Form

Data form for critical components and material information

Product Service

Applicant name and address..... :	Jiangsu SolarEast Energy Storage Technology Co., Ltd No. 199, Yingzhou South Road Haizhou District 222243 Lianyungang City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA
Manufacturer name and address . :	Jiangsu Solareast Energy Storage Technology Co., Ltd No. 199, Yingzhou South Road Haizhou District 222243 Lianyungang City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA
Name and address of factory / factories..... :	Jiangsu Solareast Energy Storage Technology Co., Ltd No. 199, Yingzhou South Road Haizhou District 222243 Lianyungang City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA
Project-No./Report-No. ..... :	5061723021301-00
Test item description..... :	Rechargeable Li-ion Battery System
Model/Type reference ..... :	PowerCool-LFP5000
Device type ..... :	☐ component / ☐ sub-assembly / ☐ equipment / ☒ system

Ratings ..... :	51.2 Vd.c., 102 Ah
Connection to electrical supply..... :	☐ N/A ☐ Permanent / ☒ Detachable cord set / ☐ Non detachable cord set / ☐ Direct plug-in / ☐ Battery operated / ☐ Others:
Overvoltage category..... :	☐ I / ☒ II / ☐ III / ☐ IV / ☐ N/A
Pollution degree..... :	☐ 1 / ☒ 2 / ☐ 3 / ☐ 4 / ☐ N/A
Class of protection..... :	☒ Class I (PE connected) ☐ Class II (isolated) ☐ Class III ☐ Others: ☐ N/A
Product with functional earthing ..... :	☐ Yes ☒ N/A

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Environmental conditions / Maximum ambient temperature (°C) ..... :	Refer to Table for parameters
Equipment mobility / Classification of installation and use..... :	☐ transportable / ☐ portable / ☐ stationary / ☐ mobile / ☒ fixed / ☐ permanently installed / ☐ hand-held / ☐ body-worn / ☐ building-in / ☐ Others:
Operating conditions..... :	☒ Continuous / ☐ Short-time / ☐ Intermittent
Overall size of equipment (mm) .... :	Refer to Table for parameters
Mass of equipment (kg) ..... :	Refer to Table for parameters
Degree of ingress protection (IEC 60529, UL 50 / UL 50 E) ..... :	IP20
Noise emission [dB(A)] ..... :	N/A
Vibration [m/s²]	N/A
Connection to hydraulic power..... :	N/A
Connection to pneumatic power... :	N/A
Connection to water installation ... :	N/A
Description of special features ..... :	N/A

Additional information for Laser equipment, classification according to IEC/EN 60825-1:
☒ N/A

Type:	N/A	Wavelength:	N/A	Output power:	N/A
Class:	N/A	Pulse duration:	N/A		

Data communication ports: ☒ N/A

Wired ports ..... :	☐N/A ☐USB ☒LAN ☐DALI ☐other:
Wireless ports..... :	☐N/A ☒Wifi ☐Bluetooth ☐NFC ☐4G/LTE ☐ 5G ☐Other:
Data Storage/ Processing ..... :	☐N/A ☒Local ☐Cloud

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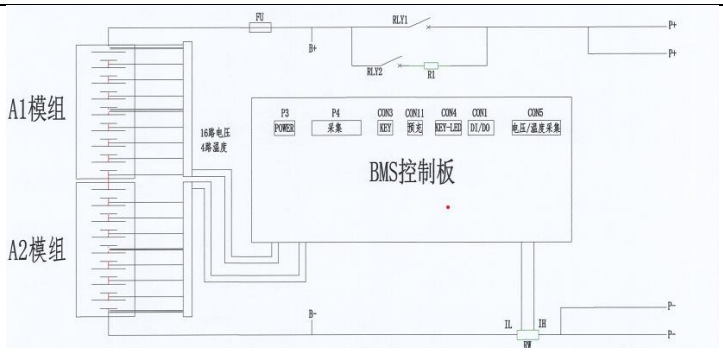
	001: Installation type, 001 stands for Plug-in type for 5kWh, 002 stands for stacked for high voltage 5kWh， 003 stands for stacked low voltage 5kWh; 230415: Production date; - “23” stands for 2023, “24” stands for 2024,……. -“04” stands for April, “5” stand for May,……. -“15” stands for 15th day in one month, “15”stands for 16th day in one month,……. 0000: Production line. 2. +”, “-” are marked near the polarity of the battery system, “+” positive electrode; “-” negative electrode. 3. The code “ Q95710012304150000” can trace the manufacture information of the battery system. This is not the actual code and only for example.
Description of model differences:	N/A
General information / Intended use:	Refer to Table for parameters
Protective earth connection:	Permanent
Drawing(s) / Picture(s):	

