PRLR033-4P4S-12.8V100Ah
PRLR-100
V1.0
PR-WI-RDGGS-023

HUNTERHEX®
Smart Green Climate and Energy Solutions

Ver	Name		
V1.4	Hunterhex 1.4		

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1. Scope

2. Specifications

2.1 Battery Specification

No.	Items	Specification	Note
1	Nominal voltage	12.8V	
2	Open Circuit Voltage	13.2V~13.6V	
3	Nominal capacity	100Ah	0.2C
	Min. energy	98Ah	
4	Initial impedance	≤250mΩ	AC 1KHz after standard Charge
5	Charge voltage	14.6V	
6	Discharge cut-off voltage	8V	
7	Standard charge current	20A	0.2C
8	Recommended charge current	50A	0.5C
9	Max. charge current	100A	1C
10	Standard discharge current	20A	0.2C
11	Max. discharge current	100A	1C
12	Peak discharge current	200A	Times <5S
13	Operating temperature	0°C ~ +45°C	Charge 充电
		-20°C~ +55°C	Discharge 放电
14	weight	About 14kg	

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15	Dimension	L*W*H=330*173*216mm	
16	Using	Only allowed in series, the biggest serial number four	

2.2 Common Performance

No	Items	Testing method and determinant standard
1	Charge Performance	The standard charge mode: under the temperature of 23±2℃, charge the battery with the current of 0.2C until the voltage reaches up to 14.6V, then charge with constant voltage until the charge current ≤0.02C， then stop charging.
2	Discharge Performance	When connecting with load, the battery can supply power. Charge the battery with standard charge mode, then rest for 0.5h, then discharge with 0.2C until the voltage is 8V, and the discharge time is required≥5h.
3	High Temperature Characteristics	Standard charge the battery, then put the battery into the constant temperature and humidity oven with 55±2℃,then discharge with 0.2C to 8V. The discharge time is required ≥4.7h（95%） and the battery should no deformation and smoking.
4	Low Temperature Characteristics	Standard charge the battery, then put the battery into the constant temperature and humidity oven with -20±2℃,then discharge with 0.2C to 8V. The discharge time is required ≥2.5h（50%） and the battery should no deformation and smoking.
5	Cycle Performance	Under the temperature of 23±2℃, charge the battery with 0.2C, when the voltage reaches up to 14.6V charge with constant voltage until the charge current ≤0.02C， then stop charging, then rest for 0.5h, then discharge with 0.2C to 8V. Cycle with the above mode, the test shall be terminated when Discharging Capacity＜80% of Initial Capacity in three consecutive cycles. The cycle life is required ≥2000 times.
6	Charged Storage Characteristics 荷电保持能力	Charge the battery with 0.5C, then shift to charge with constant voltage until the voltage reaches up to 14.6V, when the charge current ≤0.02C stop charging; rest under the temperature of 23±2℃for 30 days then discharge with 0.2C to 8V. The discharge time is required ≥1.8h（90%）.

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2.3 Safety Performance

o	Items 项目	Testing method and determinant standard
	Short Circuit	After charge batteries, place at 20℃±5℃ for 1h. Short the battery for 10min, the external circuit resistance should be less than 20mΩ.No explosion, No fire .
2	Vibration Test	When charges fully, the fixed cell to will vibrate the table and the clothing from will change to the circulation vibrational frequency by 1Hz rate each minute between 10 Hz 55Hz, the vibration tour will be 0.38mm. The cell will vibrate in each XYZ axis 90 minutes. No leakage, Capacity recovery rate 90%（standby 3hours）.No explosion, No fire .
3	Over-discharge test	Charge the battery. Place at 20℃±5℃ for 1h, then discharge in maximum current at the same temperature until the battery is protected. No explosion, No fire .
4	Over-charge test	Charge in accordance with the following way. Charge in maximum current for until the battery is protected . No explosion, No fire.

