



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.

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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