

*B***UDDY**<sup>®</sup>

阀控式密封蓄电池



# 公司简介

## Company profile

**安徽艾克瑞德科技有限公司** 位于世界自然和文化双遗产风景区黄山的南大门——歙县城西开发区，是由具有20多年铅酸蓄电池研发生产历史的黄山市美达电器有限公司发起并筹资组建的，成立于2014年8月1日，注册资本5060万元。公司厂区紧邻高速公路、高铁、航空，交通便利。工厂占地35000多平方米，建有符合铅蓄电池行业规范的高效生产流水线。是一家集科研、生产、销售、服务于一体化的专业化生产铅酸蓄电池的科技型企业。

公司主要产品有：后备电源用蓄电池、储能用蓄电池、动力用蓄电池、船舶用蓄电池等系列的铅酸蓄电池和胶体蓄电池。系列产品通过通信、广电、太阳能风能、船舶等行业认证和欧盟CE、ROHS认证。

公司秉承“以诚信赢取市场，与客户共创价值”的经营理念，全面推行以“ISO9001质量管理”、“ISO14001环境管理”和“OHS18001职业健康安全管理体系”为核心的管理体系，本着“质量第一、顾客满意”的宗旨，竭诚与新老客户合作，全身心致力于蓄电池行业的发展，把公司建设成为一个规模化、自动化、环保达标、员工安全健康的绿色能源生产基地。科技创新、和谐共进，为顾客提供质优、经济、理想的产品。

**ANHUI ACCORD SCIENCE AND TECHNOLOGY CO., LTD.** is located in development zone, west of the city, She County, south gate of the world-famous, natural and cultural heritage - Huangshan. It is initiated and financed by Huangshan Meida Electric Appliance CO., Ltd. which has 20 years of lead acid battery research and development history. It was founded in August 1st, 2014. The registered capital is fifty million and six hundred thousand yuan. The factory is adjacent to the highway, railway, airport with convenient transportation. The factory covers an area of 35,000 square meters, and has efficient production lines which accord with the specification for lead acid battery industry. It is specialized in high-tech manufacturer of lead acid batteries integrating scientific research, production, sales and services.

There are six main products in factory: The main products in factory are power battery, energy storage battery, EV battery, shipping storage battery and other series of Lead-acid batteries and Colloidal batteries. All products have passed communications, radio and television, solar wind, ships and other industries certification and the European Union ROHS, CE certification.

Adhering to the business philosophy of “good faith to win the market, and customers to create value”, the company has fully carried out the core management system of "ISO9001 Quality Management System", "ISO14001 Environmental Management System" and "OHS18001 Occupational Health and Safety Management". In line with the principle of “Quality First, Customer Satisfaction”, the company wholeheartedly dedicate to new and old customers cooperation as well as the development of the battery industry. We aim to build the large-scale green energy production base with automation, environmental compliance, employee safety and health. Innovating with science and technology, processing together with harmony, we always provide high quality, economic and ideal products for customers.