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Additional IEC 60601-1 / EN 60601-1 / ANSI/AAMI ES60601-1 / CAN/CSA-C22.2 No. 60601-1: ☒ N/A	
Applied part type ..... :	☐B ☐BF ☐CF ☐Defibrillation-Proof ☒No AP
Software Version..... :	N/A

General product information and other remarks:	
Main label / Warning Markings:	 Remark: 1. Q95710012304150000 Q9: Made in SolarEast; 5: Brand code for SolarEast; 71: Satus for installation of cells in battery system, “71” stands for installation with cells, “72” stands for installation without cells.

	

Table for parameters			
Product name	Rechargeable Li-ion Cell	Rechargeable Li-ion Battery Module	Rechargeable Li-ion Battery System
Type/model	IFP50160116A-102Ah	1P8S/102Ah	PowerCool-LFP5000
Nominal voltage	3.2V	25.6V	51.2 Vd.c.
Rated capacity	102Ah	102Ah	102 Ah
Charging voltage declared by manufacturer	3.65 V	3.6 V for cell 28.8 V for module	3.6 V for cell, 57.6 V for pack
Upper limit charging voltage	3.9 V	3.65 V for cell 29.2 V for module	3.65 V for cell, 58.4 V for pack
Charging current declared by manufacturer	20.4 A	20.4 A	20.4 A
Maximum continuous charging current	50 A	50 A	50 A
Discharging current declared by manufacturer	20.4 A	20.4 A	20.4 A
Maximum continuous discharging current	125 A	80 A	80 A

Discharge cut-off voltage	2.0V	2.8 V for cell 22.3 V for module	2.8 V for cell, 44.8 V for pack
Standard temperature range for charging	0°C to 60°C	0°C to 50°C	0°C to 50°C
Standard temperature range for discharging	-20°C to 65°C	-10°C to 50°C	-10°C to 50°C
Standard charging method by manufacturer	Charge at constant current 20.4A until voltage reaches 3.65 V, then charge at constant voltage 3.65 V till current is 5.1 A.	Charge at constant current 20.4 A until the max cell voltage reaches 3.6 V. Then still for 30 min followed by charging at constant current 5 A until the max cell voltage reaches 3.6 V.	Charge at constant current 20.4 A until the max cell voltage reaches 3.6 V or pack voltage reaches 57.6 V, whichever comes first. Then still for 30 min followed by charging at constant current 5 A until the max cell voltage reaches 3.6 V or pack voltage reaches 57.6 V whichever comes first.
Charging method for internal short-circuit test	Charge at constant current 50A until voltage reaches 3.65 V, then charge at constant voltage 3.65 V till current is 0.05I_t A (5.1 A)	—	—
Dimension	Height: (118.5±0.5) mm Thickness: (49.9±0.5) mm Width: (160±0.8) mm	Height: (129 ± 2) mm Width: (162 ± 2) mm Length: (455 ± 3) mm	Height: (138±2) mm, Length: (560±2) mm Width: (390±2) mm
Weight	(1947±30) g	17 ± 0.5 kg	(45±1) kg
Configuration	—	8S	(8S)2S

Remark:
1. The Rechargeable Li-ion Battery System are used in industrial appliance. Battery system consists of 2 Rechargeable Li-ion Battery Module connected in series.
2. The Rechargeable Li-ion Battery Module consists of 8 approved Rechargeable Li-ion Cell with model no. IFP50160116A-102Ah connected in series.
3. The Rechargeable Li-ion Battery System PowerCool-LFP5000 can be used in parallel.

