



GESP

48100 ESS Battery
51.2V100AH, 5.1KWH

Battery Specifications			
Cell	Capacity	100Ah	
	Nominal Voltage	3.2V	
	Dimension	49X160X118mm	
	Weight	2.0± 0.1kg	
Battery parameters	Combination Method	16A1P	
	Capacity	Nominal Capacity:100Ah	Minimal Capacity:(0.2C)100Ah
	Voltage	Nominal Voltage:51.2V	Cut-off Voltage:43.2V~57.6V
	Charge	Standard Charge:0.2C(20A) Quick Charge:0.5C(50A)	
	Discharge	Discharge Current : 0~70A	
	Weight	43±1Kg	
	Dimension	482×480×133±2mm(not including IO ports and switch)	
	Operating Temperature	Charge:0℃~45℃	Discharge:20℃~60℃
Parallel options	Communication type	CAN for PCS,RS485 for parallel	
	Parallel Qnt	Up to 6 units	
	Circulation current limiting	Yes,10A	

Technical Requirements

Testing Conditions(unless otherwise specified)

- Temperature:15~35 ℃
- Relative Humidity: 45%~75%
- Atmospheric pressure:86~106Kpa

Electrical Characteristics

ITEM	Testing Instruction	Requirements
Standard Charge	Charge the cell initially with 0.5C Constant Current and then with Constant Voltage at 3.6V till charge current declines to 0.05C	
Nominal Capacity	Measure discharge capacity with 1C discharge current to 2.7V cut-off after standard charge.	≥100Ah
Cycle Life	Measure the capacity after 3000 cycles of standard charge and discharge at 0.5C current to 2.70V cut-off	≥80% of Nominal Capacity
Storage Characteri stics	Capacity after 30 days storage at 25℃ after standard charge Capacity after 7days storage at 60 ℃ after standard charge	Retention capacity ≥90%

Environmental Characteristics

ITEM	Testing Instruction	Requirements
Temperature test	Measure capacity with 0.5C constant discharge current to 2.7V cut-off at each temperature after	70% at 0℃ 100% at 25℃ 96% at 60℃
Constant Temperature /humidity	Keep the battery at 40℃ and 90%RH for 96hrs	Recovery capacity ≥ 85%

Mechanical characteristics

ITEM	Testing Instruction	Requirements
Vibration	After standard charge, fixed the cell to vibration table and subjected to vibration cycling that the frequency is to be varied at the rate of 1Hz per minute between 10Hz~55Hz, the excursion of the vibration is 1.6mm. The cell shall be vibrated for 30 minutes per axis of XYZ axes.	
IFPacting test	After vibration, the battery will be IFPacted 1000±10 times (60±20 times per minute) with the acceleration of 100 m/s2 and pulse lasting time 16ms.	The battery shall not rupture, smoke, catch fire, vent or leak.
Free fall	IFPacting, the battery will be dropped free five times in three mutually perpendicular directions from the height of 1.0m onto a hard board with the thickness of 20mm	

Mechanical characteristics

ITEM	Testing Instruction	Requirements
Short Circuit	After standard charge, the battery located in a fume hood is to be short-circuited by connecting the positive and negative terminals with an external load of less than 50 mΩ till the battery case temperature has returned to near ambient temperature.	
Over Charge Test	After discharge to 2.7V cut-off with 0.5C discharge current, the battery is to be subjected to a 3C charging current. The specified charging current is to be obtained by connecting a resistor of the specified size and rating in series with the battery. The test time is to be calculated using the formula: tc=2.5c/3(Ic)	The battery shall not rupture, smoke, catch fire, vent or leak.
Over Discharge Test	After standard charge, the battery will be connected with external with a maximum resistance load of 0.1Ω for 24hrs until it is completely discharged and the battery case temperature has returned to near ambient temperature.	