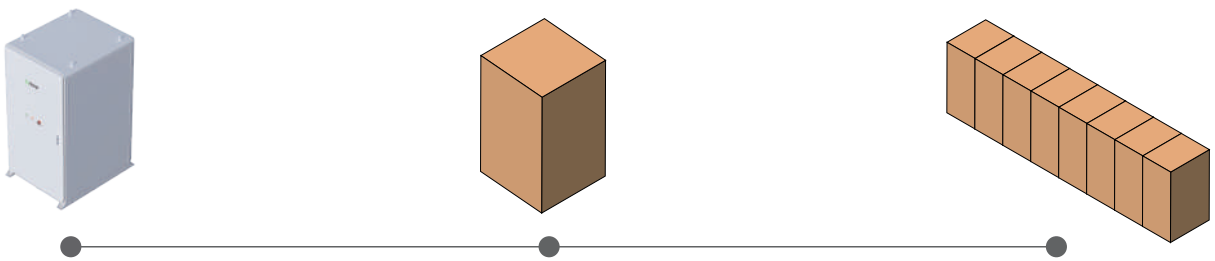
UTILITIES

Product Parameter

Product Parameter	
Input Voltage (Vac)	400
Access Channel	5
Output Channel	1
Rated Power (kW)	625
Rated Current(A)	900
Grid-connected and Off-grid Switching Time	≤3min
Anti-backflow Protection for Power Grid	Functions Included
Pcs (Power Conversion System) Switch (A)	250
Grid Switch, Load Switch (A)	1000

General Parameters	
Battery Model	R-MCP625ACC01-EU
IP Rating	IP54
Dimensions - W*D*H (mm)	1200*1456*2302
Total Weight (kg)	~1196
Operating Temperature (°C/°F)	-20~55/-4~131
Storage Temperature (°C/°F)	–20~35/-4~95
Relative Humidity(RH)	0~95%
Altitude	≤2000m / 6561ft
Noise Level @1m	<65 dB(A)
Communication Interface	RS485, CAN, LAN
Specifications Matched for Energy Storage Systems	233kWh ESS, Supports Parallel Connection of Up to 5 Units

Packaging & Shipping Details



Product
~1200*1456*2302 mm
~1196 kg

1 Set
~1320*1642*2530 mm
~1320 kg

40C
8 Set
~10560 kg

MCombiner PV

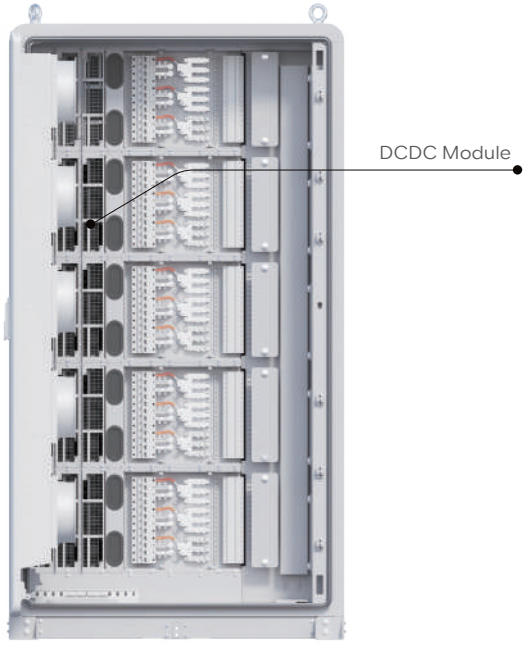
MPPT Combiner System

High-Efficiency Power Tracking: Equipped with advanced MPPT algorithms and multi-channel independent tracking, the system continuously locks onto the maximum power point, significantly increasing PV generation efficiency under varying conditions.

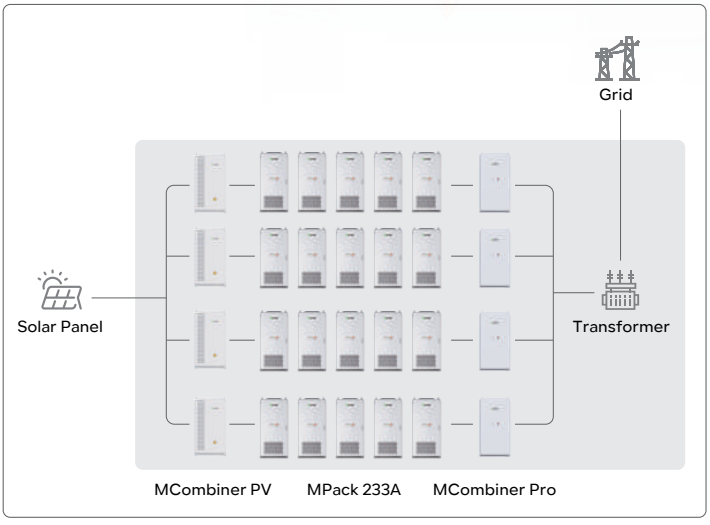
Intelligent Power Coordination: Seamlessly integrates with PCS and EMS systems to dynamically manage power output, optimize energy distribution, and enhance overall solar-plus-storage performance.

Comprehensive Safety Protection: Includes full-range DC-side protections such as reverse polarity, overvoltage, overcurrent, short-circuit, and surge protection. Supports anti-islanding, over-temperature protection, and PID suppression for stable and secure operation.

System Demonstration



System Layout



Application Scenario


AGRICULTURE


DATA CENTERS


UTILITIES

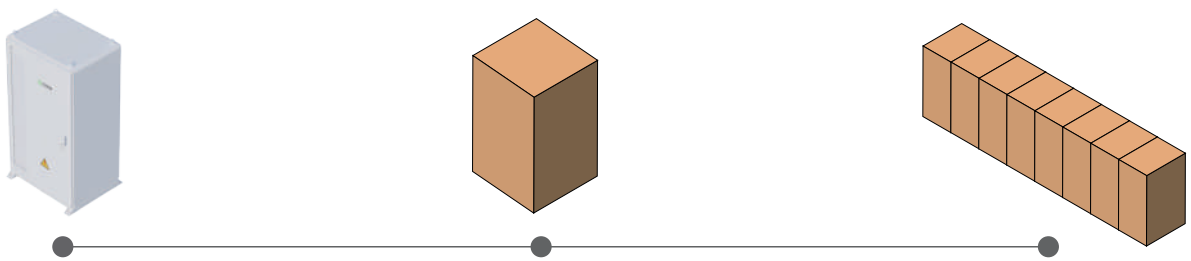
Product Parameter

PV Input	
Input Voltage(Vdc)	400~750
The Max. Static Voltage Borneunder No Operation(Vdc)	850
Rated Voltage(Vdc)	750
MPPT Operating Voltage Range(Vdc)	400~750
MPPT Full Load Voltage Range(Vdc)	400~750
MPPT Starting Voltage(V)	400
MPPT Efficiency	95.50%
Max. Input Current(Adc)	110*15
Number of MPPT	15
No. of PV Strings per MPPT Trackers	4

DC Output	
Individual Module Output Power(kW)	40
Max. Number of Modules	15
Total Output Power(kW)	600
Output Voltage Range(Vdc)	50 ~ 1000
Output Current Range(Adc)	0~133.3@Per MPPT
Voltage Regulation Accuracy	<±0.5%(150~1000V, 0~20MHz)
Precision of Steady Current	≤±1%(Output load 20% ~ 100%)
Voltage Ripple Factor	≤1%

General Parameters	
Product Model	R-MC600PVC01-EU
Type of Cooling	Forced Air-cooling
Dimensions - W*D*H (mm)	~1250*955*2300
Total Weight (kg)	~1300
Communication Interface	CAN bus, LAN
Altitude	≤2000m / 6561ft
Noise Level @1m	<75 dB(A)
IP Rating	IP54
Operating Temperature (°C/°F)	-20~55/-4~131 (above 55°C/131°F needs to be reduced)
Storage Temperature (°C/°F)	-20~35/-4~95
Relative Humidity	≤95%RH, non-condensing

Packaging & Shipping Details



Product
~1250*955*2300 mm
~1300 kg

1Set
1500*1100*2500 mm
~1400 kg

40C
8 Set
~11200 kg

MPack 233C

Cabinet Fast Charging Solution

MPack 233C is a high-performance energy storage solution for commercial and industrial use, featuring optimized thermal management, efficient energy cycling, advanced fire and gas detection, and intelligent power management for reliable and scalable energy integration.

Product Function

Stable & Reliable Performance

Featuring a 233kWh energy storage system, it delivers consistent power even during grid instability. An advanced thermal management system ensures efficient heat dissipation, enabling long-term stable operation.

Energy-Efficient & Eco-Friendly:

High-efficiency power conversion minimizes energy loss and lowers costs. Compatible with solar, wind, and supports CCS1 plus NACS charging interfaces for versatile EV integration and sustainability.

Space-Saving Design

The dual-gun charger adopts a compact design that conserves installation space, making it ideal for various application scenarios including urban and commercial environments.

Intelligent Management System

Supports remote operation and real-time monitoring for easier maintenance and control. It also logs detailed charging data, helping operators optimize energy usage and refine charging strategies.

Enhanced User Experience

Designed with user convenience in mind, it features an intuitive interface and supports multiple payment methods. Built-in protections like over-voltage and over-current safeguards ensure a safe and reliable charging experience.

Cost-Effective Operation

Its high charging efficiency reduces power loss, improving overall energy utilization. Intelligent system control and optimized cooling also extend equipment lifespan, further reducing long-term operational costs.

Product Features

High-Power Fast Charging

Delivers up to 320kW for ultra-fast EV charging and supports dual-vehicle charging to improve efficiency and reduce wait times.

Comprehensive Safety Protection

Equipped with over-voltage, over-current, over-temperature, and short-circuit protection, plus insulation monitoring and emergency stop for maximum safety, and an IP54 protection rating for added durability in challenging environments.

Integrated Energy Storage & Off-Grid Power

Features a 233kWh battery system that provides backup power during grid outages or peak hours, ensuring continuous charging even when off-grid.

