

Liquid-Cooled C&I Energy Storage System

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		CS100-480/313-U/H			
Battery Specifications					
Rated Energy Storage Capacity	313 kWh	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)	Number of Battery Optimizer		2	
Battery Pack Series and Parallel Connection	1P52S	Number of Battery Pack		6	
Battery Pack Capacity	52.2 kWh				
Hybrid Inverter Specifications					
Inverter Model	CS50KT-U/I	CS63KT-U/I	CS75KT-U/I	CS100KT-U/I	
PV Specifications					
Maximum DC Power	109.2 kW	124.8 kW	156 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	8	10	10	
AC Output					
Rated AC Power	50 kW	63 kW	75 kW	100 kW	
Max. AC apparent power	55 kW	69.3 kW	82.5 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	83.4 A	99.3 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	126 kW	150 kW	200 kW	
Max. AC apparent power	100 kVA	126 kVA	150 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	151.6 A	180.5 A	240.7 A	
Backup Power (AC)					
Rated AC output power	50 kW	63 kW	75 kW	100 kW	
Max. AC apparent power	60 kVA	75.6 kVA	90 kVA	120 kVA	
Max. single phase power	16.6 kW	21 kW	25 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	91 A	108.3 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&IP67 @Battery pack 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°C ~ 55°C (Derating above 50°C)				
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)	1550 x 1450 x 2450mm (61.02 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. 3500 kg (7716.18 lbs)				

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