



LVTOPSUN-200AH

Battery

Technical

Instructions

Application Areas

- ◆ Solar Power System

Product Model

Fixed Type VRLA GEL battery

Model	Rated Voltage (v)	Capacity	Dimension(mm)				Reference weight (Kg)
			L	W	H	TH	
6-GFM-200	12	200	521	241	220	220	58

Product Features

Maintenance Simple

Made of flame retardant, super ABS shell, using polymer epoxy sealing technology, attractive appearance, firm structure, reliable seal without leakage.

Excellent Performance

- ◆ Plate grid using special alloys, strict control of separator, the electrolyte and impurities of each step , extremely low self-discharge.
- ◆ Plates, converge row, pole etc.using optimal design, the separator resistance is very low, so the battery internal resistance is low, good performance of high current discharge.
- ◆ Using pure Germany GEL technology, its low internal resistance, good performance of high rate discharge.
- ◆ Adding special additives to positive and negative lead paste . High utilization of the active material, overcharge, over discharge acceptance ability is strong.
- ◆ Using the unique combination of labyrinth pole seal structure (patented technology) and welding process, ensure sealed,safe and reliable.

Safe and Reliable

Accurately control of safety valve opening and closing valve pressure , not only release excessive gas caused by wrong operation or overcharge , but also prevent air outside or spark from entering the battery inside causing self-discharge or bursting , high performance, long life.

Working Principle

- ◆ Lead-acid batteries produce reaction in the charge-discharge process as below:

$\text{PbO}_2 + 2\text{H}_2\text{SO}_4 + \text{Pb} \xrightarrow{\text{charge}} 2\text{PbSO}_4 + 2\text{H}_2\text{O}$, Late period of charge, positive precipitates oxygen, negative precipitates hydrogen gas .

Technical Performance

Charge performance

- ◆ Float voltage 13.60V / pc, the initial charging current is not more than 1.05A.
- ◆ Cycle using, the battery with constant current limiting charging, the charging voltage is 14.40V / pc, initial charge current is the same as float use.
- ◆ Supplementary charge: If the battery after long-term storage prior to use, you need to add power.

Discharge Performance

- ◆ Discharge characteristics: with the discharge capacity of the battery discharge current increases, it declines; on the contrary, the discharge capacity increases; discharge capacity of the battery increases with temperature increasing, declines with temperature declines

Self-discharge performance

- ◆ Battery using a unique formula electrolyte additives , normal temperature storage 12 months, more than 90% capacity retention.
- ◆ Battery storage for some time, the open-circuit voltage can be approximated by the remaining battery capacity.

Acceptance

Batteries sent to the user, such as in the following conditions may be accepted.

- ◆ Battery casing, cover and terminal no physical damage, no leakage, climb acid phenomenon.
- ◆ Open circuit voltage difference $\Delta u \leq 0.04\text{V} / \text{pc}$.

Installation

- ◆ Batteries are charged before out of the factory, in the transport installation process to guard against short circuit.
- ◆ Battery voltage is higher, in the installation and maintenance should use insulated tools to prevent electric shock.
- ◆ Connecting cable as short as possible to prevent excessive pressure drop.
- ◆ End connections in the installation and on-battery system, check the total voltage of battery system and positive and negative, in order to ensure the correct installation.