Smart Data Tracking & Energy Analysis

Automatically records detailed charging data, including energy usage, duration, and cost, for both users and operators. It also offers energy consumption reports to help optimize the operation and efficiency of the charging station.

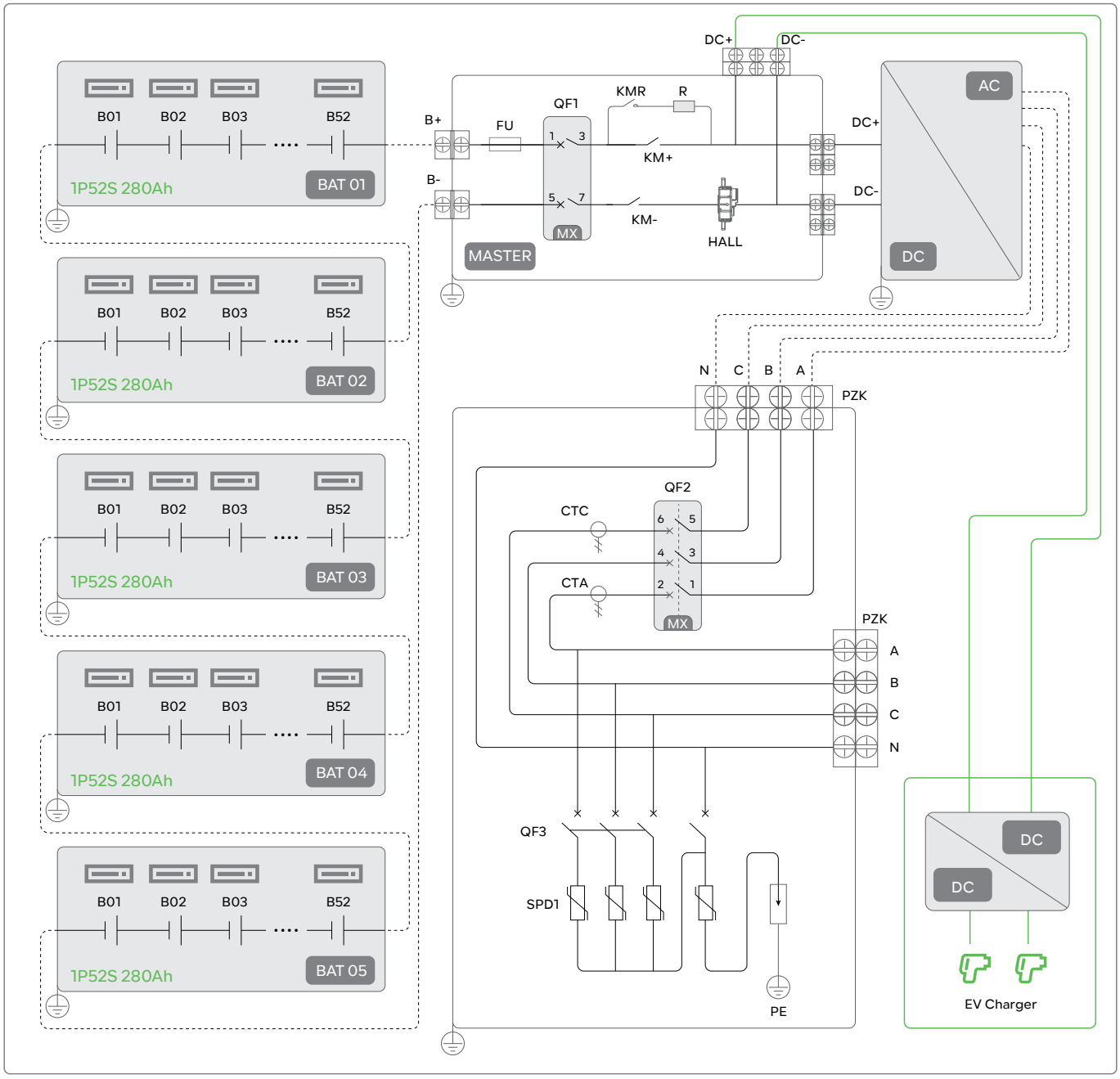
Application Scenario


PARKING LOTS

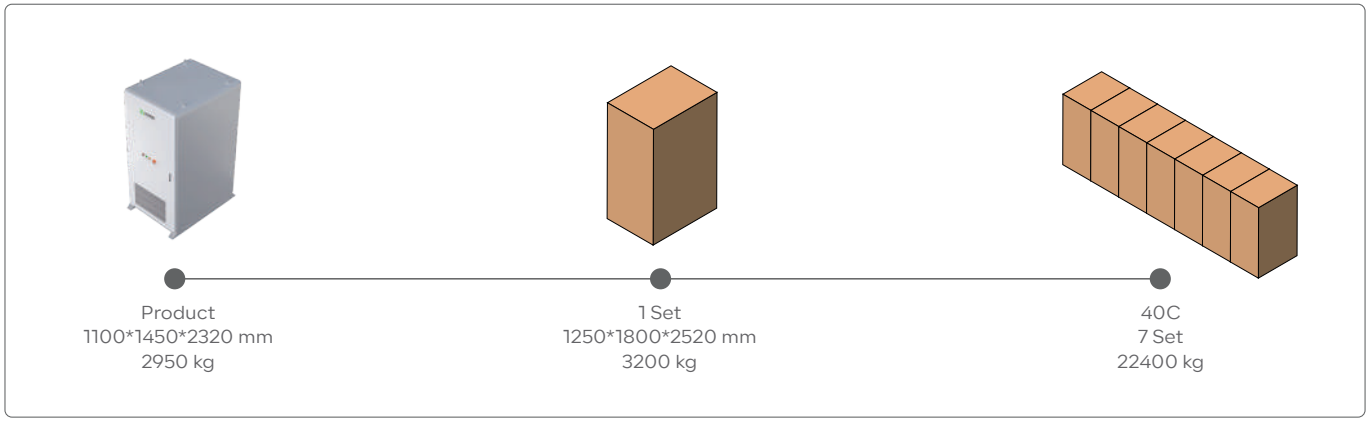

DEPOT


CHARGING STATION

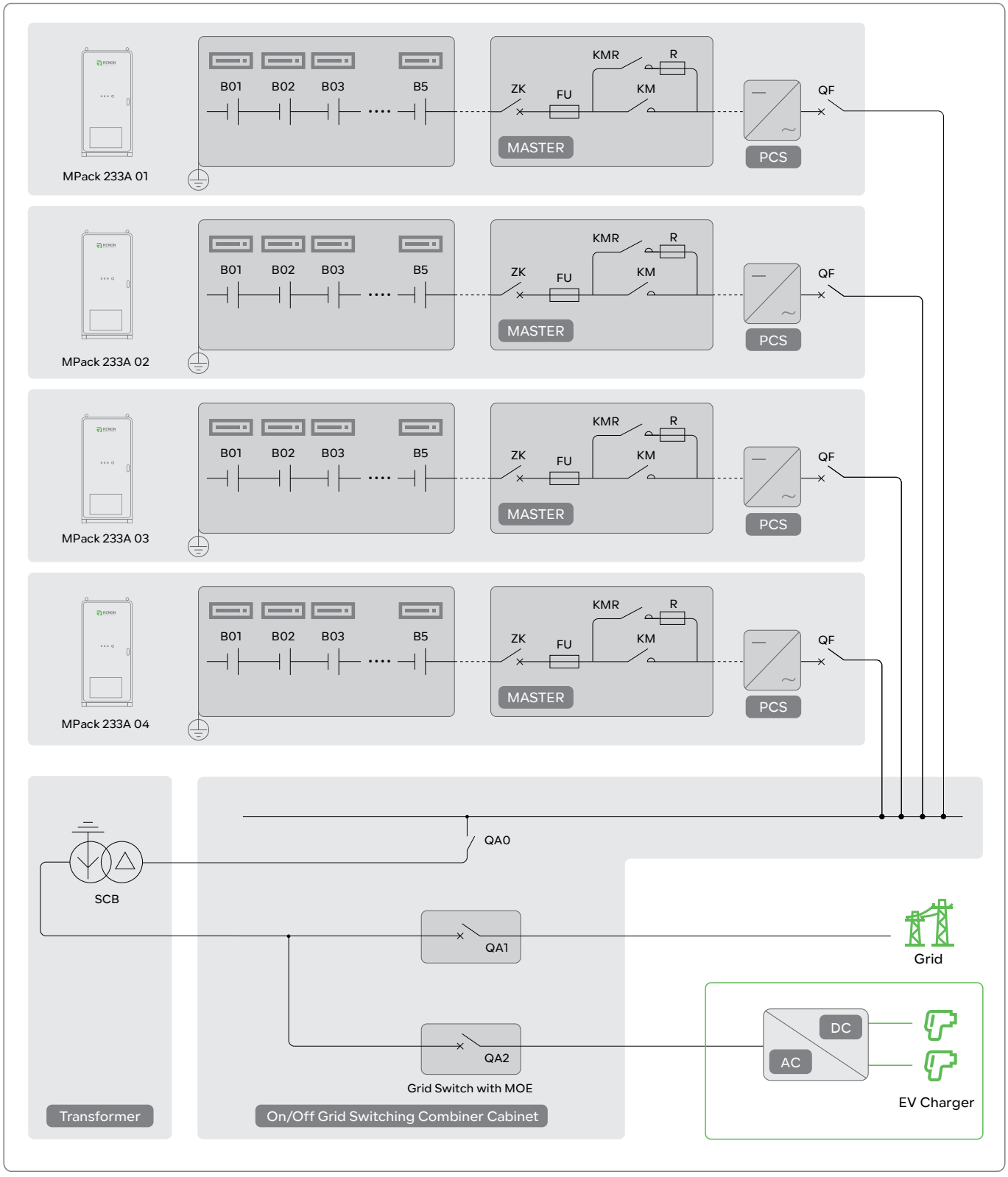
Product Topology(DC Coupling)



