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.

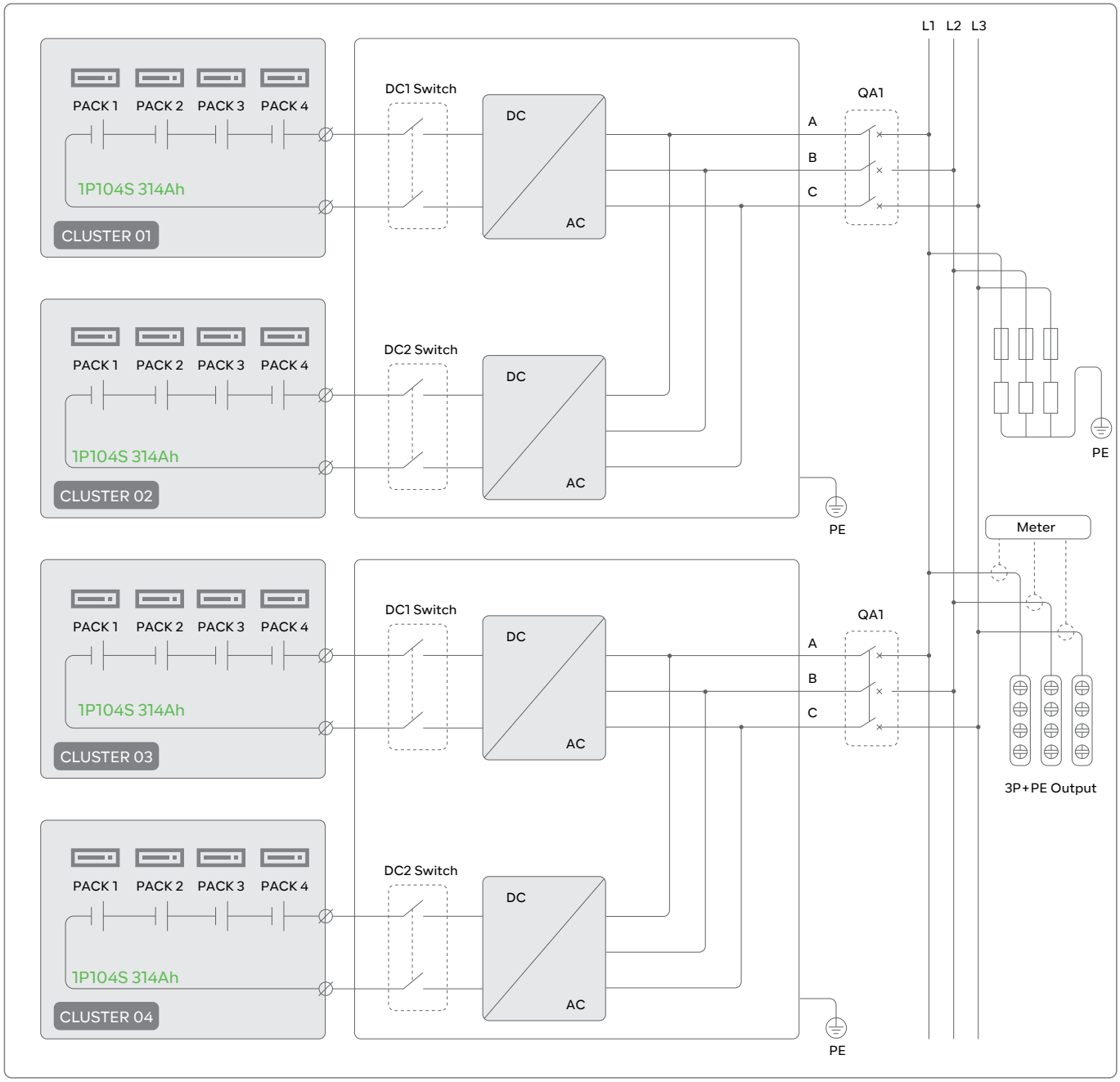
Application Scenario

SUBSTATIONS

ELECTRICITY GENERATING

COMMUNITY

Product Topology

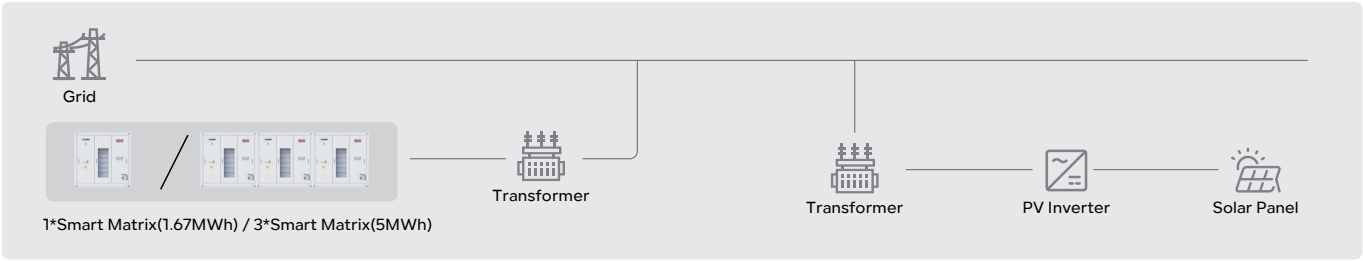


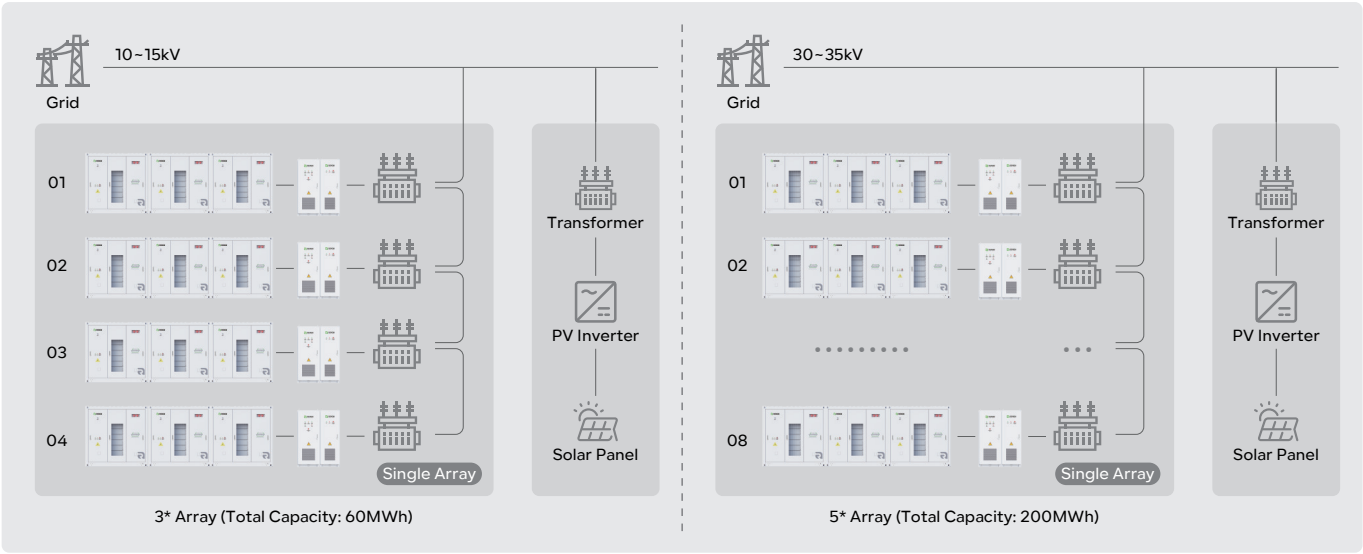
Packaging & Shipping Details

1*Battery System
117.76*96*102.1 in
~33069 lb

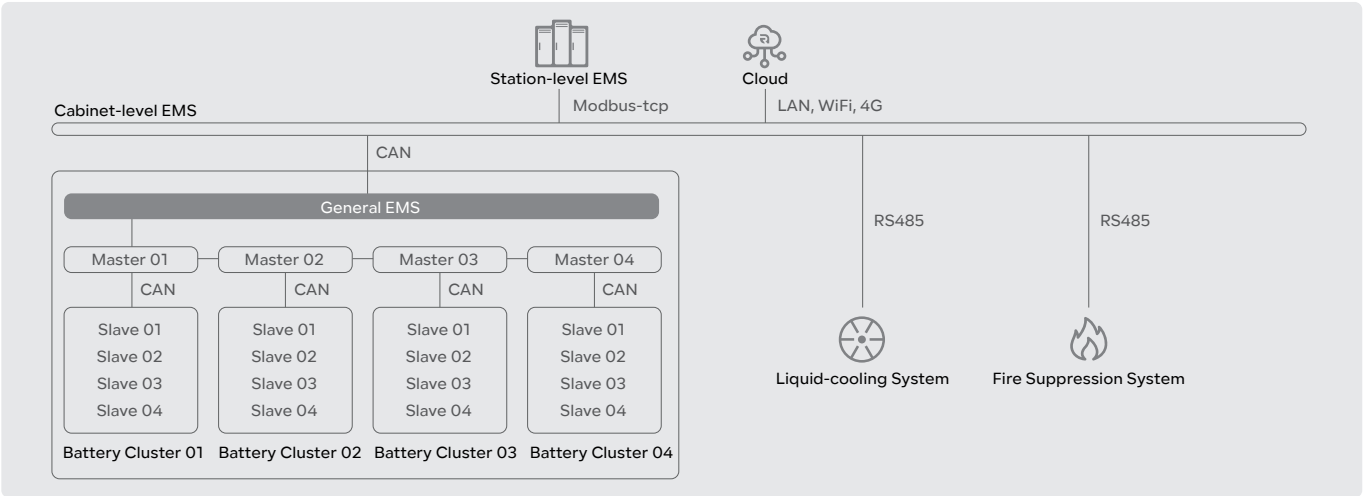
2*Battery System
235.52*96*102.1 in
~66138 lb

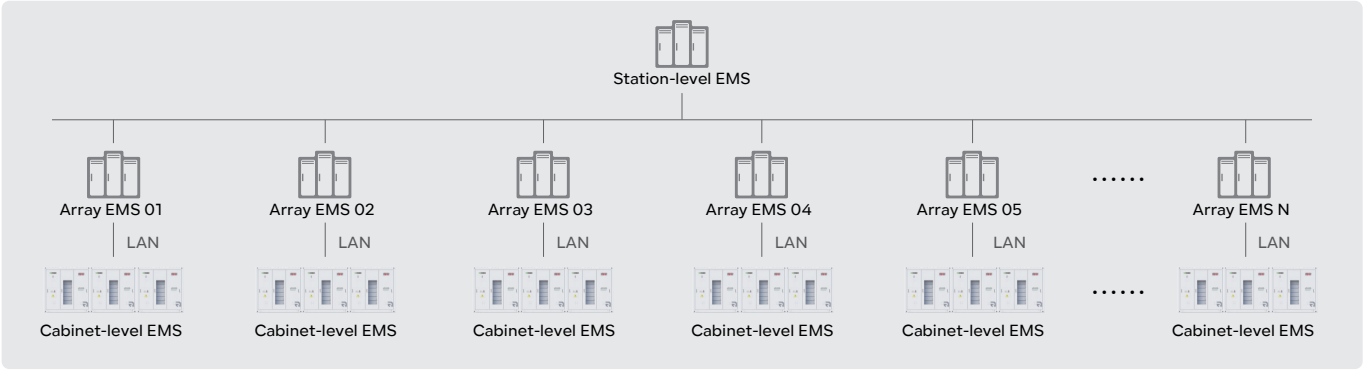
Single / Max. Parallel System Layout





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 Strings	4	8	12
