



Energy Expert to Global ESS Users



Liquid Cooling BESS

3.4MW/2 × 3.4MWh





Product Description

The product consists of 1 battery container, BMS, TMS (thermal management system), and firefighting system. The battery cell is the basic battery unit. The BMS collects the operating data of the cells, packs and racks, and communication devices. The TMS controls the cooling and heating of the entire battery rack system. And the firefighting system manages the fire alerting and extinguishing for the entire battery system.



Operation Environment Requirements

项目 Parameters	参数值 Values
1 Storage Environment Temp.	-30~60°C
2 Operation Environment Temp.	-25~55°C
3 Operation Environment Humidity	RH≤95% 无凝露 w/o condensation
4 Operation Altitude	≤3000m, >3000m 降额使用 ≤3000m, output derated when altitude >3000m



Battery Container

NO. Component	数量 Qty.	备注 Note
1 Battery Container	1	单项包含 1.1-1.3 Including 1.1-1.3 below
1.1 Battery Cluster	8	1P416S
1.2 Thermal Management System (Chiller+Water Pipe)	1	包含制冷模式、加热模式、自循环模式、待机模式 Multi-TMS modes: cooling, heating, self-circulation and standby
1.3 消防系统 Firefighting System	1	烟雾传感器、温度传感器、全氟己酮灭火装置 Smoke sensors, temperature sensors, perfluoro extinguisher
2 BMS	1	
3 变流升压系统 Power Conversion and Transformer	1	
4 EMS	1	



Technical Data Sheet

项目 Parameters	参数值 Values
电芯 The Cell	
1 电芯类型 Type	磷酸铁锂 LFP
2 电芯规格 Specification	3.2V/280Ah
3 额定倍率 Rated C-Rate	0.5CP
4 最大倍率 Max C-Rate	1.0CP
5 循环寿命 Life Cycle	6000 times@25°C、0.5CP
6 日历寿命 Life Span	20年 20 years
电池模组 Battery Module	
7 组合方式 Serial Configuration	1P52S
8 额定容量 Rated Capacity	280Ah
9 额定电压 Rated Voltage	166.4V
10 电压范围 Voltage Range	145.6~189.8V
11 额定能量 Rated Energy	46.592kWh
12 额定倍率 Rated C-Rate	0.5CP
13 最大倍率 Max C-Rate	1.0CP
14 PACK内电芯温差 Cell Temp. Deviation in PACK	≤2°C
电池簇 Battery Cluster	
15 标称电压 Nominal Voltage	1331.2V
16 电压范围 Voltage Range	1164.8~1518.4V
17 额定能量 Rated Energy	372.736kWh
18 额定倍率 Rated C-Rate	0.5CP
19 最大倍率 Max C-Rate	1.0CP
电池舱系统 Battery Container	
20 额定能量 Rated Energy	3354kWh
21 DC侧系统效率 DC System Efficiency	> 0.93
22 额定电压 Rated Voltage	1331.2V
23 电压范围 Voltage Range	1164.8~1518.4V
24 额定倍率 Rated C-Rate	0.5CP
25 最大倍率 Max C-Rate	1.0CP
26 工作环境温度 Working Environment Temp.	-30°C~55°C