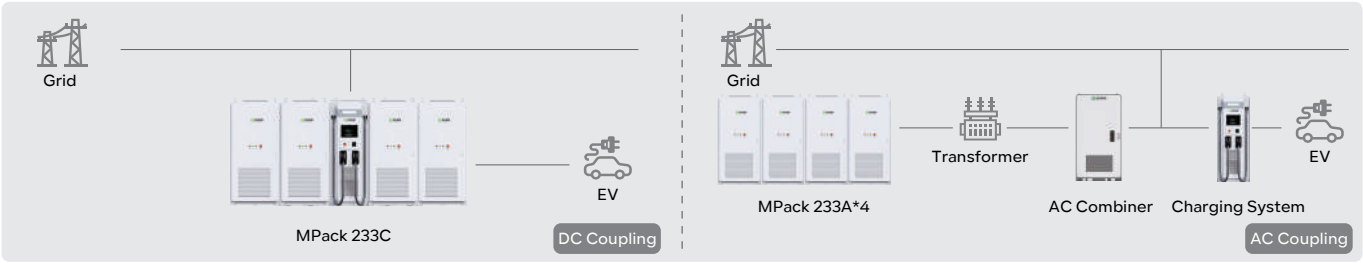
BESS Packaging & Shipping Details

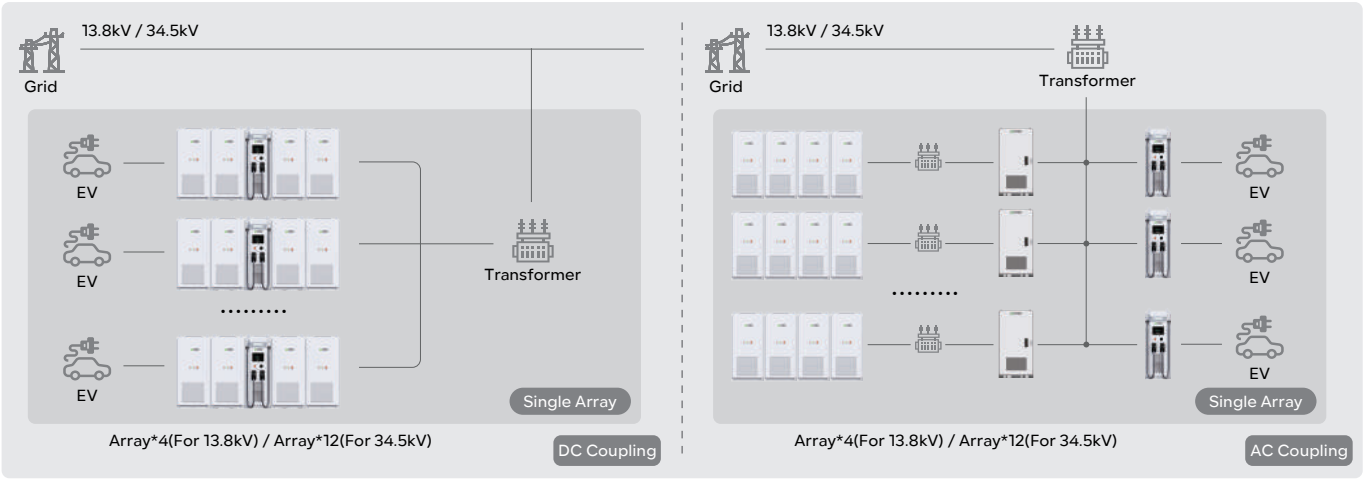


Product Topology(AC Coupling)

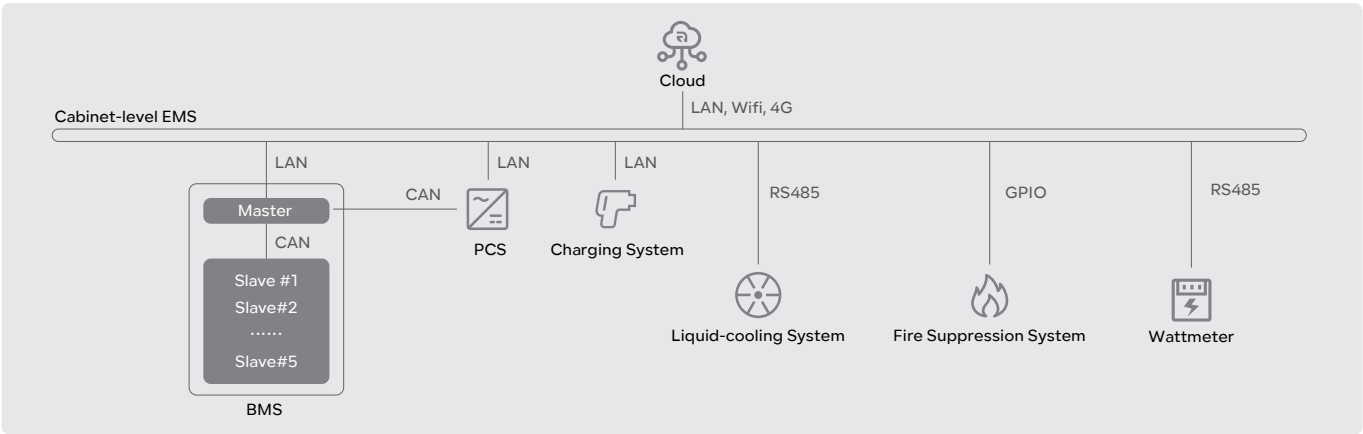


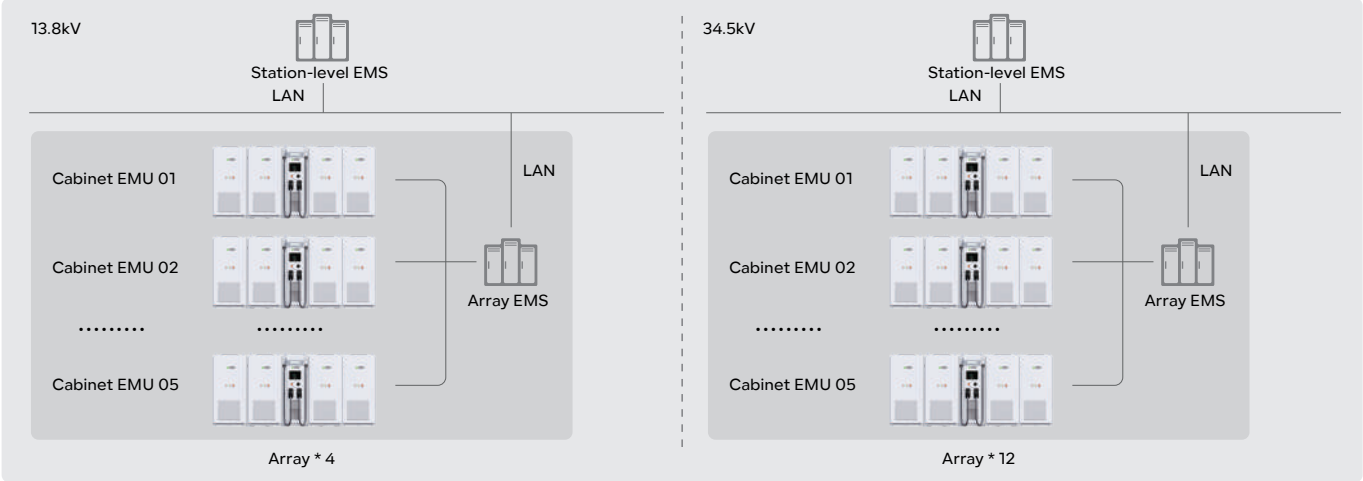
Single / Max. Parallel System Layout





Energy Management System(EMS) Structure





BESS Parameter

Battery Energy Storage	MPack 233C	MPack 466C	MPack 699C	MPack 932C
Battery Capacity (kWh)	233	466	699	932
Battery Charge/Discharge Rate	≤0.5C			
Battery Efficiency	≤95%			
Battery Module IP Rating	IP54			
Battery Cooling System	Liquid-cooling			
Thermal Control Management	Aerosol Extinguishing			
AC Output				
Rated AC Output Power (kW)	125	250	375	500
Max. AC Output Power (kVA)	150	300	405	540
Rated Output Voltage (Vac)	400			
Output Voltage Range (Vac)	340~440(Settable)			
Rated Grid Frequency (Hz)	50/60			
Max. Output Current (A)	182	364	491.4	655.2
Adjustable Power Factor	>0.99			
THDi	<3%			
DC/DC				
Max. Charge/discharge Power (kW)	250	500	750	1000
Charge/discharge Voltage Range (Vdc)	761~923			
Max. Current (A)	320	576	864	1152

* The charging power of the DC interface is related to the load power, battery SOC and temperature.The discharge power of the DC interface is related to the battery's state of charge

System Characteristic	
Communication Interface	CAN, RS485, WiFi, LTE
Warranty	3 years free, paid from the 4th to the 15th year
Certifications	ANSI/CAN/UL 1973:2022, ANSI/CAN/UL 9540:2020, UL 9540A:2019, UL 1741:2012 Ed.3+R:19May2023, UL 1741:2021 Ed.3(Supplement SB), CSA C22.2#107.1:2016 Ed.4+U1, IEEE 1547:2018 IEEE 1547.1:2020, FCC Part 15 Subpart B:2013

General Parameters				
Battery Model	R-MP233125C1-EU	R-MP466250C1-EU	R-MP699375C1-EU	R-MP932500C1-EU
Dimensions - W*D*H (mm/in)	~2200*1450*2320 ~86*57*91.3	~3300*1450*2320 ~129*57*91.3	~4400*1450*2320 ~172*57*91.3	~5500*1450*2320 ~215*57*91.3
Total Weight (kg/lb)	3685(±5)/8124(±11)	6545(±5)/14429(±11)	9405(±5)/20734(±11)	12265(±5)/27039(±11)
Operation Altitude	≤2000m / 6561ft			
Noise Level @1m	<80 dB(A)			
IP Rating	IP54			
Operating Temperature (°C/°F)	-20~55/-4~131*			
Operating Humidity (RH)	0 to 95%, non-condensation			
Storage Conditions	-20~30°C/-4~86°F, Up to 95% RH, non-condensation, State of Energy (SoE): 50% initial			

* We can offer a wider range of temperatures if required, please speak to one of our sales colleagues.