安全环境 SECURE ENVIRONMENT



厂区环境  
Plant Environment



污水处理系统  
Sewage Disposal System



废气治理系统  
Waste Gas Management

先进设备 ADVANCED EQUIPMENT



冷切铅粉制造系统  
Cold Cut Lead Powder  
Manufacturing System



自动铸焊装配系统  
Automatic Casting and  
Welding Assembly System

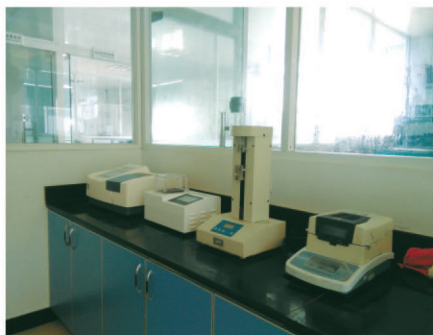


内化成充电系统  
Internalized Charging System

品质控制 QUALITY CONTROL



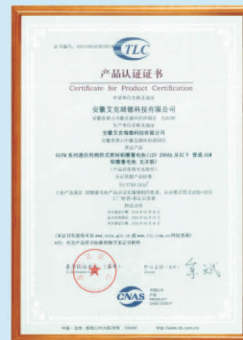
产品检测中心  
Product Testing Center



材料测试中心  
Material Testing Center



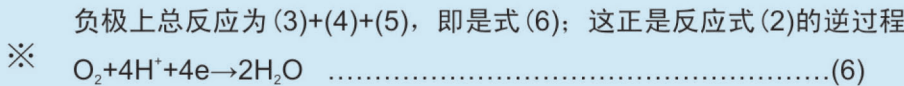
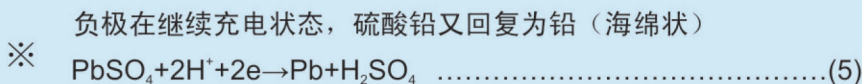
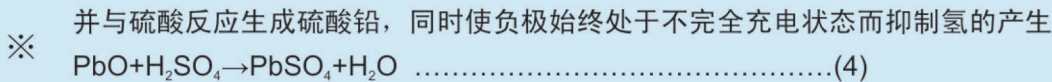
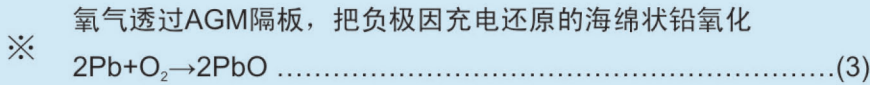
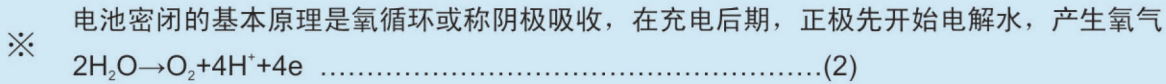
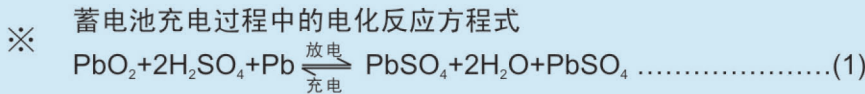
化验分析中心  
Laboratory Analysis Center





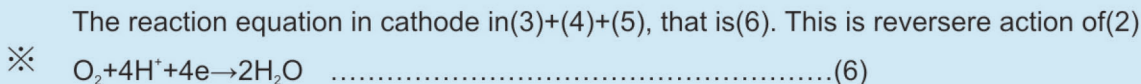
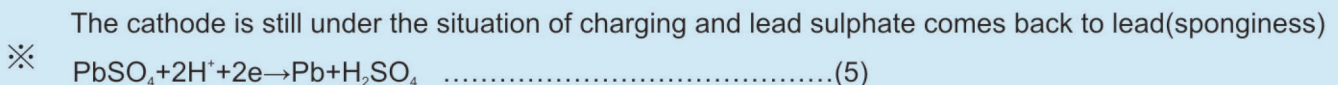
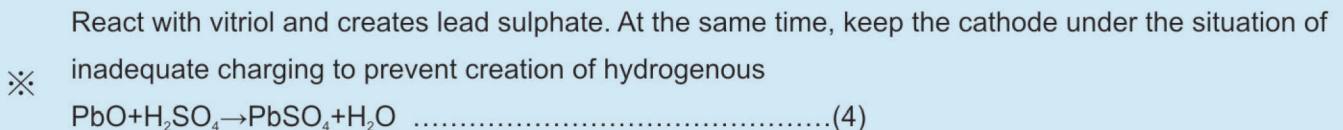
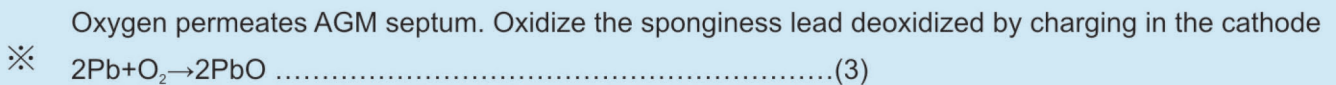
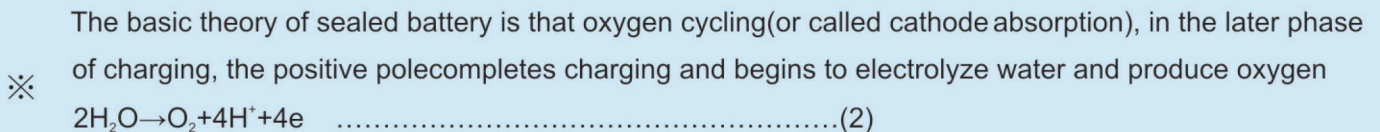


# 阀控式密封蓄电池 VRLA BATTERY



※ 综上反应，正极产生的氧气可在负极形成逆反应还原成水，避免蓄电池内部水的损失，这样BUDDY系列电池设计成可保证上述反应的体系而造成密封结构。

Electrochemical reaction equation of charging and discharging of storage battery



※ To summarize the above reaction, oxygen produced in the positive pole can revert to water in cathode with counter reaction, sealed structure of BUDDY battery series can ensure the above reaction and avoid loss of water in the storage battery.