项目 Parameters	参数值 Values
27 存储环境温度 Storage Environment Temp.	-40°C~60°C
28 工作相对湿度 Relative Working Humidity	0~100% (无凝露) 0~100% (w/o condensation)
29 海拔高度 Working Environment Altitude	不高于3000m (超过 3000m 降额使用) ≤3000m (Output derated when altitude > 3000m)
30 冷却方式 Cooling	液冷 Liquid-cooling
31 消防系统 Firefighting System	PACK级消防+水消防+可燃性气体检测+泄爆设计 PACK-Level Fire Protection + Water Fire Protection + Combustible Gas Detection + Explosion Relief Design
32 辅助供电 Auxiliary Power Supply	400VAC/50Hz/ 3/PE
33 系统通讯接口 Communication Interface	CAN, RS485 Ethernet
34 标准认证 Standard Certification	GB36276, IEC62619
35 防护等级 IP Class	IP55
36 尺寸 (宽*深*高) Dimensions (W*D*H)	6058mm*2600mm*2896mm
37 重量 Weight	35 Tons
辅助电源 Auxillary Power Supply	
38 水冷机组电功率 Liquid-cooling Unit Power	制冷25kW, 制热10kW Cooling 25kW, Heating10kW
39 电压范围 Voltage Range	380~480V
40 BMS功率 BMS Power	1kW
柜体基本参数 Cabinet General Parameters	
41 尺寸(高*宽*深) Dimension (W*D*H)	2896mm*6058mm*2600mm
42 颜色 Color	RAL7035
43 重量 Weight	35 Tons
44 耐腐蚀等级 Anti-corrosion Grade	C5 (ISO12944-2)
45 IP等级 IP Class	IP55
46 电源接线方式 Connection Mode	快插 Fast plug
47 通讯方式 Communication Mode	Modbus TCP
认证 Certification	
48 IEC/EN 62477-1, EN IEC 61000-6-2, EN IEC 61000-6-4, EN50549-2, IEC 62933-5-5, IEC 62619:2022, IEC 63056	



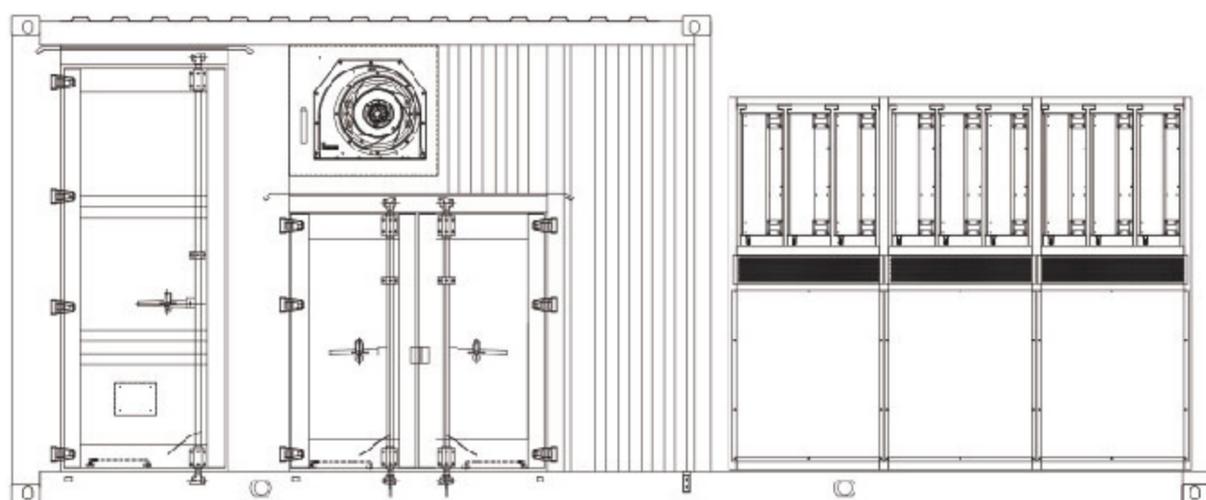
PCS Data Sheet

项目 Parameters	参数值 Values
交流侧参数 AC Parameters	
1 交流接入方式 AC Access	三相三线 3-Phase & 3-Wire
2 额定功率 Rated Power	3400 kW(190kW*18)
3 过载能力 Overload Capacity	1.1倍@长期运转, 1.2倍@1分钟运转 1.1x at constant operation, 1.2 at 1-min operation
4 额定电压 Rated Voltage	800V
5 额定电流 Rated Current	139A
6 额定电网频率 Rated Grid Frequency	50Hz, 与电网频率一致 50Hz, Consistent with grid frequency
7 总电流波形畸变率 (THD) THDi	< 3%
8 功率因数 Power Factor	1 (超前 Ahead) ~1 (滞后Lag) 1 (Ahead) ~1 (Lag)
9 无功功率响应时间 Reactive Power Response Time	小于 30ms (从接收到指令到完全响应) Less than 30ms from reception to full response
10 功率控制偏差 Power Control Deviation	功率大于额定功率20%时, 功率控制精度不超过2% Not more than 2% when the power is more than 20% of rated power
11 直流分量 DC Component	0.5%额定电流 0.5% Rated current
12 高电压穿越功能 HV Ride-through Function	有 Yes
13 低电压穿越功能 LV Ride-through Function	有 Yes
直流侧参数 DC	
14 直流电压范围 DC Voltage Range	1090V~1500V
15 满功率直流电压范围 Full-power DC Voltage Range	1090V~1500V
16 稳压精度 Voltage Regulation Accuracy	±1%
17 稳流精度 Steady Current Accuracy	±3%
保护 Protection	
18 低电压穿越 LV Ride-through Function	有 Yes
19 高电压穿越 HV Ride-through Function	有 Yes
20 防孤岛保护 Anti-islanding Protection	有 Yes
21 交流过流/短路保护 AC Overcurrent/Short Circuit Protection	有 Yes
22 交流过压/欠压保护 AC Overvoltage/Undervoltage Protection	有 Yes
23 交流过频/欠频保护 AC Overfrequency/Underfrequency Protection	有 Yes
24 交流进线相序错误保护 AC Incoming Phase Sequence Error Protection	有 Yes