Charging System Parameter

Power Input	
Input Voltage(V)	832(600~1500)
Rated Current(A)	495

Power Output	
DC Voltage(Vdc)	200~1000
Max. Current(A)	400
Max. Power(kW)	400
Efficiency	>97%
Voltage Stabilized Accuracy	≤0.5%
Current Stabilized Accuracy	≤1%
Current Sharing Unbalance	≤3%
Peak-peak Ripple	≤1%

Sturcture Design	
Installation Method	Floor-stand
Charging Outlet	DC CCS1
Cable Length	5.0m
Authentication	RFD, On-screen PIN code authorization Option: payment terminal Autocharge Other Customization

Communication	
Charger v.s. EV	PLC(DIN 70121:2014-12/ISO15118)
Communication Protocol	OCPP 1.6J

Safety Protection	
Over/under Voltage Protection	Yes
Over Current Protection	Yes
Overload Protection	Yes
Short Circuit Protection	Yes
Leakage Protection	Yes
Over Temperature Protection	Yes
Grounding Protection	Yes
Integrated Surge Protection	Yes

General Parameters	
Battery Model	R-SP400C01-EU
Dimensions - W*D*H (mm/in)	~1100*900*2320/43*35.4*91.3
Total Weight (kg/lb)	~825/1818.8
Operating Temperature (°C/°F)	-30~50/-22~122
Humidity (RH)	5%~95%, non-condensation
Operation Altitude	≤2000m/6561ft
IP Rating	IP55
IK Rating	IK10(HMI: IK08)
Application Site	Indoor/Outdoor
Cooling Method	Air-cooling
Noise	<65dB(Ambient Temperature)

Smart Matrix A

10ft Battery & Boost Converter
One Stop Solution

Product Function

BMS Battery Management System

The BMS ensures safe and efficient operation of the battery by monitoring key parameters such as voltage, temperature, and charge/discharge status. It helps to extend battery life, improve performance, and prevent issues like overcharging or overheating.

EMS Energy Management System

The EMS optimizes energy flow within the system, dynamically adjusting charging and discharging strategies based on demand and grid conditions. It enhances efficiency, reduces energy costs, and integrates with grid systems for stable power management.

UPS Uninterruptible Power Supply

The UPS function ensures continuous power during grid failures or disruptions, maintaining stable operation of critical equipment like data centers or communication stations, thus enhancing system reliability.

Highly Integrated Design

Smart Matrix A combines core components including PCS , battery system, BMS into a single unit. This reduces the need for external connections, saving installation space and costs. Its modular architecture supports flexible capacity expansion to meet varying energy storage demands.

Multi-Unit Parallel Operation

Smart Matrix A supports multi-unit parallel operation, enabling scalable capacity expansion. This feature ensures flexibility and reliability, making it suitable for both small and large-scale projects.

Fire Protection

Equipped with advanced fire protection features, including temperature control and fire detection systems, Smart Matrix A ensures safety by automatically activating emergency measures in case of abnormal conditions, minimizing fire risks.

Product Features

High Integration

The liquid cooling system battery box offers the highest capacity with the latest dimensions, requiring minimal space while providing flexible transportation and installation options.

Safety and Reliability

Equipped with comprehensive battery monitoring, multi-layer fire prevention, top ventilation design, and active AI management to ensure maximum safety and reliability.

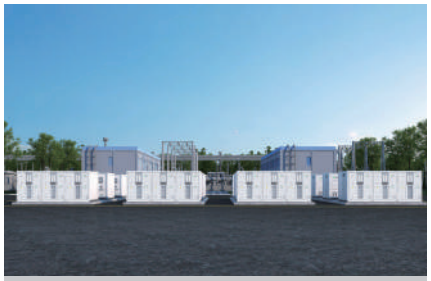
Efficient and Flexible

Featuring a modular structure and an efficient liquid cooling system, it is designed to perform well in extreme environments, maximizing battery lifespan and performance.

Smart Operation and Maintenance

Comes with a complete EMS that is easy to upgrade, featuring big data management checks, proactive handling, and intelligent SOC calibration to ensure optimal performance with zero downtime.