### ▲ 安全和密封【Safety and Sealing】

采用独特的生产工艺和特殊的结构设计，保证电池使用的安全性和密封性。

Unique production and structure design guarantee the safety and sealing of the battery operation.

### ▲ 免维护【Free of Maintenance】

独特气体再化合系统能将产生的气体再化合成水，吸附式AGM隔膜，在寿命期内无需补充电液。

The special gas re-combination system could turn the produced gas into water through recombination, there fore there is no need to add electrolyte to the ab-sorption method of AGM membrane in the life circle.

### ▲ 自放电低【Low Self-discharge】

使用耐腐蚀性好的特殊铅钙合金制成的板栅，把自放电控制在最小，室温25℃下储存，可半年之内不用补充电。

The grids made of special lead-calcium alloy minimize self-discharge. The battery can be kept for half a year at 25℃ room temperature without recharge.

### ▲ 使用温度范围宽【Adapt to Different Temperature】

电池可在于-40℃~60℃的温度范围内使用。

The battery can be used in a wide temperature range from-40℃-60℃.

### ▲ 安装方便【Easy Installation】

可根据用户的要求立放、卧放方式进行安装。

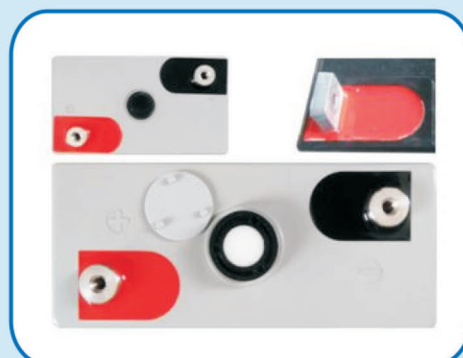
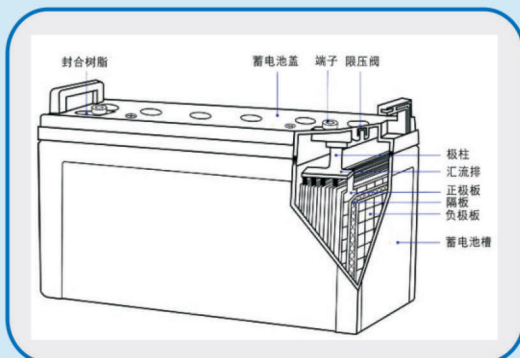
The battery can be installed in either vertical or horizontal direction according to customers' requests.

### ▲ 长寿命设计【Long Life Design】

采用耐腐蚀结构的重型铅钙合金极板，保证了电池的浮充寿命。正常浮充使用寿命为10年以上。

The battery adopts heavy lead-calcium alloy board with anti-corrosive structure, which guarantees it's floating charge life. normal floating charge life is more than 10 years.

电  
池  
结  
构  
图



端  
子  
图



## 12V系列产品规格及技术参数

### Specifications & Technical Parameters of 12V Battery Series

规格型号(S) Specifications and models	额定电压 Rated voltage (V)	额定容量 Rated capacity (Ah/10hr)	外形尺寸 External dimensions(mm)				端子类型 Terminal type
			长 L	宽 W	高 H	总高 TH	
6-GFM-17	12	17	181	77	170	170	φ 10-M5
6-GFM-24	12	24	175	166	125	125	φ 12-M5
6-GFM-24	12	24	165	125	173	173	φ 16-M6
6-GFM-38	12	38	197	166	173	173	φ 16-M6
6-GFM-50	12	50	260	134	204	210	φ 16-M6
6-GFM-55	12	55	228	138	210	216	φ 16-M6
6-GFM-65	12	65	350	165	173	173	φ 16-M6
6-GFM-100	12	100	330	173	220	221	φ 18-M8
6-GFM-100	12	100	407	173	208	232	φ 18-M8
6-GFM-120	12	120	407	173	208	232	φ 18-M8
6-GFM-150	12	150	480	170	239	242	φ 20-M8
6-GFM-200	12	200	522	239	220	226	φ 18-M8
6-GFM-250	12	250	520	268	220	226	φ 18-M8
3-GFM-200	6	200	374	170	212	237	L-M8