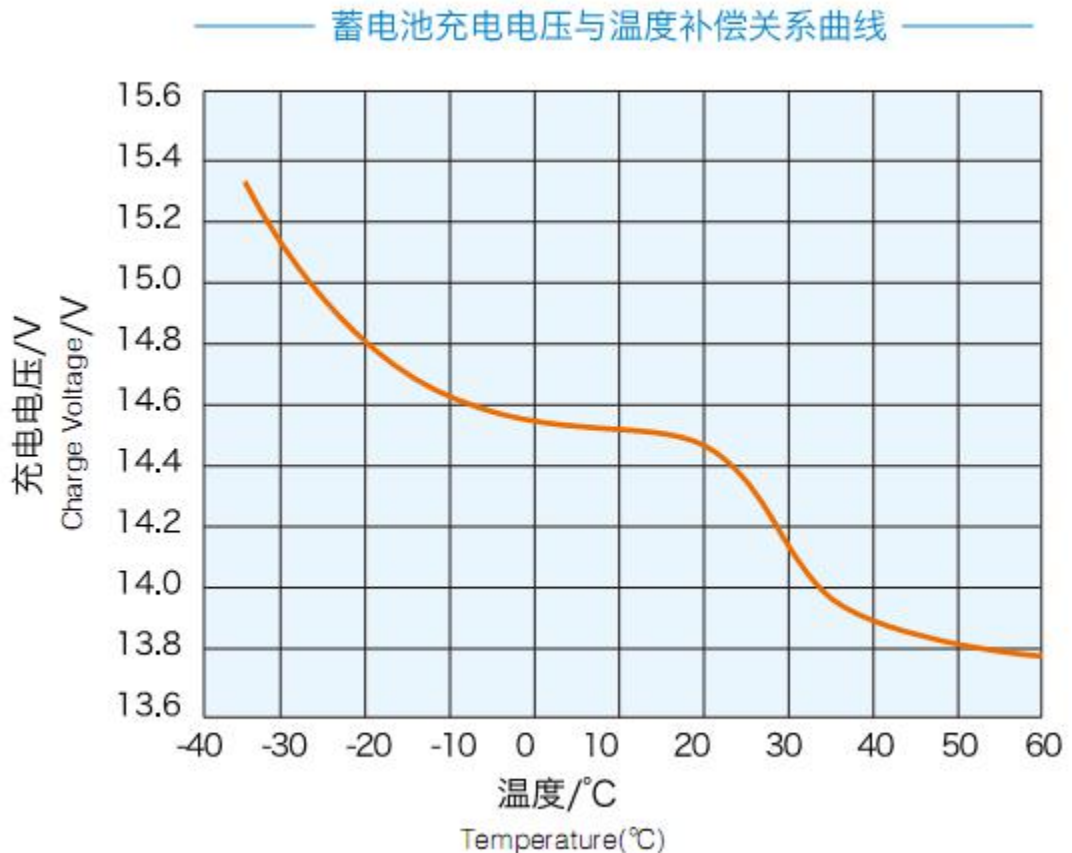
Maintenance

- ◆ Total float voltage exceeds $(13.60 \pm 0.20) \times n\text{V}$, (n refers to the number of cells) within the range should be adjusted, or affect battery life.
- ◆ Checking monthly single battery float voltage, and make a record, such as running for six months,

float voltage difference exceeds 0.5V, you should contact the manufacturer, the manufacturers will deal.

- ◆ Checking once a year whether there is loosening the connecting portion, timely solve.
- ◆ Optimal ambient temperature 15 °C -25 °C get a longer life, the battery can be -40 °C -50 °C conditions.
- ◆ Try to avoid over discharge (discharge voltage is lower than the termination voltage) and overcharge (longer than the charging voltage float voltage), and the discharge should be charged as soon as possible, otherwise affect battery life.
- ◆ Do not use organic solvents and the application of soapy water batteries, avoid using dry cloth that is easy to produce static electricity to wipe the battery.
- ◆ For storage battery, disconnect the battery and charging equipment and the connecting portion of the load and keep the environment cool, dry and ventilated.