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			
Rated AC Output Power(kVA)	840	1670	2500
Max.AC Output Power(kVA)	860	1725	2580
Rated Output Voltage(Vac)		690	
Output Voltage Range(Vac)		690(-15%~10%)	
Rated Grid Frequency(Hz)		50/60	
AC PF		0.99/-1~1	
THDi		≤3%	

System Characteristic			
Communication Interface		CAN, RS485, Ethernet	
Warranty		3 years free, paid from the 4th to the 15th year	
Certifications		IEC62619, IEC62477, EN61000-6-2/4, UL9540A, UL9540, UN3536	

General Parameters			
Product Model	R-SM1672860A1-US	R-SM33441720A1-US	R-SM50162580A1-US
Dimensions - D*H (in)	96*102.1	96*102.1	96*102.1
Dimensions - W (in)	117.76	235.52	353.27
Battery System Total Weight (lb)	~33069	~66138	~99208
Operation Altitude		4000m / 13000feet (>3000m/10000feet derating)	
Nosie Level@1m		<75dB	
IP Rating		IP54	
Operation Temperature (°C/°F)		-30~55 / -22~131 (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 (kW)	2500
Max. AC Output Current (A)	2902

General Parameters	
Battery Model	R-SC2500ACC01-US
Dimensions - W*D*H (in)	~31.5*86.6*103
Total Weight (lb)	~1653.5
Communication Interface	RS485, CAN, LAN
Specifications Matched for Energy Storage Systems	1.67MWh ESS, Supports Parallel Connection of Up to 3 Units