Product Specification

Product Name：SmartBase-125

Product Model：ESS-125K-261-A2

Preparation Date：2025-5-12

1. Product Appearance

1.1. Main Features

a) Modular design, different configurations can be selected to quickly respond to customer needs.
b) Users can choose 100kW and 125kw PCS, and the maximum capacity can be 261kwh, which is cost-effective.
c) Adopt wind-liquid intelligent cooling architecture to reduce energy consumption, improve energy efficiency, and increase the service life of battery cells.
d)Taking into account both cost and safety, two-level fire protection at PACK level and cabinet level is adopted to improve product safety.
e) Self-developed EMS has intelligent remote operation and maintenance capabilities, saving time and cost for operation and maintenance.

2. Technical Parameters

No.	Items	Technical Indicators	Noted
1	Product Form	Outdoor energy storage cabinet	
2	Parallel Capability	Max.10	
3	Rated Energy	261KWh	
4	Cell Type	LFP 314Ah	
5	Battery Cluster Configuration	(1P52S)*5S	

6	Charge And Discharge Rate	0.5P	
7	Cycle Life	≥6000 Cycles	0.5C\25°C、DOD 90%、SOH80%
8	PV Input Power	120KW	
9	MPPT Voltage Range	200-800V	
10	MPPT Quantity	1 or 4 (Optional)	
11	Max PV Input Current	1*200A or 4* 50A	
12	Rated Power	100kW or 125kW	
13	Rated Voltage	380~400V ac	
14	Frequency	50/60Hz	
15	Distortion Rate	≤3%	
16	System Efficiency	≥86%	
17	Operation Mode	ON-OFF GRID、OFF-GRID	
18	Charge And Discharge Switching Time	＜10ms	
20	Wiring Mode	3W+N+PE	
21	IP Rating	≥IP54	
22	Cooling Mode	Liquid Cooling (Pack)，Air Cooling (PCS)	
23	Product Dimension	1560*1400*2180（Without hook） 1560*1400*2236（With hook）	mm
24	Package Dimension	1650*1500*2350（Without hook）	mm
25	Net Weight	About 3 tons	
26	Gross Weight	About 3 tons	
27	Operating Temperature	-20~50℃	＞45℃ Derating
28	Operating Humidity	5%~95%（No condensation）	
29	Noise	≤75dB	
30	Altitude	≤2000m	＞2000m Derating
31	Fire	Aerosol	

32	BMS	GB/T 34131	
33	PCS	Air Cooling	
34	EMS	Support	

3. Components Introduction

3.1 PCS Parameter

No.	Items	Technical Indicators	100kW	125kW
1	DC Side	Voltage Range（V）	580～1000	580～1000
2		Max Current(A)	173	216
3	AC Side（On-Grid）	Rated Power(kW)	100	125
4		Max Power(kW)	120	150
5		Max Current(A)	174	218
6		Rated Voltage	400V	400V
7		Wiring Mode	3W+N+PE	3W+N+PE
8		Rated Frequency	50/60Hz（±5%）	50/60Hz（±5%）
9		Distortion Rate（%）	≤3	≤3
10	AC Side（Off-Grid）	Rated Voltage（V）	400	400
11		Voltage Deviation（%）	2	2
12		Distortion Rate（%）	<3%(Linear load)	<3%(Linear load)
13	Efficiency	Max Efficiency (%)	98.9	98.9
14	System	Protection Function	DC reverse connection protection, AC short circuit protection, grid monitoring, island protection, surge protection	DC reverse connection protection, AC short circuit protection, grid monitoring, island protection, surge protection
15		Isolation Transformer	None	None
16		Cooling Method	Air Cooling	Air Cooling

17		Operating Temperature	-30℃~55℃（>45℃ Derating）	-30℃~55℃（>45℃ Derating）
18		Operating Humidity	0-95%（No condensation）	0-95%（No condensation
19		Noise	≤75dB	≤75dB
20		Corrosion Resistance	C3	C3
21		Altitude	≤2000m（2000m Derating）	≤2000m（2000m Derating）
22		Communication	CAN，RS485	CAN，RS485
23		Protocol	Modbus RTU/TCP	Modbus RTU/TCP

3.2 DCDC Module Parameter

No.	Items	Technical Indicators	Note
1	Rated Power	120kW	
2	Max Power	130kW	
3	Voltage Range	200V~900V	
4	Max Current	200A*1 or 50A*4	
5	MPPT Quantity	1 or 4 (Optional)	
6	Charge Mode	BMS command/three-stage/MPPT	
7	Operation Mode	Constant current, constant power, constant voltage, MPPT	
7	Max Efficiency	98.8%	
8	IP Rating	IP20	
9	Cooling Mode	Air Cooling	
10	Communication	CAN/RS485	