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Critical components and material information:

Object/part No	Manufacturer/ trademark	Type/Model	Technical Data	Standard	Marks of Conformity
1.Cell (8pcs for one module)	Hefei Gotion High-tech Power Energy Co.,Ltd.	IFP50160116A-102Ah	3.2 Vd.c., 102Ah	IEC62619-2017	UL DK-110904-UL Report No.: RESS-4789845567-001
2.Busbar between cells	Changzhou Helong-sheng New Energy Technology Co., Ltd	Al1060	220 A, 500 V, -40~80°C, 104 mm^2	—	—
3.Busbar of modules	Changzhou Helong-sheng New Energy Technology Co., Ltd	Al1060	220 A, 500 V, -40~80°C, 104 mm^2	—	—
4.Cover plate	KING SCI & TECH CO LTD	JH960HT(M1)(sr)	1.5mm V-0 T_{opr}: -40~80°C,		UL E171666
5.Endplate plastic part	KING SCI & TECH CO LTD	JH960HT(M1)(sr)	2.0mm V-0 T_{opr}: -40~80°C,		UL E171666
6.Insulation sheet for module	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117	0.5mm V-0 T_{opr}: -40~80°C,		UL E199019
7.Insulation sheet for pack	Shenzhen Futureway Technology Co., Ltd	SRL-1140F	2mm, V-0, -40 ~ +150°C		UL E519126
8. NTC (2pcs for one module)	Suzhou Xinliben Electronics Co., Ltd	SK103F6R1000 ST-22#	R_{25} =10KΩ±1%, $B_{25/85}$=3435K±1%, T_{opr}: -40°C～150°C	—	—
9. Copper busbar	Changzhou Helong-sheng New Energy Technology Co., Ltd	Cu	220 A,500 V, -40~80°C, 36 mm^2	—	—
10. Sampling wire	Dongguan Haode Wire & Cable Technology Co Ltd	1332	24AWG, 300V, 200°C Flame class:V-1	UL758	UL E364036
11. LV Sampling connector	Molex	Receptacle Housing: 1729521601 Plug Housing: 0430201600	8.5 A, -40~+105°C, V-0	—	—
12. Pre-charge wire	Dongguan Haode Wire & Cable Technology Co Ltd	1332	18AWG, 300V, 200°C	UL758	UL E364036

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Object/part No	Manufacturer/ trademark	Type/Model	Technical Data	Standard	Marks of Conformity
13. Insulator	Zhejiang Chloe Electronic Co., Ltd	BMC	-40~140°C, V-0	—	—
14. Positive connector (Socket/plug)	Huizhou Futronics Electronic Technology Co., Ltd	FSPC80160Z-25A4/FSPC80160Z-M6A	600 Vdc, 125 A, -40~+125°C, V-0	UL4128	UL-US-2217043-0
15. Negative connector (Socket/plug)	Huizhou Futronics Electronic Technology Co., Ltd	FSPC80160W-25B4/FSPC80160WZ-M6B	600 Vdc, 125 A, -40~+125°C, V-0	UL4128	UL-US-2217043-0
16. Fuse	Xi'an Sinofuse Electric Co., Ltd	RS308-HB-2G	170 Vdc, 160 A, DC170V@50kA	UL 248-1	UL E353337
17. Relay	Zhejiang Innuovo New Energy Technology Co., Ltd	INVE01-100NA/12HT	200 V,100 A, 12 V, -40 ~ +85°C	—	UDEM CE M.2023.206.C83625
18. DC SHUNT	Yueqing Xiqi Electric Technology Co., Ltd.	FL-2 100A/75mV	75 mV, 100 A, 120°C	—	—
19. Enclosure	Jiangsu Ketedi	Q235-A	1.2 mm	—	—
20. BMS	Hangzhou LiDe Communications., Ltd	Model: IBMS-16-M Hardware version: IBMS-16-M-1.0.0.1 Software version: SDK_2_13_0	Overcharge detection voltage for each cell 3.65 V, 58.4 for system. Over discharge detection voltage for each cell 2.70V, 44V for system Charge overcurrent detection current 55 A, Discharge overcurrent detection current: 90 A. High temperature protection: 52°C Low temperature protection: -10°C	—	—
-PCB material	YING PAI TECHNOLOGY	YP-04	130°C, V-0	UL 746A	UL E492700
-AFE (U24)	Texas Instruments Incorporated	BQ79616-Q1	11.0V-80.0V –40°C ~ +125°C	—	—