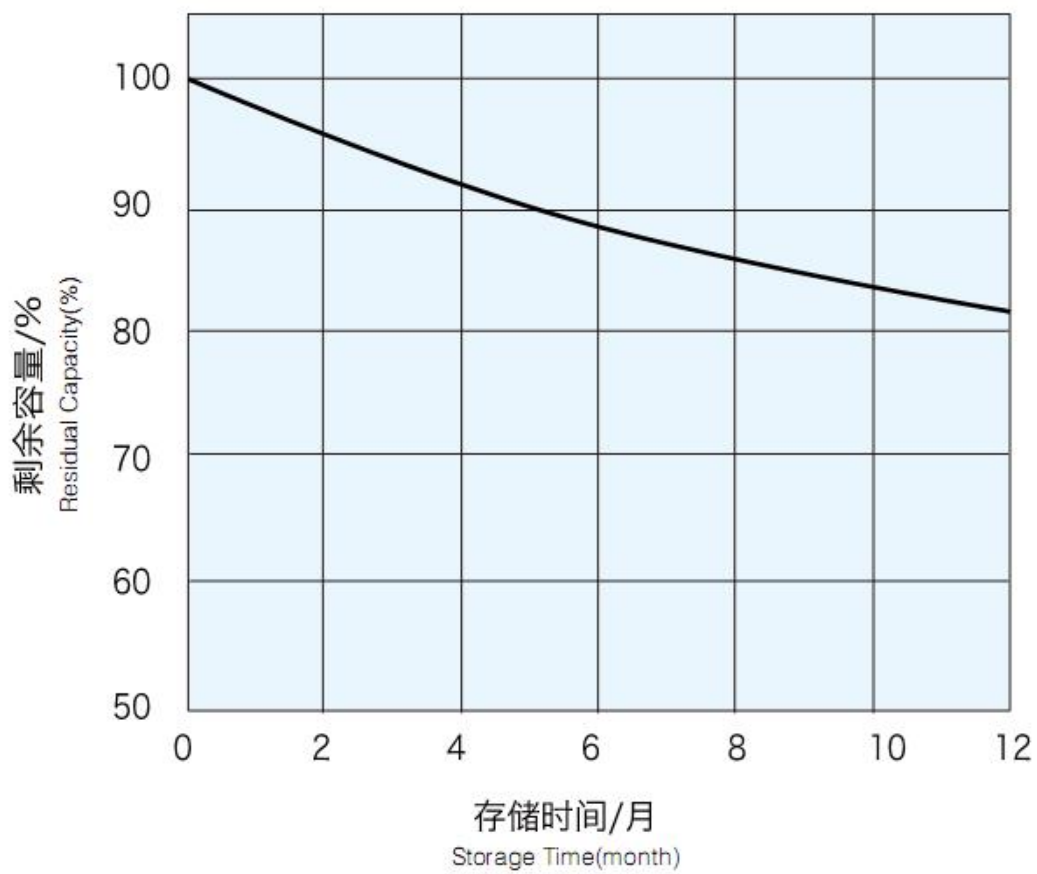
充电电压与温度补偿关系曲线



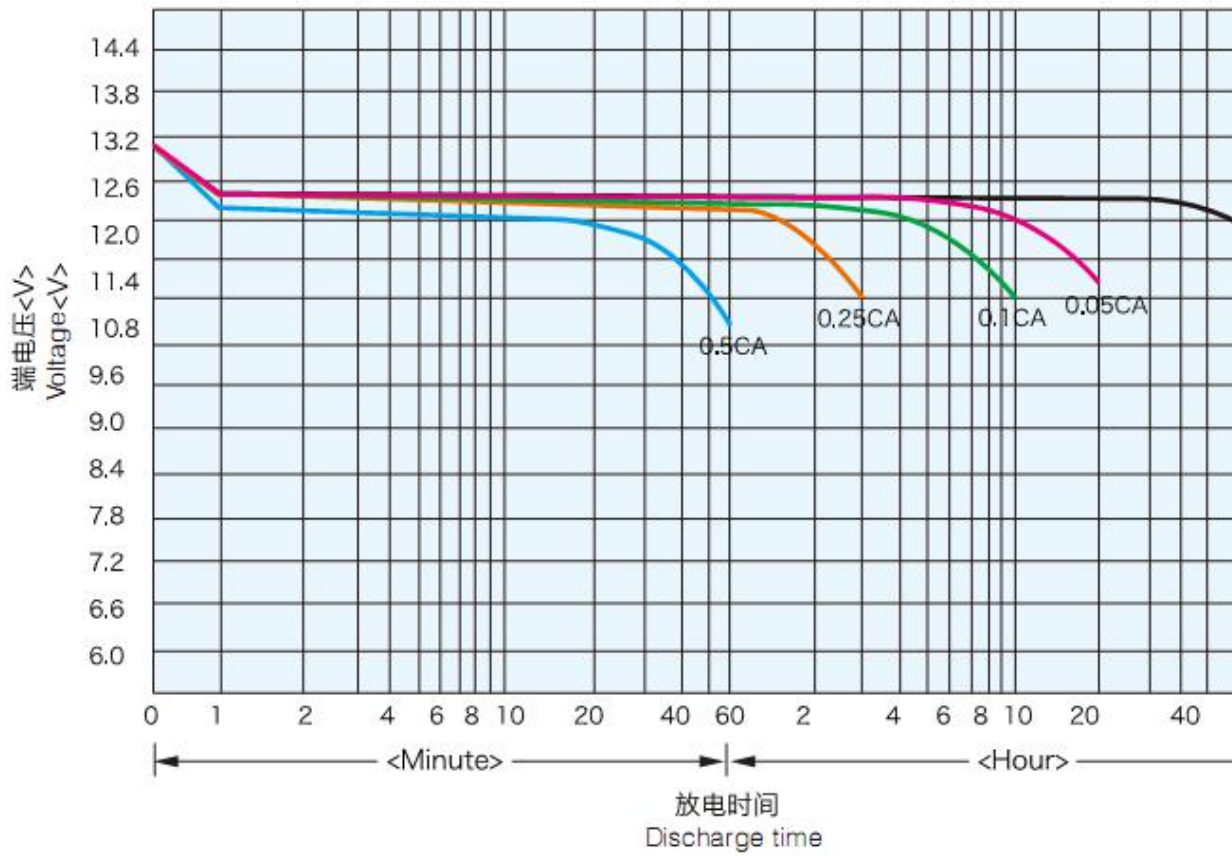
蓄電池充電特性曲線 (25°C)