注：公司可根据客户要求ODM不同规格的特殊型号蓄电池。

蓄电池产品丝印式样根据国家或行业标准有可能不同，但型号标识统一。以提供实物为准。

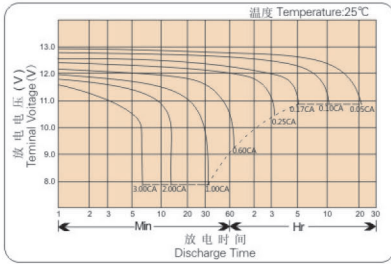
Remark: We are experienced factory for ODM service to manufacture different specifications of the special model battery accord to customers' requirement.

Maybe the pattern of screen printing is different from the national or industrial standards. Model identification is uniform, to supply material objects as the criterion.

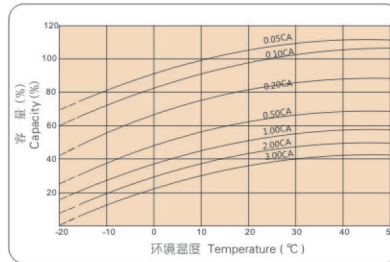


# 12V系列产品特性曲线

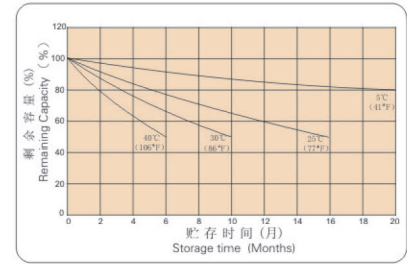
## Characteristics of 12V Battery Series



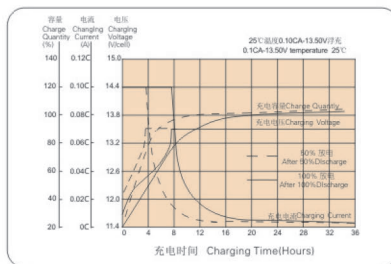
12V系列蓄电池放电特性  
12V Series Battery Discharge Characteristics



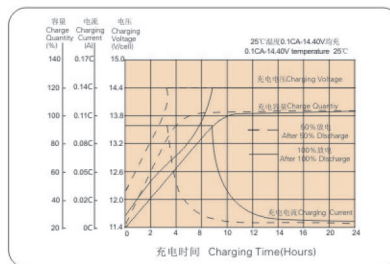
12V系列蓄电池容量与温度及放电电流关系  
Relationship Between 12V Series Battery Capacity and Temperature and Discharge Current



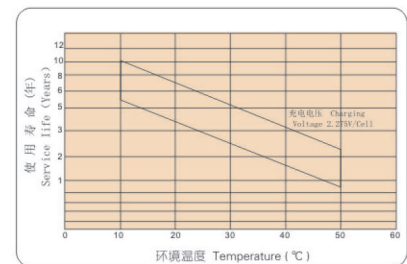
12V系列蓄电池自放电特性  
Self-discharge Characteristics of 12V Series Battery



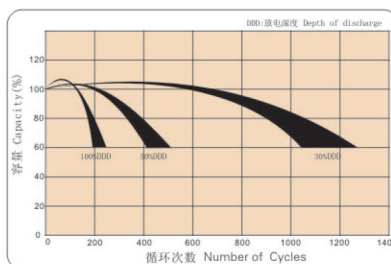
12V系列蓄电池浮充电特性  
Floating Charge Characteristics of 12V Series Battery



12V系列蓄电池均充电特性  
12V Series Battery Charging Characteristics



12V系列蓄电池浮充寿命与环境温度关系  
12V Series Battery Floating Life and Environmental Temperature



12V系列蓄电池循环寿命与放电深度关系  
Relationship Between Cycle Life and Discharge Depth of 12V Series Battery