Application Scenario

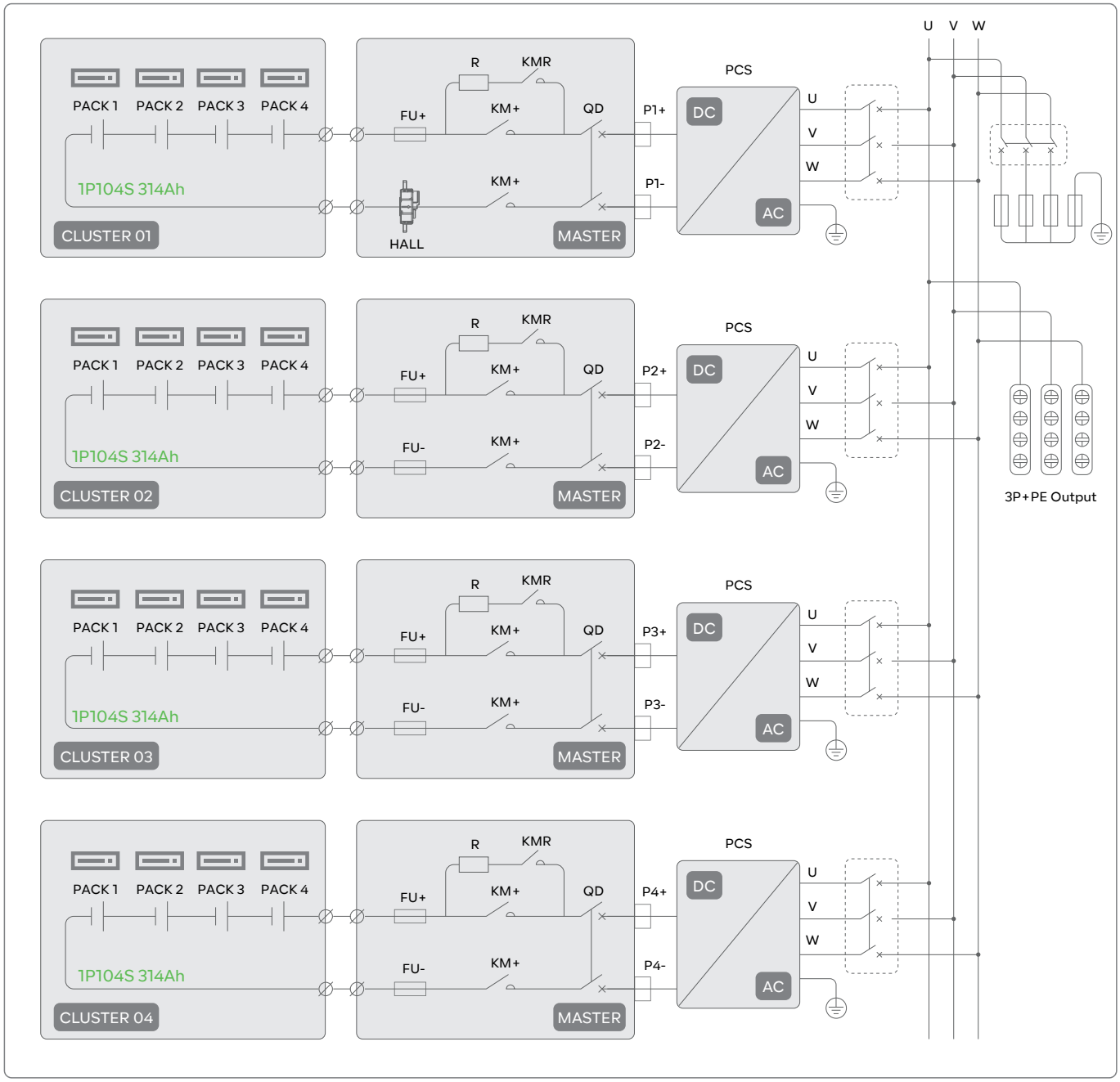


SUBSTATIONS

ELECTRICITY GENERATING

COMMUNITY

Product Topology

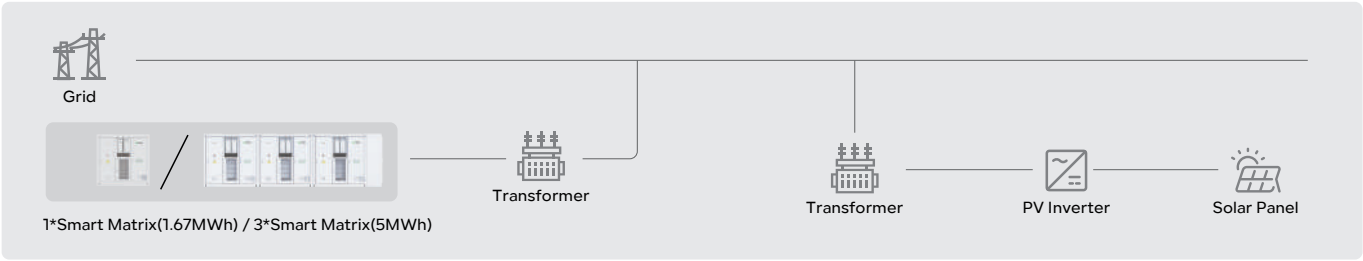


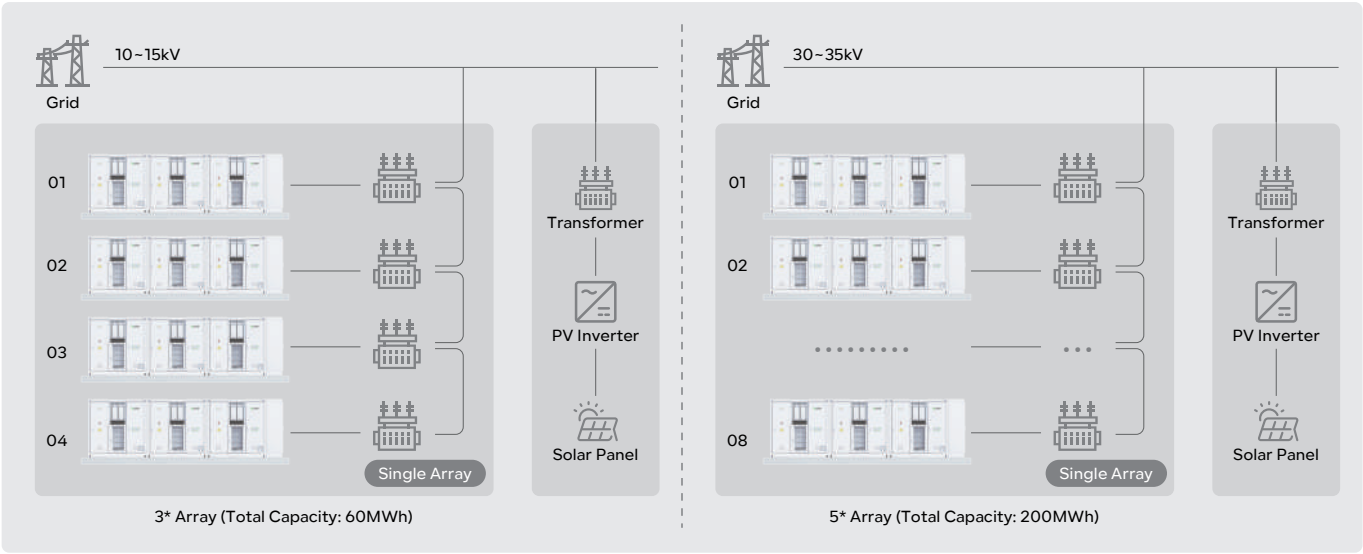
Packaging & Shipping Details

1*Battery System
2438*2991*2591 mm
~15000 kg

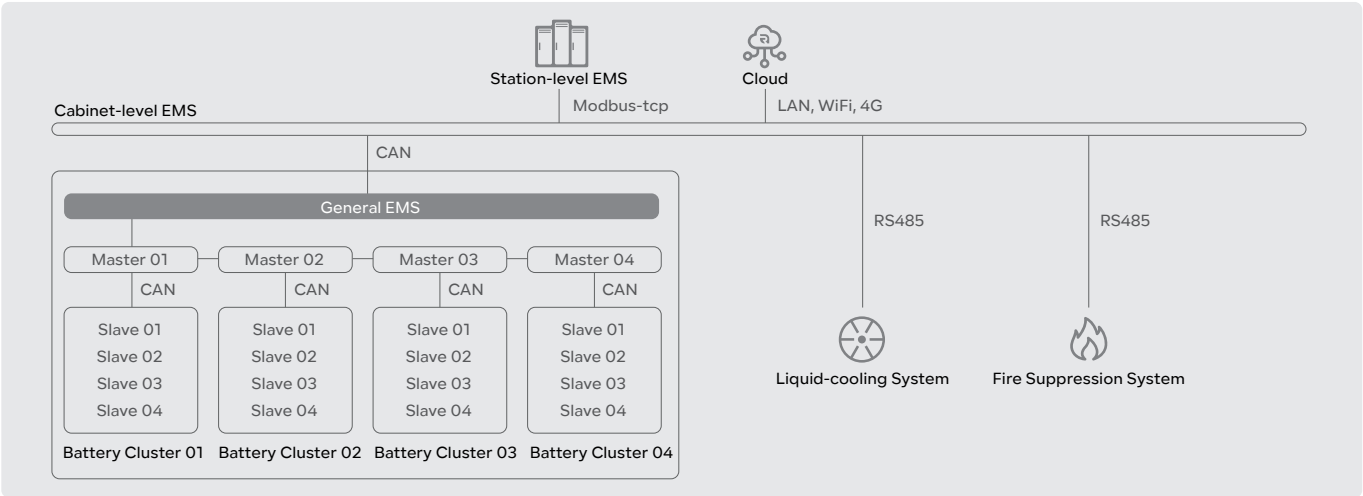
2*Battery System
2438*5982*2591 mm
~30000 kg

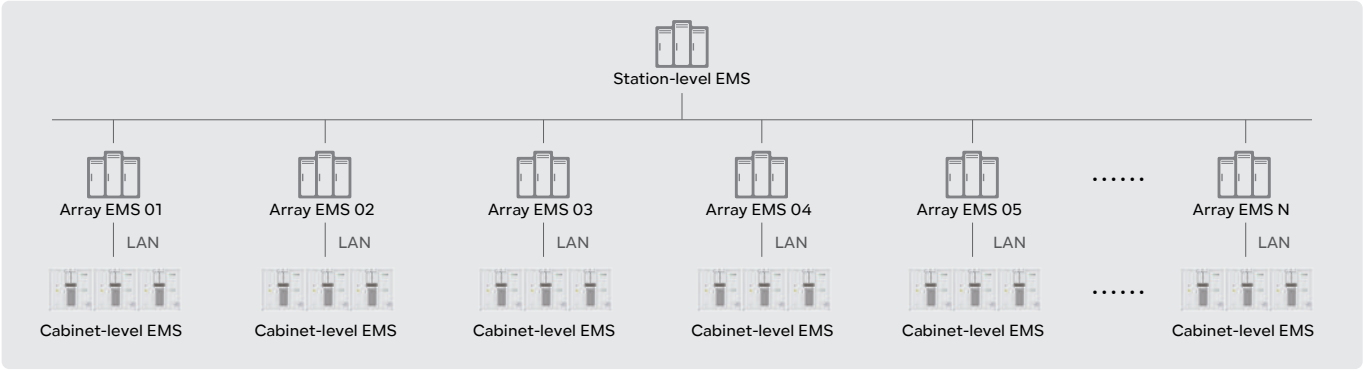
Single / Max. Parallel System Layout





Energy Management System(EMS) Structure





BESS Parameter

Battery Energy Storage	1672kWh	3344kWh	5016kWh
Cell Type		LFP 3.2V/314Ah	
Module Configuration		1P104S	
String Configuration		1P416S	
Number of Battery System	1	2	3
Number of Strings	4	8	16
Capacity (kWh)	1672	3344	5016
Nominal Voltage(V)		1331.2	
Operation Voltage Range(Vdc)		1218.88~1476.8	
Discharge Depth		90% DoD	
Thermal Management Mode		Liquid Cooling	
Thermal Control Management		Aerosol Extinguishing or PFH	

AC Output			
AC Output Power(kVA)	860	1720	2580
Rated Output Voltage(Vac)		690V, 3W+PE	
Rated Grid Frequency(Hz)		50/60	
Power Factor		-1~1	
THDi		<1.5% (100% load)	

System Characteristic	
Communication Interface	CAN, RS485, Ethernet
Warranty	3 years free, paid from the 4th to the 15th year
Systerm Certifications	IEC 62619, IEC 62477, IEC 61000, UN3536
PCS Certifications	EN/IEC 62477-1, IEC 60068-2-6:2007, IEC 61683, EN/IEC 61000-6-2, EN/IEC 61000-6-4

General Parameters			
Product Model	R-SM1672860A1-EU	R-SM33441720A1-EU	R-SM50162580A1-EU
Dimensions - D*H (mm)	2438*2591	2438*2591	2438*2591
Dimensions - W (mm)	2991	5982	8973
Battery System Total Weight (kg)	~15000	~30000	~45000
Operation Altitude	4000m / 13000feet(>3000m/10000feet derating)		
Nosie Level@1m	<75dB		
IP Rating	IP54		
Operation Temperature (°C/°F)	-20~55/-4~131 (De-rating over 45°C/113°F)		
Operation Humidity (RH)	≤95%, No condensation		
Storage Conditons	-20°C to 30°C, Up to 95% RH, non-condensing, State of Energy (SoE): 50% initial		

Combiner System Parameter

Product Parameter	
Input Voltage (Vac)	690V, 3W+PE
Access Channel	3
Output Channel	1
AC Output Power (kVA)	2580
Max. AC Output Current (A)	2378.4
Grid/Load switch (A)	2500

General Parameters	
Battery Model	R-SC2580ACC01-EU
Dimensions - W*D*H (mm)	~800*2200*2591
Total Weight (kg)	~750
Communication Interface	RS485, CAN, LAN
Specifications Matched for Energy Storage Systems	1.67MWh ESS, Supports Parallel Connection of Up to 3 Units

XGen

Vehicle-mounted Mobile Power Supply

XGen is a highly adaptable and energy-efficient power solution, offering multiple output options (120V, 208V, 240V, 480V) to ensure high performance, flexible operation modes, and broad compatibility across diverse applications.

Product Function

Power Generation & Storage for Max. Efficiency

No need for high-power generators—XGen intelligently balances PCS power and generation to reduce fuel consumption.

Versatile Compatibility for All Power Needs

Multiple voltage outputs (480V, 208V, 240V, 120V) for residential, commercial, and industrial use.

Flexible Power Modes for Any Scenario

With a large 560kWh capacity, it supports hybrid, off-grid, AC/DC coupling, and more, adapting seamlessly to diverse energy needs.

High-Power Output, Handles Heavy Loads with Ease

Delivers up to 324kW instant output, ensuring stable power supply for demanding applications.

Smart Management with Remote Control

Built-in EMS system enables real-time monitoring and remote control via Web & App for effortless operation.

All-in-One Charging Solution

Supports Combo fast charging, Type-C & Type-A ports, powering EVs, storage systems, and digital devices.

Product Features

Multi-Source Energy Input

Powered by a 560kWh LiFePO4 battery, supporting grid, diesel generators, and 120kW solar DC charging for seamless energy integration.

Optimized Generator Usage

Pairs with 400kVA generators, reducing upfront investment, fuel consumption, and maintenance costs for smarter power solutions.