25	直流过流/短路保护 DC Overcurrent/Short Circuit Protection	有 Yes
26	交流过压/欠压保护 AC Overvoltage/Undervoltage Protection	有 Yes
27	交流过频/欠频保护 AC Overfrequency /Underfrequency Protection	有 Yes
28	交流进线相序错误保护 AC Incoming Phase Sequence Error Protection	有 Yes
29	直流过流/短路保护 DC Overcurrent/Short Circuit Protection	有 Yes
30	直流过压/欠压保护 DC Overvoltage/Undervoltage Protection	有 Yes
31	直流极性反接保护 DC Reverse Polarity Protection	有 Yes
32	过温保护 Overheat Protection	有 Yes
33	功率模块保护 IGBT Protection	有 Yes
34	通讯故障保护 Communication Fault Protection	有 Yes
35	冷却系统故障保护 Cooling System Fault Protection	有 Yes
36	电流直流分量超标保护 Current DC Component Overrun Protection	有 Yes
37	故障录波 Fault Recording	不少于3周波 More than 3 cycles
系统 System		
38	最大转换效率 Max Conversion Efficiency	≥99%
39	功率响应速度 Power Response Speed	< 50ms
40	充放电转换时间 Charge/Discharge Switching Time	< 80ms
41	尺寸 (宽*高*深) Dimension (W*H*D)	7200mm*3000mm*2700mm
42	重量 Weight	65kg × 18
43	外壳防护等级 Ingress Protection Class	IP66
44	噪声 Vibration	≤75dB
45	冷却方式 Cooling Method	风冷 Air-cooling
46	通讯接口 Communication Interfaces	1路RS485、2路以太网、1路CAN 1 RS485, 2 Ethernet, 1 CAN
47	接线方式 Wiring Method	下进下出 Wired from below and out the bottom

变流升压舱示意图

Power Conversion and Transformer



Application Markets



地面光伏电站 Solar PV Power Plant



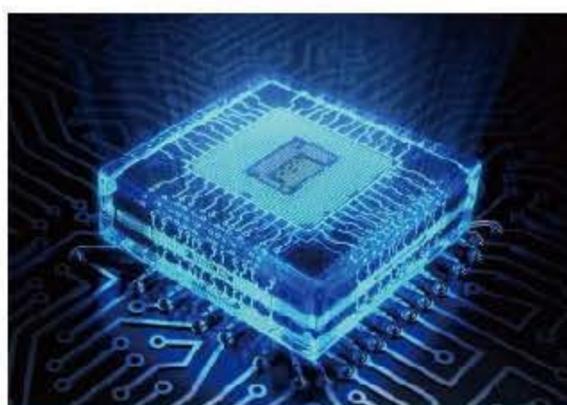
风力发电厂 Wind Power Station



电网侧独立储系统 Power Grid Side BESS



矿区 Mines



半导体工厂 Semi-Conductor Factory



光储柴微网 Micro Grid by Solar PV, BESS and Diesel Generator

Successful Case



2MW/4MWh

收益：

削峰填谷、备用电源、降本增效。

Benefits: peak shaving, backup power supply, cost efficiency.

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