## 2V系列产品规格及技术参数

### Specifications & Technical Parameters of 2V Battery Series

规格型号(S) Specifications and models	额定电压 Rated voltage (V)	额定容量 Rated capacity (Ah/10hr)	外形尺寸 External dimensions(mm)				端子类型 Terminal type
			长 L	宽 W	高 H	总高 TH	
GFM-100	2	100	174	80	223	252	φ 16-M6
GFM-150	2	150	170	100	206	215	φ 18-M8
GFM-200	2	200	174	112	330	365	φ 20-M8
GFM-300	2	300	176	156	330	365	φ 20-M8
GFM-400	2	400	211	176	330	365	φ 20-M8
GFM-500	2	500	243	174	330	365	φ 20-M8
GFM-600	2	600	302	176	330	339	φ 20-M8
GFM-800	2	800	411	175	330	339	φ 20-M8
GFM-1000	2	1000	479	175	330	339	φ 20-M8
GFM-1500	2	1500	404	355	343	350	φ 20-M8
GFM-2000	2	2000	492	352	341	350	φ 20-M8
GFM-3000	2	3000	712	352	338	357	φ 20-M8

注：公司可根据客户要求ODM定制不同规格的特殊型号蓄电池。

蓄电池产品丝印式样根据国家或行业标准有可能不同，但型号标识统一。以提供实物为准。

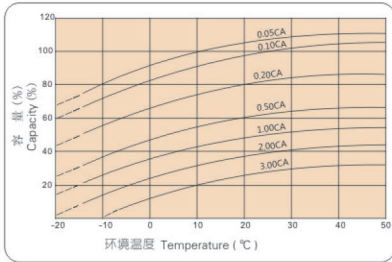
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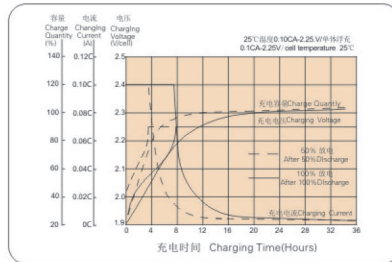


# 2V 系列产品特性曲线

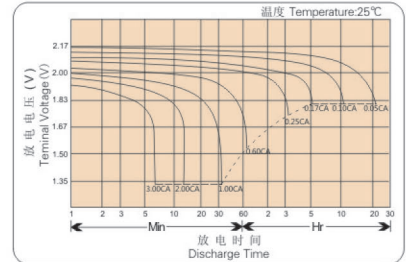
## Characteristics of 2V Battery Series



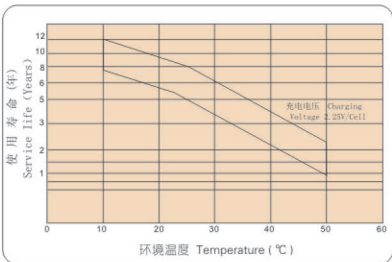
2V系列蓄电池容量与温度及放电电流关系  
Relationship Between 2V Series Battery Capacity and Temperature and Discharge Current



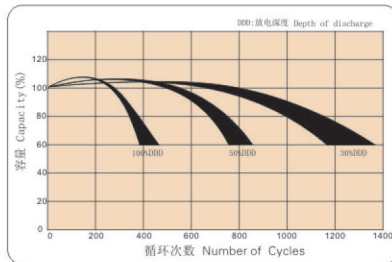
2V系列蓄电池浮充电特性  
Floating Charge Characteristics of 2V Series Battery



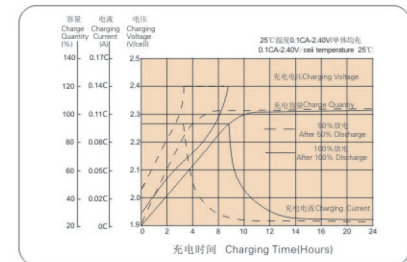
2V系列蓄电池放电特性  
2V Series Battery Discharge Characteristics



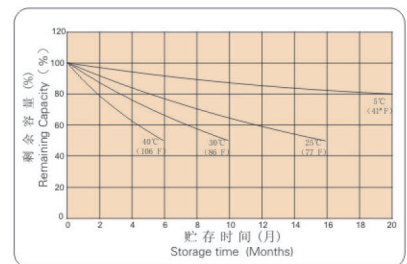
2V系列蓄电池浮充寿命与环境温度关系  
2V Series Battery Floating Life and Environmental Temperature