Portable Durability

Towable for rapid deployment, with IP54/NEMA 3R protection ensuring durability in harsh environments.

Smart Operation and Maintenance

Comes with a complete EMS that is easy to upgrade, featuring big data management checks, proactive handling, and intelligent SOC calibration to ensure optimal performance with zero downtime.

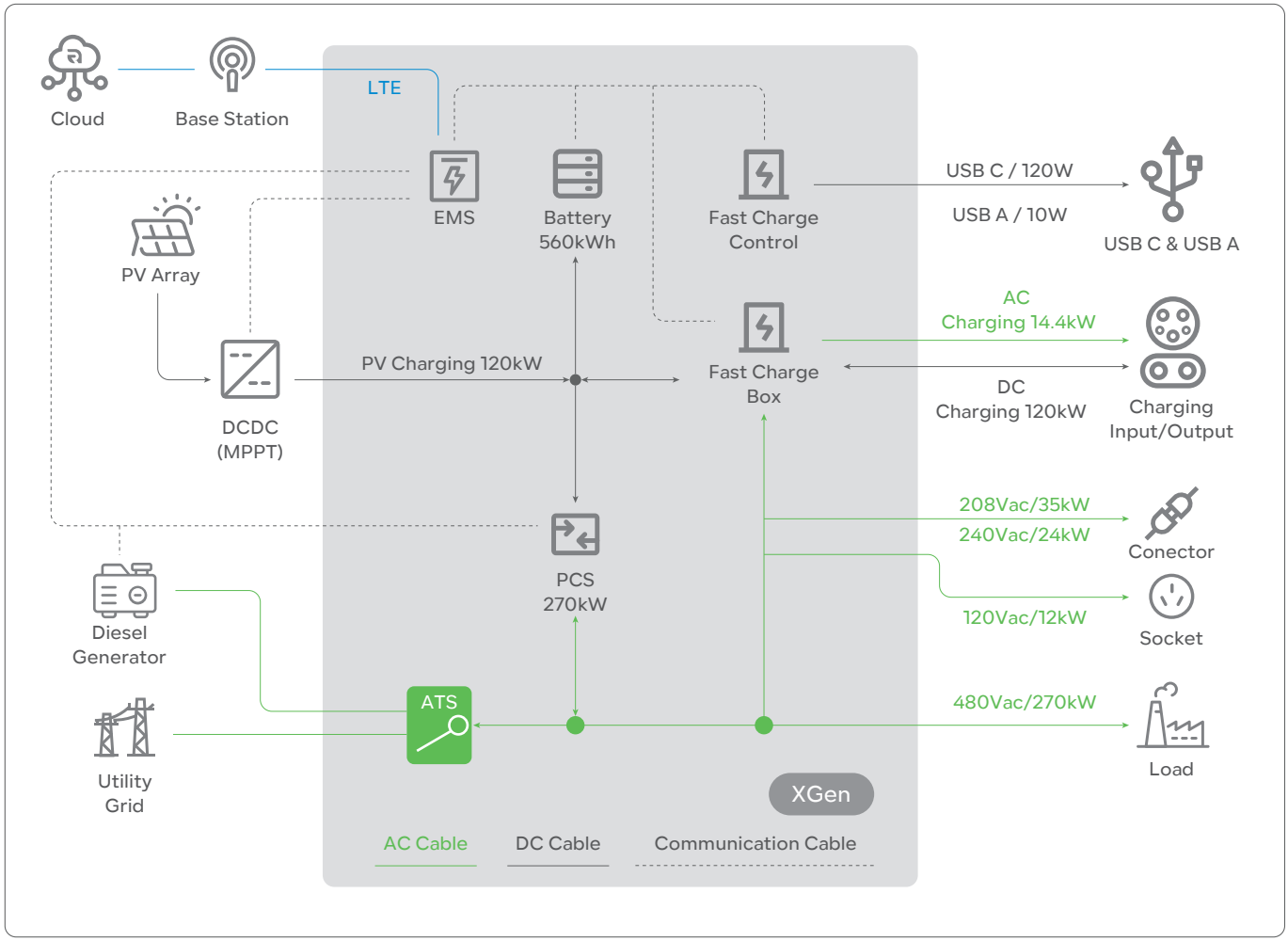
Application Scenario

MINING

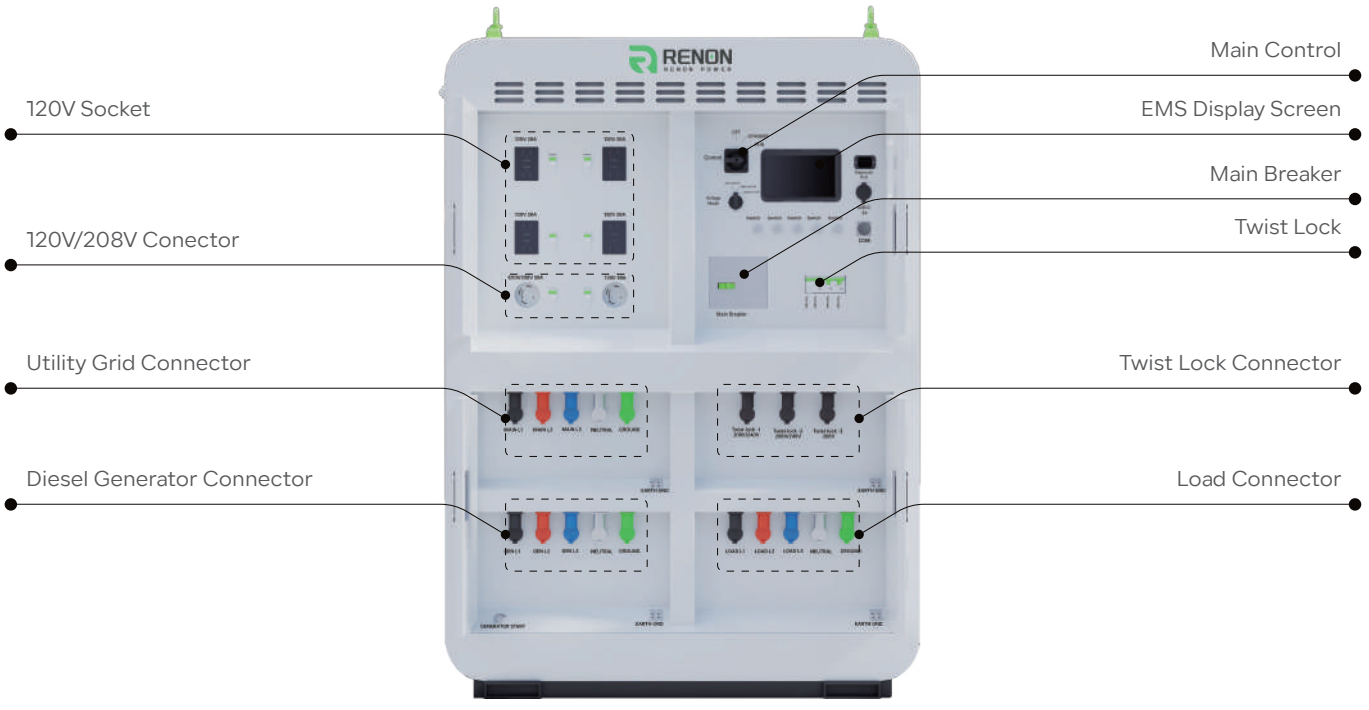
ROAD REPAIR & MAINTENANCE

EARTHQUAKE RELIEF

System Layout



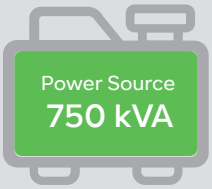
System Interface



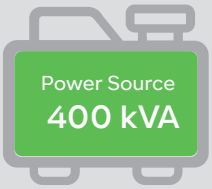
Choosing the right generator solution

Assumed Load for System Design: Peak Power: 600kW, Rated Power: 260kW

If a Diesel Generator is used as the power source:

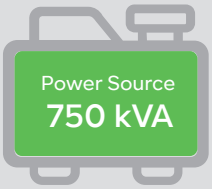


- An initial overpurchase of a high-power DG is required to accommodate the maximum starting current of the motors.
- High fuel consumption is inevitable due to frequent motor startups and prolonged operation at low power.
- Conventional diesel generators do not support capacity expansion.
- High maintenance costs caused by frequent motor starts and significant inrush current.



- Not suitable because of the load's high inrush current.

NORMAL PROPOSAL



- There's no need to purchase a high-capacity DG thanks to the shared power output from the XGen.

&

XGen PROPOSAL

- Reduced upfront investment for a low-power DG.
- Reduced fuel consumption.
- Enable simultaneous operation of multiple DGs.
- Reduce maintenance expenses.

