

PRODUCT SPECIFICATION

(Customer Code): B035

(Product Name): LiFePO4 Battery Pack

(Model Number): 12.8V100AH -4S1P

(Rev.No): A/0

Prepared by	Approved by
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2. Revision

Revision history

Ver. No.	Date	Correcting Content	Change Reason	Reviser
A/0	2020.03.04	First Edition	/	/

3. Scope

This product manual outlines the specifications and requirements of rechargeable lithium-ion battery products provided by Dawnice Energy LLC

4. Product Specifications

Items	Specification		
4.1 Nominal Capacity	100Ah		
4.2 Nominal Voltage	12.8V		
4.3 Charging Voltage	14.6V		
4.4 Charging method	CC-CV (Constant Current with limited Voltage- Constant Voltage with limited Current)		
4.5 Initial Charging Current	Standard Charge Current		60A
	Max.Charge Current	0°C ~ 10°C	≤30A
		>10°C	80A
4.6 Discharge Current-Standard	100A		
4.7 Max. Continuous Discharge Current	160A		
4.8 Discharge Cut off Voltage -	10V		
4.9 Operating Temperature	Charge		0°C ~ 60°C
	Discharge		-20°C ~ 60°C
4.10 Storage Temperature	1 months		-20°C ~ 45°C
	3 months		-20°C ~ 35°C
	6 months		-20°C ~ 25°C
4.11 External port	M8 terminal		
4.14 Weight	About 11 KG		
4.15 Size	362mm×202mm×267mm		

5. Electrical Characteristics

Unless there is special requirement, The test shall be done under temperature of $20 \pm 5^\circ\text{C}$ and relative humidity of 45~85%.

Items	Test Condition	Criteria
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5.1 Standard Charge	<p>The "Standard Charge" means charging the Battery with initial charge current 0.2C and with constant voltage 14.6V, then constant voltage(14.6V)with floating current taper to 0.02C cut-off (Charger for exclusive use lithium ion rechargeable battery, with an accuracy (+/-0.05V).</p>		Total charge time no more than 8hours
5.2 Minimum Capacity	<p>The capacity means the discharge capacity of the battery, which is measured with discharge current 0.2C with 10V cut-off within 0.5 hour after the Standard Charge.</p>		Minimum Capacity $\geq 100Ah$
5.3 循环寿命 Cycle Life	<p>At the end of standard charging, after 30 minutes of shelving, constant current of 0.2C in the (25±3°C) environment, the next cycle is carried out, after 2000 cycles, use it for 1 day and test the capacity according to the above 5.2.</p>		Capacity $\geq 80\%$ Minimum Capacity
5.4 Internal Impedance	<p>Impedance shall be measured by a sinusoidal alternating current method. Internal resistance measured at 1KHz after 50% charge</p>		$\leq 80m\Omega$
5.5 Voltage	As of shipment		$\geq 12.8V$
5.6 Character of different current	Charge Current	Discharge Current	
	60A	200A	
		95%	
5.7 Storage Characteristic	<p>The battery is charged and discharged using 0.2C at 25±2°C. The discharge capacity is C1. The battery is stored for 28 days in 25 ±5°C after fully charged and then is discharged using 0.2C at 25±2°C. The capacity is defined as C2.</p>		Capacity Retention $C2/C1 \geq 90\%$
	<p>After the test as ①, the battery is cycled for 3 times using 0.2C at 25± 2°C, The maximum discharge capacity is C3.</p>		Capacity recoverable ratio $C3/C1 \geq 93\%$
5.8 Discharge Character	Discharge current	Discharge Degree	

	14A	-20±2°C	0±2°C	25±2°C	60±2°C
		≥50%	≥70%	100%	≥98%

6. Protection Circuitry Function

6.1 Parameter table of protection board

	Testitem		Criterion
6.1.1	Voltage	Charge Voltage	14.6V
6.1.2	Current	Normal current consumption of PCM	Max 50uA
		Max continuous discharging current	100A
6.1.3	Over charge Protection (single cell)	Over charge detection voltage	3.75±0.05V
		Over charge detection delay time	500ms~1000ms
		Over charge release voltage	3.60±0.05V
		Discharge discharge	discharge current>1.0A
6.1.4	Overdischarge protection	Over discharge detection voltage	2.1±0.08V
		Over discharge detection delay time	100~150mS
		Over discharge release voltage	2.30±0.1V
		Release condition	Automatic Recovery
6.1.5	Over discharge current	Discharge over current protection current	100A
		Delay time	500~1500mS
6.1.6	Charging over current	Charging over current protection current	120A
		Delay time	500~1500mS
6.1.7	Temperature protection	Charging high temperature protection temperature	75±5°C

		Discharge high temperature protection temperature	75±5°C
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7. Drawing

7.1 DIM Drawing/External Drawing

L*W*H=362mm*202mm*267mm



8. Cell Safety and Reliability

Single battery cell safety and reliability conform to UL1642 standard.

9. Warranty

As long as the cell is treated in accordance with this Product Specification and / or Handling Precautions and Prohibitions, Supplier warrants that the cell should be free from any defect for a period of 24 months (25°C or less) from the date of shipment or for 2000 cycles, whichever comes earlier.

10. Shipping

The charged capacity of the delivered battery pack is 30%, and the battery transportation meets the standard of UN38.3. The charged capacity of air transport battery pack is less than 30%, and that of marine battery pack is more than or equal to 80%. During transportation, the battery shall be prevented from violent vibration, impact, sun exposure and damp.

11. Storage

11.1 Storage for a long time: If battery is preserved for a long time (more than 3 months); the battery should be preserved at the dry and low temperature.

11.2 If battery is preserved for a long time, the battery should be recharged. more than 3 months must be recharged again., and more than 6 months must be recharged and discharge again; Otherwise it will affect the battery performance.

12. Caution

* Please read the manual carefully before using it in order to ensure proper use of the battery.

* When charging the battery, use dedicated chargers and follow the specified conditions.

* Do not heat or throw battery into a fire 、 water.

* Do not put battery in your pockets or a bag together with metal objects such as necklaces, Hairpins, coins, or screws. Do not store battery with such objects.

- * Do not short circuit the (+) and (-) terminals with metals.
- * Do not place battery in a device with the (+) and (-) in the wrong way around.
- * Do not pierce battery with a sharp object such as a needle.
- * Do not hit with a hammer, step on or throw or drop to cause strong shock.
- * Do not use a battery with serious scar or deformation.
- * Do not use battery with dry batteries and other primary batteries, or battery of a different package, type, or brand.
- * Stop using the battery if abnormal heat, odor, discoloration, deformation or abnormal condition is detected.
- * If liquid leaking from the battery gets into your eyes, do not rub your eyes. Wash them well with clean water and go to see a doctor immediately.
- * Store battery out of reach of children so that they are not accidentally swallowed.
- * When not using battery for an extended period, remove it from the equipment and store in a place with low humidity and low temperature.
- * While the battery pack is charged, used and stored, keep it away from objects or materials with static electric charges.
- * The battery can be used within the following temperature ranges. Do not exceed these ranges.
- * Charge temperature range: 0°C to 60°C.
- * Discharge temperature range: -20°C to 60°C.