2V系列蓄电池循环寿命与放电深度关系  
Relationship Between Cycle Life and Discharge Depth of 2V Series Battery



2V系列蓄电池均充电特性  
2V Series Battery Charging Characteristics



2V系列蓄电池自放电特性  
Self-discharge Characteristics of 2V Series Battery

## 胶体蓄电池产品规格及技术参数

### Specifications & Technical Parameters of GEL Type Batteries

规格型号(S) Specifications and models	额定电压 Rated voltage (V)	额定容量 Rated capacity (Ah/10hr)	外形尺寸 External dimensions(mm)				端子类型 Terminal type
			长 L	宽 W	高 H	总高 TH	
6-GFMJ-17	12	17	181	77	170	170	φ10-M5
6-GFMJ-24	12	24	175	166	125	125	φ12-M5
6-GFMJ-24	12	24	165	125	173	173	φ16-M6
6-GFMJ-38	12	38	197	166	173	173	φ16-M6
6-GFMJ-50	12	50	260	134	204	210	φ16-M6
6-GFMJ-55	12	55	228	138	210	216	φ16-M6
6-GFMJ-65	12	65	350	165	173	173	φ16-M6
6-GFMJ-90	12	90	330	172	215	221	φ18-M8
6-GFMJ-100	12	100	407	173	208	232	φ18-M8
6-GFMJ-120	12	120	407	173	208	232	φ18-M8
6-GFMJ-150	12	150	480	170	239	242	φ20-M8
6-GFMJ-200	12	200	522	239	220	226	φ18-M8
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注：公司可根据客户要求ODM定制不同规格的特殊型号蓄电池。

Remark: We are experienced factory for ODM service to manufacture different specifications of the special model battery accord to customers' requirement.





# 胶体蓄电池特点

## Characteristics of Colloid Storage Battery

### 革命性的设计 [Revolutionary Designs]

- ◆ 蓄电池的浮充设计寿命可达16年以上，适合储能、电信、电力和UPS的使用。  
16 years floating design charge life and well-suitable usages in telecommunication systems, electricity systems and UPS.
- ◆ 独有急剧放电保护（符合DIN43534-T.5）。  
Unique quick discharging protection (in accordance with DIN43534-T.5).
- ◆ 胶体电解液可确保电池均恒的放电性能。  
Steady discharging assured by colloidal electrolyte.

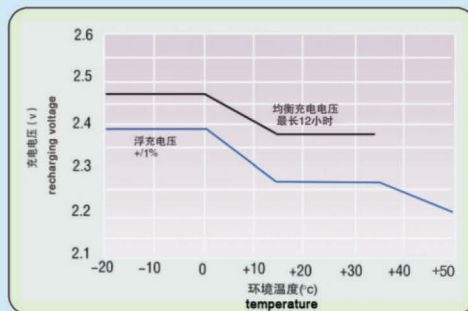
### 先进的生产技术与工艺 [Advanced Manufacturing Technology]

- ◆ 电解液混合于硅胶体中，使电池放电性能更加稳定，亦令其对环境温度变化的宽度提高，以及拥有极低的自放电率。  
Electrolyte mixed in gela tine, the battery discharges steadily with wide adaptation to temperature alteration and much low self-discharge.
- ◆ 铅-钙-锡合金确保极板的稳定性，以及最大程度抑制气体的产生。  
Lead-calcium-tin alloy provides electrode steadiness and utmost gassing-removing.
- ◆ 安全阀具有独特的设计安全性，能获得最高程度品质控制及保证。  
Creative design of valve promises the safest control.

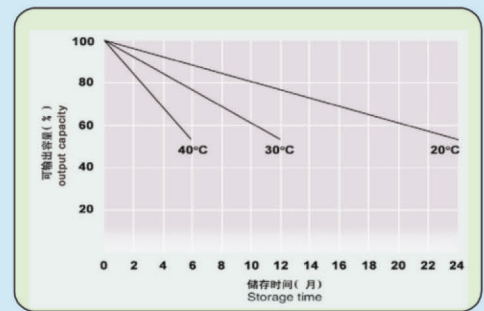
### 高可靠性的保障 [Reliable Safeguards]

- ◆ 密封式设计能确保电池的气体产生率减至最低。  
Sealed-design assures the battery pool of the lowest gassing.
- ◆ 选择了阻燃型设计。  
Incombustible design is built in the battery.
- ◆ 依据 IATA 条款：对航空、铁路和公路运输方式无须作出限制。  
There are no restrictions in transporting the batteries according to IATA clauses.