Product Parameter

Battery Energy Storage	
Cell Chemistry	LiFePO4
Nominal Energy (kWh)	560
Voltage Range (Vdc)	750~908.8
Nominal Charging Current (A)	330
Nominal Discharging Current (A)	330
Max. Discharging Current (A)	400
DOD	90%

Mobile Charging	
USB C *1(W)	120
USB A *1(W)	10

PV Input	
Input Power (kW)	120
Input Voltage Ranger (Vdc)	750~908.8

AC Output(400Vac On-Grid)	
Rated Power (kVA)	270
Rated Voltage (Vac)	400
Rated Voltage Range (Vac)	340~460
Rated Frequency (Hz)	50 (-5~5)
AC Connection	3P4W
THDi	≤ 3%
Voltage Ripple Coefficient	≤ 1%
Power Factor	0.99/-1~1

AC Output(400Vac Off-Grid)	
Rated Power(kVA)	270
Max. Power(kVA)	324
Rated Voltage(Vac)	400
Rated Voltage Range (Vac)	340~460
Rated Frequency(Hz)	50 (-5~5)
AC Connection	3P4W
Power Factor	0.99/-1~1

AC Output(230Vac Output)	
Rated Power(kVA)	90
Rated Voltage(Vac)	230
AC Connection	1P2W

EV Charging & Charging ESS(AC Charging)	
Interface Type	Combo (IEC62196-1/3)
Current Rating (A)	63
Rated Power (kW)	14.4
Input/Ouput Voltage (Vac)	230
Input/Ouput Voltage Range (Vac)	207~253
Input Frequency (Hz)	50
AC Connection	1P2W

EV Charging & Charging ESS(DC Charging)	
Interface Type	Combo (SAEJ1772)
Rated Power(kW)	120
Output Voltage(to EV)(Vdc)	150~1000
Input Voltage(to ESS)(Vdc)	750~908.8

Compatible Diesel Generator	
Rated Power(kVA)	≤400
Rated Voltage(Vac)	400
Rated Frequency(Hz)	50

General Parameters	
Product Model	R-XG560270H1-EU03
Parallel Capable	Yes (Up to 6)
Ingress Rating	IP54/NEMA 3R
Operating Temperature (°C/°F)	-20~55/-4~131
Storage Temperature (°C/°F)	-40~65/-40~149
Relative Humidity (RH)	5~ 95%, non-condensation
System Noise (dB)	<65
Cooling	Air-cooling
Fire Suppression System	Included
Altitude	5000m/16404ft (>3000m/10000ft derating)
Certifications	IEC 62619, EN 62109-1, EN 62109-2 EN 61851-1, EN 61851-23, EN 61851-24 EN 62477-1, EN 62909-1, EN 62909-2
Dimensions - W*D*H (mm/in)	1752*4140*2000/69*163*79
Weight (kg/lb)	~5500/~12,125.4

ProControl Base

Cabinet Level Local ESMU

High-end integrated display and control system for commercial and industrial energy storage solutions.

Features

High-Performance Data Processing MCU

Equipped with a powerful processor and ample memory, ensuring fast response to demand-side instructions and efficient data processing.

Independent Smart Local Control

Built-in modes such as self-use, peak shaving, PV priority, grid priority, backup, and battery modes provide convenient local operation. Supports local intelligent monitoring, data curve generation, parameter settings, firmware updates, maintenance report generation, and log recording for simplified after-sales service.

Advanced Graphics and AI Capabilities

Featuring advanced graphics processing and AI capabilities, offering robust performance for enhanced device intelligence.

Flexible Cloud Connectivity

Supports multiple interfaces including LAN, WiFi, and LTE for versatile cloud platform connections based on customer needs.

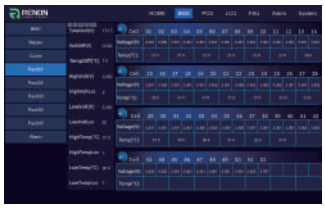
High-Brightness Full-View Touch Display

1280*800 resolution, 45cd/m² brightness, full viewing angle, and three-point capacitive touch screen, allowing easy viewing of system data and settings both indoors and outdoors.

Comprehensive Communication & Control Interfaces

Includes CAN, RS485, RS232, Type-C, USB3.0, LAN, TF card slot, Nano SIM, HDMI, and RTC interfaces, enabling connection to various external devices and sensors for centralized management and control.

Interface Showcase



Parameters

General Parameters	
CPU	RK3568 4xA53@2.0GHz
Memory	RAM: 4GB, EMMC: 64GB, EEPROM:64KB, SSD: 1T(Optional)
GPU	Mail-G52
NPU	Support 1 Tops computing power
OS	Ubuntu 20.04
Brightness	450cd/m²
Resolution	1280*800
Angle	Full viewing Angle
Touch	3 point capacitive screen
Communication Interface	3* CAN, 6* RS485, 1*RS232, 1*Type-C, 1* USB3.0, 4* 1000Mbps, Lan, 1* TF card, 1* Nano SIM card, 1* HDMI, 1* RTC
Control Interface	12* DO, 16* DI, 2* NTC, 1* Buzzer
Wireless Communication	Wifi/BT, 4G, GPS
Ip Rating	IP65
Operating Temperature	-20°C~70°C

ProControl Prime

Station Level Local EMS

Reliable control and display solution for large distributed energy storage systems.

Features

Information Summarization and Monitoring

EMS collects and uploads operational data of distributed energy storage systems for centralized monitoring. It displays system trends, performance metrics, and fault history to help users optimize operations.

Energy Metering and Anti-Reverse Flow Control

EMS handles energy metering and anti-reverse flow control, effectively managing energy flow within the storage system and ensuring stable PCS operation.

Strategy Algorithm Configuration

EMS offers flexible strategy algorithms for customizing energy storage system operations based on specific needs and system conditions. This allows for optimal energy dispatch and management to maximize efficiency and cost-effectiveness.

BMS Data Collection and Display

EMS communicates with Battery Management Systems (BMS) to collect real-time data on battery parameters and displays it graphically. This includes battery health, charge/discharge status, SOC, and SOH.

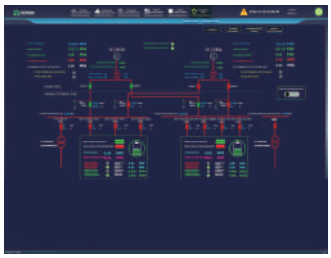
Alarm Generation and Handling

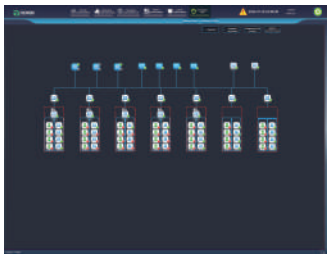
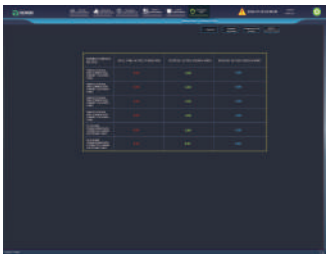
EMS provides a user-friendly tool for creating graphical interfaces of energy storage systems. It allows real-time monitoring and management through topology, status diagrams, and device controls.

Profit Analysis

EMS includes robust profit analysis capabilities for in-depth assessment of energy storage system operational data. This analysis helps users evaluate economic benefits, providing strong support for decision-making.

Interface Showcase



Parameters

General Parameters	
CPU	2U Rack Server
Memory	Intel® Xeon® Gold 5218 Processor 22M Cache, 2.30 GHz, Qty 2
Hard disk capacity	64G
NIC	3*1.2T SAS
PCIE	4 Gigabit LAN cards, 6 PCLe 3.0
Power Supply	slots 550W power supply*2
Chassis Size (mm)	Chassis Specifications: 445*87*746mm
IP Rating	IP20
Operating Temperature	5.0°C~40.0°C (41.0°F~104.0°F)
Operating Humidity (RH)	85%, non-condensation

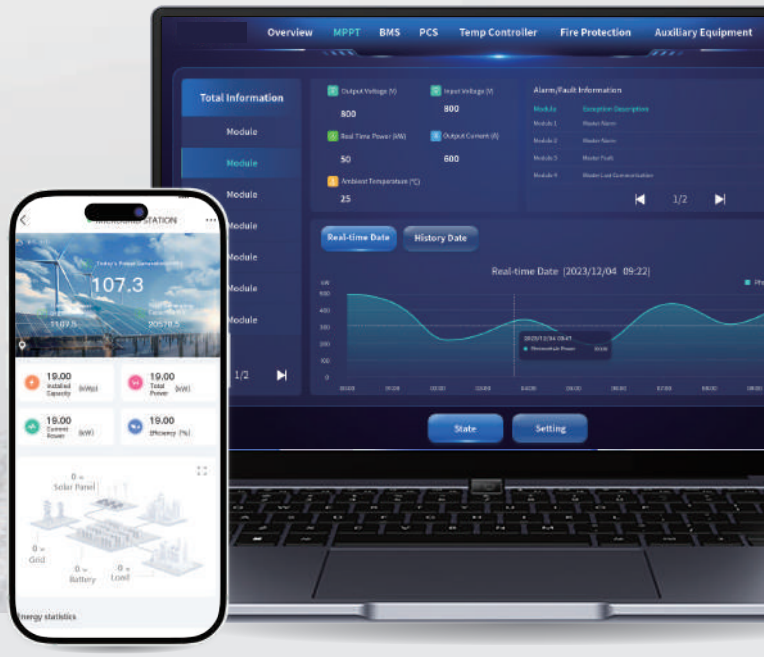
Renon Smart

Cloud Energy Management System

We're Using Smart Power to Simplify Your Life.

Renon Smart is a comprehensive device management and monitoring solution for national agents, secondary agents, installers and users.

Comprehensive system for managing large-scalepower station and commercial and industrial energy storage systems



Features

Instant Clarity with Remote Data Monitoring and Analysis

Remote data monitoring, automatic curve generation, and big data analysis management make the product operation status clear at a glance.

Enhanced Security with Distributed Architecture and Data Encryption

Distributed architecture deployment and data security encryption ensure that cloud data is more secure and reliable.

Seamless Connections with Intelligent Mall and Trial Applications

Intelligent mall application and new product trial application enable users to contact source manufacturers directly, making product promotion faster and more accurate.

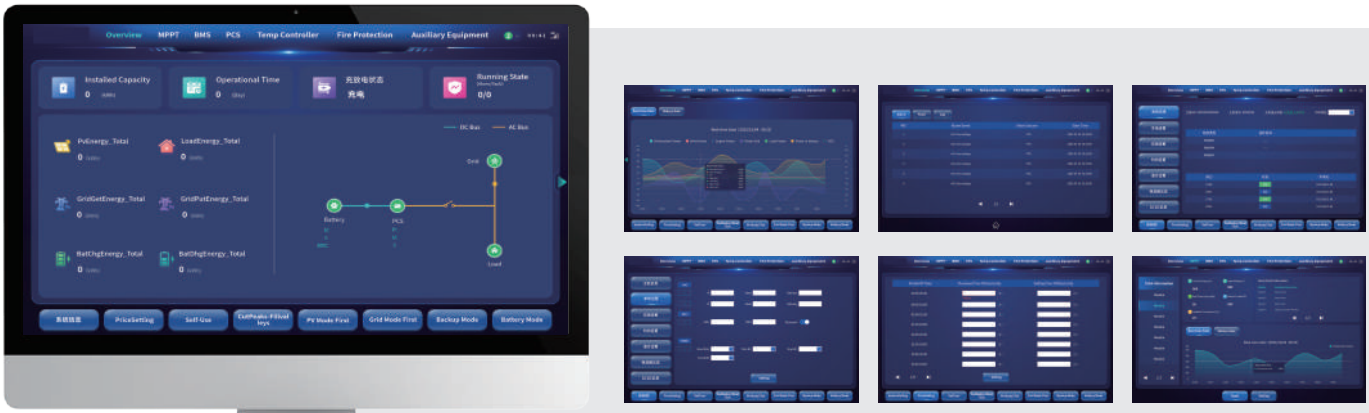
Boost Customer Satisfaction with Remote Firmware Upgrades

Remote firmware upgrading and intelligent operation and maintenance report generation effectively improve customer satisfaction.