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Object/part No	Manufacturer/ trademark	Type/Model	Technical Data	Standard	Marks of Conformity
-MCU (U16)	NXP	MIMXRT1051	2.0V-3.6V Topr: -40 ~ 105°C;	—	—
-CAN Communication chip (U2, U18, U37)	NXP	TJA1051T	-40°C ~ 125°C 4.5 V ~ 5.5 V	—	—
-RS485 Communication chip (U7)	TI	THVD1500	-40°C ~ 125°C 4.5V ~ 5.5V	—	—
-WIFI Communication chip (U15)	Espressif	ESP32-WROOM-32D	LCC, 18mm*19.2mm*3.2mm, -40°C ~85°C	—	Component test
-Isolation IC for communication (U36, U5, U17, U12)	2PAI Semiconductor	π122M31	3~5.5V, 3750V, -40°C ~ 125°C	UL 1577	UL E494497
-Isolation IC for communication (U23)	2PAI Semiconductor	π141M31	3~5.5V, 3750V, -40°C ~ 125°C	UL 1577	UL E494497
-Pre-charge resistance (R264)	Zhuhai Qinda Electronic Technology Co., LTD	15W60RJ	15W, 60Ω±5%	—	—
-Voltage sampling resistance (6, R154, R158, R174, R234, R245, R253)	YAGEO	RC0805	1/8W, 510kΩ±0.1%	—	—
-Balanced resistance (17, R221, R222, R225, R226, R229, R230, R233, R235, R238, R239, R242, R244, R248, R252, R255, R258, R262)	EVEROHMS	MA2512	1W, 10Ω±1%	—	—
-NTC on PCB (RT1)	YYFTR	SDNT1608X103F3380FTF	R_{25} =10KΩ±1%, $B_{25/50}$=3435K±1%, T_{opr}: -55°C～125°C	—	—

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Object/part No	Manufacturer/ trademark	Type/Model	Technical Data	Standard	Marks of Conformity
-Memory chip (U53)	HDSC	BL24C512A	T_{opr}:-40°C ~ +85°C Voltage:1.7V to 5.5V	—	—
-Memory chip (U9, U54)	Integrated Silicon Solution, Inc	IS25LP064A-JBLE	T_{opr}:-40°C ~+85°C Voltage:2.3V to 3.6V	—	—
-Power Management IC (U2)	Richtek	RT8068AZQW	T_{opr}:-40~125°C Voltage:2.7V to 5.5V	—	—
-Watchdog (U21)	3PEAK	TPV706S	T_{opr}:-40~125°C Voltage:3V to 5.5V	—	—
-Power Management IC for current and total voltage sampling (U19)	AMS	AS8510	T_{opr}:-40~125°C Voltage:3V to 3.6V	—	—
-Fuse (F5, F8, F9, F10)	Wayon	1206WCF200A063V	2A, 63V	—	—
-transformer (T6)	Vpsc	VPT85BB-01A	5.0V-5.0V, 0.1A -40~125°C	—	—
-Relay (G1)	XIAMEN HONGFA ELECTROACOUSTIC CO LTD	HF3FF-012-1ZS	12VDC 10A/277VAC T_{opr}:-40~105°C	UL 60947-1	UL E 134517
-Optocoupler (T12)	Toshiba Electronic Devices & Storage Corporation	TLP291-GB	V_R=5V -55~110 °C	UL1577	UL E67349

NRTL - Unrecognized Safety relevant (critical) components subject to verification testing: N/A

Object / part No.	Verification tests to be conducted	Laboratory of testing / sampling

Routine Test (Safety, Security, …):

☒N/A, ☐ No requirement in standard, ☐ Non certification mark project

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Model/Type reference:	Tests performed (name of test and test clause):	Test Details:	Test Points:	Test Values:

MHS Test Report History:

Rev	Project No.	History
00	5061723021301	Initial Report

Signature of the Certification Holder:

Name, seal and signature of Certificate Holder:	Jiangsu SolarEast Energy Storage Technology Co., Ltd No. 199, Yingzhou South Road Haizhou District 222243 Lianyungang City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA
Date:	2023-06-25

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