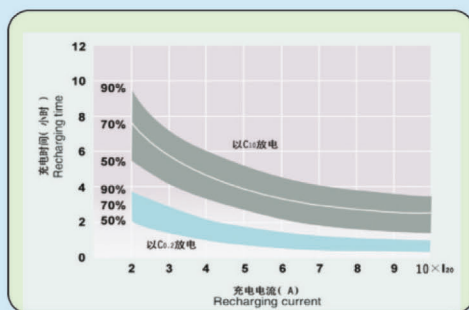
## 特性 Characteristics



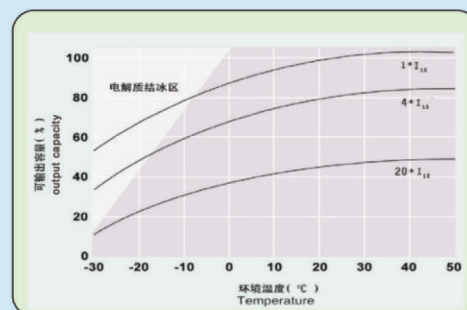
充电电压与环境温度关系  
Relation between charge voltage and environmental temperature



可输出容量与储存期关系  
Relation between electricity output and storage time



回充时间与充电电流关系  
Relation between recharge and charge current



放电容量与温度关系  
Relation between discharge capacity and temperature

### 【安 装】

- 因蓄电池带液荷电出厂，开箱后搬运时请搬蓄电池底部，要轻搬轻放，不可用手握住端子挪动电池，更不可用端子吊装电池。
- 严禁打开排气阀，否则会导致密封不良，影响蓄电池性能及寿命。
- 同一组蓄电池应是同规格的产品，不准将不同厂家制造的产品混合使用。
- 蓄电池应在通风良好的条件下使用，不准将蓄电池安装在封闭的容器或房间内。连接时，请先将蓄电池彼此连接好，然后再与充电设备和负载相连。蓄电池组的正极（负极）跟充电设备和负载的正极（负极）导线连接，并认真检查螺栓螺母是否拧紧（连接线螺栓的扭矩为2V电池为11N.m左右；12V电池为8N.m左右）
- 欲获得预期的使用寿命，请选自动限流稳压充电设备，并具有过压、欠压、过流保护功能及报警装置，当负载变化范围0-100%时，充电设备应达到±2%的稳压精度，波纹电流应严格控制在 $0.1C_{10}A$ 以下。

### 【Installation】

- Handle with care during installation and mounting as the batteries are delivered in charged and moist state. Don't carry the batteries by grasping battery terminals and never hang them by fastening the terminals.
- Never try to open the safety valve as it will lead to poor sealing and affect the battery performance and service life.
- Batteries used in the same string should be the products with the same specifications. Avoid mixed use of batteries with different capacities, ages and makers.  
The batteries should be used in well-ventilated condition. Don't use them in totally closed space.
- When connecting, the batteries should be well connected each other first and then connected with charging system and load. The positive and negative clamps of the charger and the load respectively, make sure that the bolts and nuts are tightened firmly (the torque value of the connecting lead is approx. 11Nm for 2V battery and 8Nm for 12V battery).
- To achieve the expectant service life, select charging system with automatic limitation of current and stability of voltage, and with functions of protecting batteries from overvoltage, undervoltage and overcurrent. In addition, an alarming system is also needed, when the load varies in the range of 0-100% the precision of stabilizing voltage of the charging system should be kept in  $\pm 2\%$  and the ripple current should be strictly limited below  $0.1C_{10}A$

### 【维 护】

- 每月检查一次单只电池浮充电压，并做好记录。
- 每年检查一次连接部分是否有松动现象，及时处理。
- 最佳环境温度 $15^{\circ}C \sim 25^{\circ}C$ 可获得较长的使用寿命。
- 尽量避免产生过放电（放电电压低于终止电压）及过充电（充电电压长时间高于浮充电压），且放电后应尽快进行充电，否则影响电池使用寿命。
- 每放电一次应作好放电及充电记录，记录好时间、电压、电流和温度。
- 蓄电池若需贮存，应断开电池组与充电设备及负载的连接部分并且保持环境阴凉、干燥、通风。

