



Liquid-Cooled C&I Energy Storage System

50kW / 156.5kWh & 100kW / 313kWh

Energy-Efficient and Cost-Effective ESS



Efficient Thermal Management

Effectively reduces temperature rise and improves system temperature consistency for higher efficiency and longer lifespan.

Flexible Configuration

The modular design allows for multiple configurations of DC-DC converters to meet specific power needs and maximize the cost-effectiveness of your investment.

High Reliability

Manufactured in the industry-leading automotive-grade manufacturing workshop for enhanced quality and durability.

Powerful Inverter

Supports scalable up to 300kW, 100% unbalanced load backup, 110% continuous AC overload, remote DG control, and multiple MPPT inputs.

Balancing Friendly Structure Design

Packed with large capacity 314Ah cells, which reduces the number of packs for a more compact battery pack design and improves the internal structural balance issues.

Multi-level Safety Protection

Supports battery-level and cabinet-level fire suppression, flammable gas emission, and explosion-proof design to prevent combustion and ensure safety.

Intelligent Management

The Intelligent Energy Management System (EMS) supports remote performance and status monitoring to enhance system reliability.

Plug and Play

The system is preinstalled in a cabinet. Just plug in and it's ready to operate.

Technical Specifications

System Model		CS100-480/156-U/H		CS100-480/313-U/H	
Battery Specifications					
Rated Energy Storage Capacity	156.5kWh	313kWh	Maximum Charge and Discharge Current	145 A	
Battery Rated Voltage	499.2 V		Per Battery Optimizer Power	62.5 kW	
Battery Voltage Range	436.8-569.4 V		System Working Voltage	820-900 V	
Battery Type	Lithium Iron Phosphate Battery (LFP-314 Ah)		Battery Pack Series and Parallel Connection	1P52S	
Number of Battery Optimizer	1	2	Battery Pack Capacity	52.2 kWh	
Number of Battery Pack	3	6	Enclosure Rating	IP67@Battery Pack	
Hybrid Inverter Specifications					
Inverter Model		CS50KT-U/I		CS100KT-U/I	
PV Specifications					
Maximum DC Power	109.2 kW		156 kW		
Start voltage			195 V		
MPPT nominal voltage/range			550 V / 180 V - 800 V		
Max. input current per MPP tracker			32 A		
Max. short-circuit current per MPP tracker			40 A		
No. of PV strings per MPP tracker			2		
No. of MPP trackers	7		10		
AC Output					
Rated AC Power	50 kW		100 kW		
Max. AC apparent power	55 kW		110 kW		
Nominal AC voltage/range			480V, -15% ~ +10%		
Nominal AC grid frequency/range			60 Hz , 55 - 65 Hz		
Max. output current	66.2 A		132.4 A		
Adjustable power factor			-1...+1		
THDi			<3%		
AC grid connection type* 1			3P3W+PE / 3P4W+PE		
AC Input					
Rated AC Power	100 kW		200 kW		
Max. AC apparent power	100 kVA		200 kVA		
Nominal AC voltage/range			480 V, -15% ~ +10%		
Nominal AC grid frequency/range			60 Hz , 55 - 65 Hz		
Max. input current	120.3 A		240.7 A		
Backup Power (AC)					
Rated AC output power	50 kW		100 kW		
Max. AC apparent power	60 kVA		120 kVA		
Max. single phase power	16.6 kW		33.3 kW		
Nominal AC voltage			277 V (L-N) / 480 V (L-L)		
Nominal AC grid frequency			60 Hz		
Load connection			3P3W + PE / 3P4W + PE		
Max. output current	72.2 A		144.4 A		
THDv			3% (Linear load)		
Load unbalance			100% three-phase unbalanced		
Overload capacity			≤110%: Continues; 110% ~ 120%: 10min; >120%: 200 ms		
On/off grid transfer time			≤16.6 ms		
General Specifications					
Enclosure Rating			IP54 @Cabinet IP66 @Inverter		
Isolation Method			Transformerless		
Power Consumption during Shutdown			<100 W (without transformer)		
HMI			Touch screen		
Relative Humidity			0 ~ 95% (no condensation)		
Noise			Less than 70 dB		
Operating Temperature			-20℃ ~ 55℃ (Derating above 50℃)		
Cooling Method			Intelligent liquid cooling		
Altitude			4000 m (over 2000 m derating)		
BMS Communication			CAN		
EMS Communication			Ethernet / 485		
Cloud Platform			Optional		
Dimensions (W x D x H)	1850 x 1450 x 2450mm (72.83 x 57.09 x 96.46 inch)		@ESS cabinet, 850 x 510 x 1350 mm (33.46 x 20.08 x 53.15 inch) @Inverter		
Weight	Approx. 2400 kg (5291.1 lbs.)		Approx. 3500 kg (7716.18 lbs.)		

Note: All data are based on ROYPOW standard test procedures. Actual performance may vary according to local conditions