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3. Product schematic

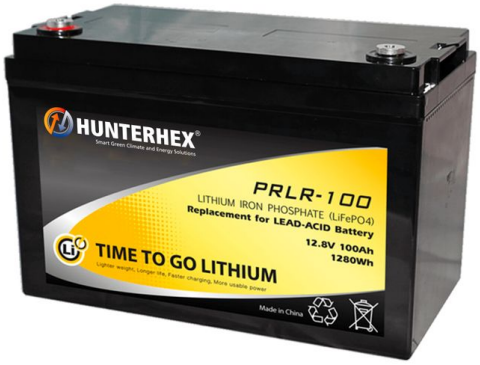

figure 1

4. PCM Electrical Characteristic（adjust）

No.	Items	Standard	Remarks
1.	Over-charge voltage protection	3850mV±50mV	
2.	Over-charge detection delayed time	1.5S（MAX）	
3.	Over-charge voltage protection release	3650mV±50mV	
4.	Over-discharge voltage protection	2300mV±80mV	Protection release：Release load
5.	Over-charge detection delayed time	150mS（MAX）	
6.	Over-discharge voltage protection release	2500mV±100mV	
7.	Continuous operating current	≤60A	
8.	Over-current protection	200A~300A	Protection release: Cut off load
9.	Detection delayed time 检测延迟时间	16ms（max）	

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10.	Bleed StartPoint	3600mV±50mV	
11.	Bleed Current	72mA±10mA	
12.	Idle mode	≤60μA	
13.	Short circuit current protection	/	
14.	Operating Temperature 工作温度	-20℃--60℃	
15.	Storage Temperature 储存温度	-40℃--65℃	

5. Test Requirement

5.1 Standard test condition

Battery Pack to be tested should be new battery pack within one month after shipment from our factory and the battery pack should not be cycled more than five times before the test. Unless otherwise specified, test and measurement should be done under these conditio s

Temperature ： 15℃~25℃

Relative Humidity ： 45%~85%RH

Atmospheric Pressure ： 86kPa~106kPa

5.2 Measuring equipment implementation requirements

1.Dimension Measurement Instrument:

The dimension measurement shall be implemented by instruments with equal or more precision scale of 0.01mm.

2. Battery test system should have current accuracy within ± 0.1%, voltage accuracy within ± 0.5% & time accuracy within ± 0.1%.

3.Temperature measurement accuracy of instruments should be within ± 0.5 ℃.

4.Voltmeter ：

Standard class specified in national standard or more sensitive class, with internal impedance not less than 10 KΩ.

5..Ammeter

Standard class specified in national standard or more sensitive class. Total resistance including ammeter and wire is less than 0.01Ω.

6. Impedance shall be measured by a sinusoidal alternating current method (AC 1kHz LCR). Resistance is not a constant value according to the change of temperature and state of charge, and related to lead length and capacity.

7. All test equipment and measuring instruments should be passed inspection of calibration organization.

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5.3 Appearance Test Standard

There shall be no such defect as scratch, flaw, crack, rust, leakage, or which may adversely affect commercial value of battery.

6. Storage and Shipment Requirement

Item		Criteria
Storage temperature	Short period(less than 1 month)	-10℃~45℃
	Medium period (less than 3 month）	-10℃~35℃
	Long period (more than 3 month)	0℃~30℃
Relative Humidity		≤75% RH
State of Charge		40%~60%

Battery pack must be charged every three months when long term storage, please charge the battery pack with standard charging current for 0.5h~1h to keep 40%~60% state of charge.

7. Warning and Caution

1) Do not connect the battery pack's positive (+) and negative (-) poles reversed to charger or load, Do not connect the battery pack to charger's input power source (AC power supply).

2) do not let the battery pack's terminals (+ and -) contact with unnecessary wire or any metal or stored them together, that may cause the battery pack short-circuit.

3) Do not drive a nail in battery pack, hit the battery pack with a hammer, stamp on or throw the battery pack.

4) Do not disassemble or alter the batteries' outside structure.

5) Do not use the battery pack under blazing sun, otherwise may cause battery pack overheating then catch fire or disable.

6) Do not put the battery pack into fire or heat the battery pack; do not store the battery pack in high temperature environment

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7) Do not submerge the battery pack in water or get wet in the rain, keep the battery in shady and cool place when stored.

8) Do not charge the battery continuously over 24 hour.

9) When charging or discharging the battery pack, if you find any abnormal smell or noise, you must stop the charging or discharging at once, and contact the factory.

10) Then using the battery pack out of range of 0~50 ℃,
the capacity may decrease, that doesn't mean the battery pack was failure.

8. Standard

GB/T 31485 -2015

9. Product liability

Consumers must comply with the requirements of the specifications strictly using the battery. Due to misuse may cause the battery overheating, fire or explosion, for no operation in accordance with the specification as a result of any accident, Hunterhex AB or Hunterhex International Ltd's

10. Contact information

If you have any questions regarding the cell, please contact the following address:

Address：Hunterhex, Östra Stotgatan 7, 291 32 Kristianstad, Sweden. info@hunterhex.com or sales@hunterhex.com

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