### 【MAINTENANCE】

- The floating charge voltage of single cell should be checked once a month and the records must be kept carefully.
- The joint parts should be checked once a year. The loosed connection should be dealt with as soon as possible.
- The longer service life can be achieved if the batteries are used at the ambient temperature of  $15^{\circ}C \sim 25^{\circ}C$ .
- Neither over discharge (discharge voltage lower than final voltage) nor over charge (charge voltage higher than floating charge for a long time) should be allowed. The batteries should be charged immediately after their discharge of the batteries' life will be adversely affected.
- Time, voltage, current and temperature should be recorded at every time of discharge.
- If batteries need to be stored, please disconnect batteries with charge equipment and the loads. The surrounding should be kept cool, dry and ventilated.



为保证用户的消费权益，保证我公司产品质量信誉，及秉承真诚服务于用户的宗旨，我公司郑重承诺：

In order to guarantee the customers rights and interests and ensure our product reputation, with the motto of sincere service, we hereby promise:

#### 【质量保证】

- ★ 凡我公司售出的蓄电池，在合同规定的保证期内，因电池本身质量缺陷而引起的故障，我方将负责维修或更换。
- ★ 用户对我公司产品质量投诉，我方在半个工作日之内提出处理意见，如情况需要，我方将三天之内派员抵达现场处理。
- ★ 我公司对售出产品质量负责终身维修服务，对用户 provide 永久的技术支持。

#### 【Quality guarantee】

- ★ Within the guarantee period, we are responsible to maintain or replace the storage batteries if the batteries sold by us have malfunction due to insufficiency of the product.
- ★ Upon receiving your feedback about product quality, we will reply you within half working day. If it is necessary, personnel will be sent to the spot to deal with the problem in three days.
- ★ We take charge of the lifelong maintenance and give permanent technological support.

#### 【服务承诺】

- ★ 交货合同签订第二天起计，现货3至7天；期货30天，最短15-20天，特殊情况10天。
- ★ 我公司可派员协同或督导用户进行电池的安装工程（包括调试）。
- ★ 我公司负责向用户提供技术支持，视具体情况，双方可互派员讲授或授培。供方负责对电源维护管理人员进行技术培训，讲解蓄电池使用规则，一般故障处理。

#### 【Service commitment】

##### ★ Delivery

From the next day of the contract signing, for spot cargo, we will deliver goods within 3 to 7 days; for futures, we will deliver goods within 30 days. The shortest deliver time will be 15 to 20 days. Under special situation, the deliver time is 10 days.

##### ★ Installation

We can send personnel to help or superintend battery installation (including debugging).

##### ★ Technology support and training

We are responsible to provide technological tuition. Each side can send personnel to teach or learn the technology. We are responsible for the training of the power maintenance personnel, explanation of service regulations and management of general malfunction.

- 凡我公司生产销售的蓄电池产品，履行生产者责任延伸制，在使用过程中生产的废旧蓄电池均通过销售渠道予以收。
- To fulfill the extended producer responsibility system, the waste batteries produced in the process of using any of our products are recycled.
- 废旧铅酸蓄电池属危险废物，危险废物的处置严格按照国家有关环保法规和政策执行。请勿等同生活垃圾处理！
- Waste lead-acid batteries are hazardous waste. Hazardous waste disposal should be in strict accordance with the national environmental regulations and policies. Do not treat as domestic waste!

UPS不间断电源 Uninterrupted Power Supply  
EPS消防应急电源 Emergency Power Supply  
通信室内外电源 Communication Indoor and Outdoor Power Supply  
广播电视传输网 Radio and Television Transmission Network  
大数据中心 Big Data Center  
智能电网直流电源 Smart Grid DC Power Supply  
船舶起动照明系统 Ship Starting Lighting System  
太阳能风能储能 Solar Energy and Wind Energy Storage  
便携式电源系统 Portable Power Supply System



## 安徽艾克瑞德科技有限公司

ANHUI ACCORD SCIENCE AND TECHNOLOGY CO.,LTD.



地址：中国安徽黄山歙县城西开发区  
Add: Chengxi Development Zone, She County,  
Huangshan City, Anhui Province, China  
电话(Tel): 0559-2621818 2621819  
[Http://www.aikred.com](http://www.aikred.com)