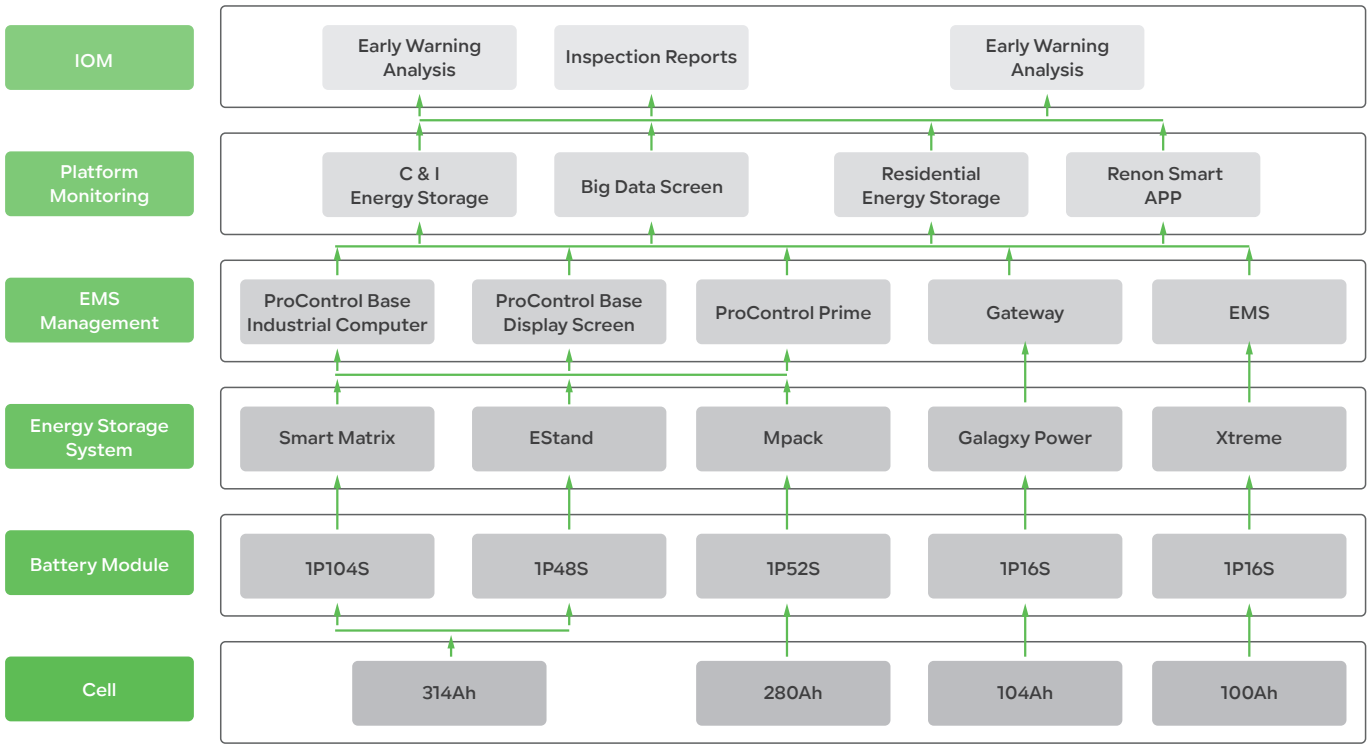
Optimized Channel Construction with a Six-Level Distribution System

The six-level distribution system, from the brand owner to end-users, is more conducive to robust product channel construction.

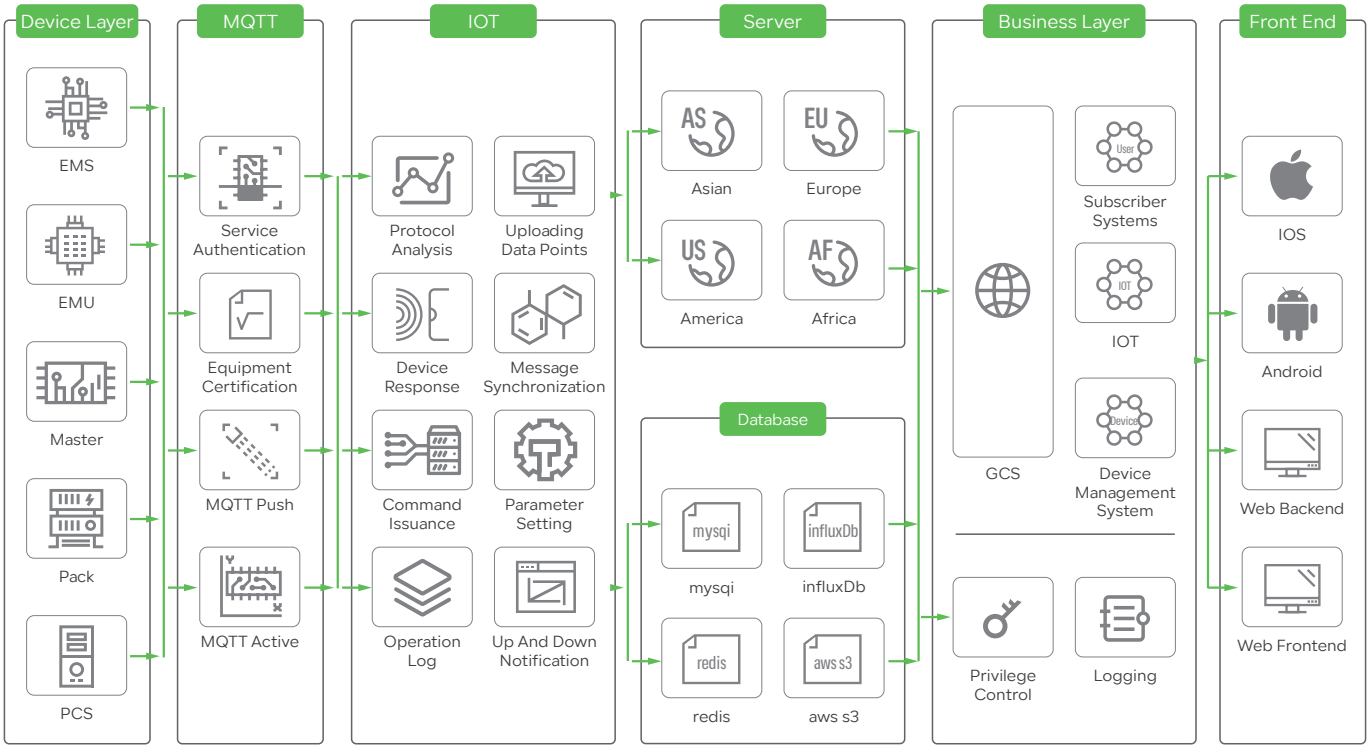
Interface Showcase



Physical Link



Platform Architecture



Installation Cases

Renon Power's global installations of microgrid systems enhance energy efficiency and sustainability,providing reliable power solutions for diverse commercial and industrial applications.

Renon EStation 430A Tokyo, Japan

MPack 233A*5 Austria, USA

ECube 38D Chiba Prefecture, Japan

Smart Matrix A Kitakyusyu, Japan

ECube 215D*9 Togikiken Kanuma, Japan

ECube 15D*4 Saitama, Japan

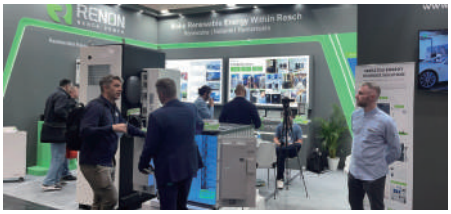
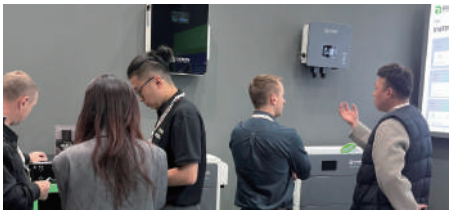
Renon DC ECube 215kWh* Utsunomiya, Japan

Renon DC Ecube 38kWh*4 Gunma prefecture, Japan

Renon Exhibition

At Renon Power, our team is our greatest asset.
We are a diverse group of passionate professionals, united by a shared mission to make green power within reach.

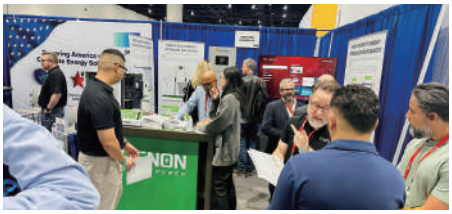
Intersolar 2025 Europe — Germany


RIMINI Expo — Italy

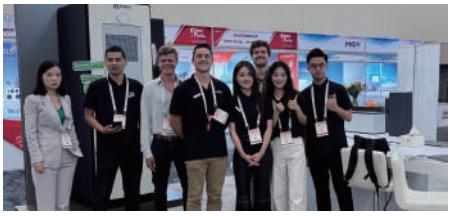


Intersolar 2025 San Diego — The United States


PV EXPO 2025 Tokyo — Japan


RE+ 2024 — The United States

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