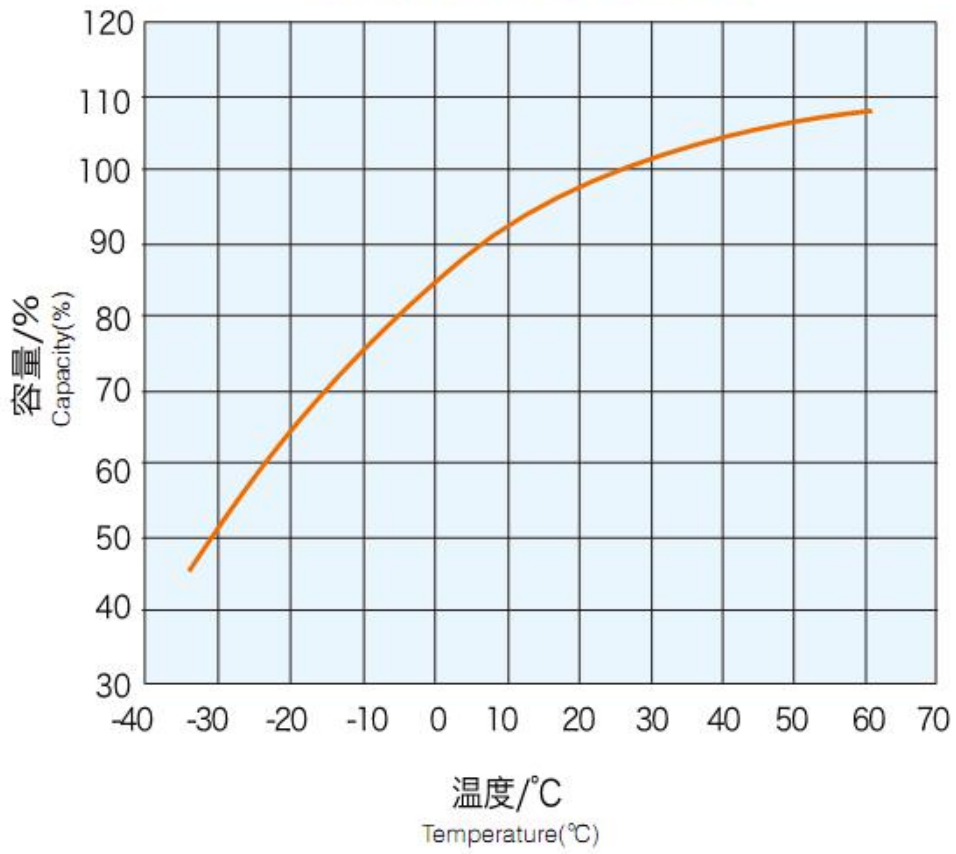
蓄電池儲存自放電特性曲線 (25°C)



蓄電池放電特性曲線 (25°C)



蓄電池容量與環境溫度關係曲線



—— 蓄电池放电深度与循环寿命关系 (25°C) ——