3.3 STS Module Parameter

（≥3 units in parallel require external STS）

No.	Items	Technical Indicators	Note
1	Rated Power	250kW	

2	PCS Side Power	125kW	
3	Rated AC Voltage	400Vac，3W+N+PE	
4	Frequency	50/60Hz（±5Hz）	
5	Rated AC Current	380A	
6	Switch Time	＜10ms	
7	IP Rating	IP20	
8	Cooling Mode	Air Cooling	
9	Communication	CAN	
10	Efficiency	99.5%	
11	Operating Temperature	-40~60℃（>45℃ Derating）	
12	Storage Temperature	-40~70℃	
13	Relative Humidity	0~95%，No condensation	
14	Dimension	444mm*175mm*550mm	

3.4 PACK（1P52S）Parameter

No.	Items	Technical Indicators	Note
1	Cell	314Ah,LFP	0.5P，＞10000 Cycle
2	Cell Combination	1P52S	
3	Rated Voltage	166.4VDC	
4	Rated Energy	52.2496kWh	0.5C,25±2℃, BOL
5	Operation Voltage	145.6V ～ 187.2V	0.5C,25±2℃ CELL:2.8V～3.65V
6	Rated Charge And Discharge Rate	0.5P	
7	Operating Temperature	-20℃~55℃	
8	Weight	≤340kg	
9	Cooling Mode	Liquid Cooling	50% Ethylene glycol solution
10	MSD	Yes	

11	Number of voltage collection points	⩾52	
12	Number of temperature collection points	⩾52	
13	Pack Cycle Life	⩾6000 Cycle	@25±2℃，90%-DOD，0.5P

3.5 Thermal Management System Parameter

No.	Items	Technical Indicators	
1	Items	Unit	Parameter
2	Cooling Capacity（W20/L35）	kW	5
3	Heating Capacity	kW	2
4	Coolant Type	/	50% Ethylene glycol solution
5	Coolant Flow	L/min	50L/min@100kPa
6	Power Supply Type	V/Hz	220V±20%~1N/50/60Hz
7	Cooling Current	A	8
8	refrigerant	/	R410a
9	Operating Temperature	°C	-30~55°C
10	Communication	/	CAN/RS 485
11	IP Rating	/	IPX4
13	Noise	dB	≤75

3.6 BMU Parameter

No.	Items	Technical Indicators	Note
1	Voltage Sampling	64 channels, accuracy ±3mV, sampling range 0~5V	
2	Temperature Sampling	64 channels, accuracy ±1°C, sampling range -40~125°C.	
3	Passive Balancing Current	⩽300mA	
4	Communication	CAN/Daisy Chain	

3.7 BCU Parameter

No.	Items	Technical Indicators	Note
1	Supply Voltage	9~36V，Rated Voltage 24V。	
2	Temperature Sampling	4 channels, accuracy ±1°C, sampling range -40~125°C.	
3	Current Sampling	⩽±400A，accuracy 1%FS	
4	Voltage Sampling	1500V，accuracy±0.5%FS	
5	Insulation Resistance	0~10MΩ，accuracy 15%。	
6	CAN	3 channels	
7	RS485	1 channels	
8	SOC Accuracy	⩽5%	

3.8 Isolation Transformer

No.	Items	Technical Indicators	Note
1	Capacity	125Kva(125KW)	
2	Number of phases	Three	
3	Type	Dry type	
4	Category	Isolation	
5	Insulation class	Class H (180℃)	
6	Operating frequency	50Hz/60Hz	
7	Weight	425kg±5%	
8	No-load voltage	Primary side: 400V Secondary side: 400V	
9	Rated current	Primary side:180.3A Secondary side: 180.3A	

4. Package and Storage

4.1 Package

In order to keep the product in a better protective state during transportation, wooden boxes are used for packaging. The equipment packaging contains the following basic parameters (including but not limited to), which need to be checked according to the order requirements:

Items	Note
Model	Product Model
Dimension	Product packaging size
Weight	Weight of the product after packaging

Icon	Face up, place with care, center of gravity, etc.

4.2 Storage

Parameter	Require
Storage temperature (without battery)	-25℃~+60℃
Battery	20℃～30℃
Relative Humidity	＜95%(No condensation）
Altitude	＜3000m

Note: Long-term storage of batteries is not recommended. Long-term storage of lithium batteries will cause capacity loss. After 12 months of storage at the recommended storage temperature, the irreversible capacity loss is generally 3%~10%. The total storage and transportation time of the battery pack shall not exceed 8 months (calculated from the time of shipment). If it exceeds 8 months, recharging and SOC calibration are required, and the SOC must be replenished to at least 50%. Failure to recharge as required may affect the performance and service life of the battery.