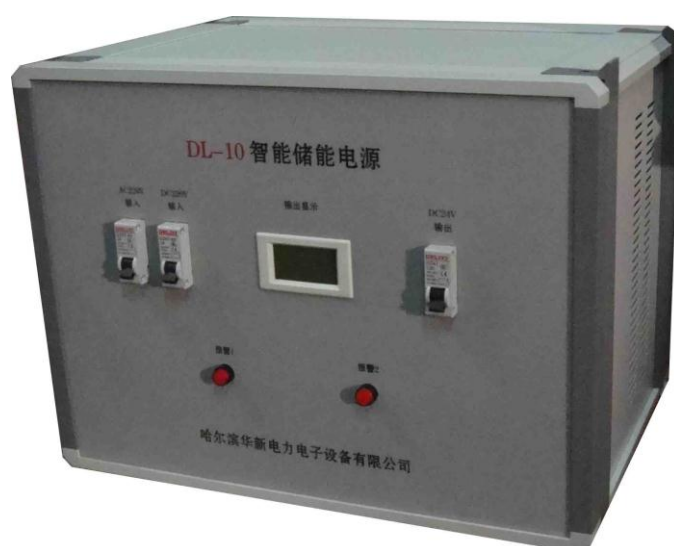


# DL-10 型智能储能电源

## 产品说明书



哈尔滨华新电力电子有限公司

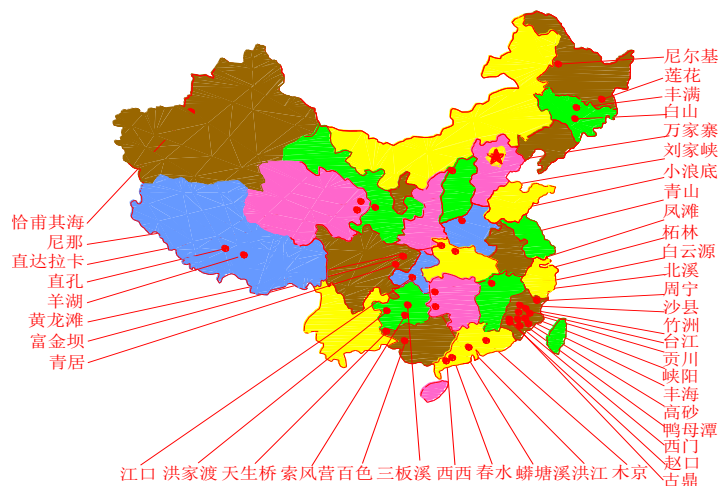


# 企业简介

哈尔滨华新电力电子设备有限公司成立于1986年，是专门从事自动化领域相关的新技术，新产品研究开发，生产制造，应用服务。我公司十分重视产品的质量，建立了严格的管理体系及检验制度，形成了从产品设计开发、生产过程、出厂检验和售后服务一整套的质量保证体系。并通过了ISO9001:2000质量管理体系认证。

公司本着“求实、创新、高效”的企业精神，遵循不断创新、严格管理、稳步发展的管理理念，逐步实现着“为行业服务，对社会负责，促事业发展”的企业目标。经过公司全体员工孜孜不倦的努力工作，哈尔滨华新电力电子设备有限公司已成为立足服务电力行业，具备自动化产品研究开发，生产制造，系统集成，服务咨询能力的专业公司。公司博采国内外先进技术，研究出许多适合我国电厂运行环境要求的新产品，主要产品有低压配电设备、电源设备、发电机轴电流继电保护装置、剪断销分路报警装置、温湿度控制器、流量水头检测仪、智能储能电源、电源转换装置等仪表和设备。

由我厂制造生产的产品正运行于国内外各大水电站，国外的有尼泊尔、马其顿、印度、越南、缅甸、埃塞俄比亚等，国内的有“丰满”、“莲花”、“万家寨”、“小浪底”、“刘家峡”、“柘林”、“竹洲”、“沙县”、“贡川”、“”、“蟒塘溪”、“北溪”、“峡阳”、“尼那”、“黄龙滩”、“江口”、“洪家渡”、“周宁”、“尼尔基”等。



多年来，哈尔滨电机厂、天津阿尔斯通公司、双富/东芝公司、上海东芝公司、丰满电厂、福建高砂水电厂、四川红叶二级电厂、富春江水电设备厂、北京万宝、南平江河、杭州国望等公司承建的国内外水电项目，均应用了我公司生产的产品。我公司也以优质的产品和完善的服务，深受用户信任，历次被评为重合同守信用企业，公司将以创造水电厂运行的安全、稳定、可靠、高效为目标；以给广大用户提供专业、优质、快捷的服务为宗旨；以如既往的走专业化发展的道路，付出我们的努力，回报您的期待。

“服务水电、交流水电、展示水电”是我们的宗旨。

**管理体系认证证书**  
 宣 告 制  
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**质量管理体系符合**  
**ISO9001：2003**  
**本证覆盖范围**  
**输电路家电保护装置的制造**

发证日期：2013年05月20日      有效期至：2015年05月20日  
 注册号：JAS-ANZ-001      颁证机构：**张克礼**

JAS-ANZ  
  
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IAF

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## 1 应用

DL-10 型智能储能电源主要应用于两路主电源(AC220/DC220)断电后, 由本装置向用电设备提供备用电源(持续供电时间 10A/20min、15A/15min), 以避免由于供电故障所引起的自控装置的故障及损坏。

本装置由智能分析控制单元对主电源进行监测, 具有转换灵敏(零时间切换), 输出电压精度高, 持续时间长等优点。

## 2 技术参数:

- 输入 AC220V 和 DC220V
- 额定输出电压 DC24V
- 额定输出电流 15A
- 额定功率 300W
- 变化误差:  $\leq 2\%$
- 绝缘等级: B 级
- 绝缘耐压为 1KV
- 绝缘电阻 $>100M\Omega$

## 3 工作原理

3.1 本装置输出与用电设备的供电电源并联使用, 当供电电源断电后, 由本装置向用电设备供电, 同时输入报警接点动作。

3.2 本装置在供电电源断电后, 可以实现零时间切换, 由本装置向负载供电, 并可持续稳定输出直流 24V, 不随储存能量的变化而波动。

3.3 当储能器能量过低时, 储能器欠压报警指示灯亮, 同时装置会自动切断电路,

停止向用电设备供电，输出报警接点动作。

3.4 当主电源（一路或两路）恢复供电后，装置会自动向储能器快速充电，充电时间保证 20-24 小时。当储能器的能量达到一定值后，储能器进入浮充状态。此时，本装置可以正常向负载供电。

3.5 本装置由储能器，PWM 电路，充电电路，A/D 转换、智能分析控制单元等组成，原理框图如下。

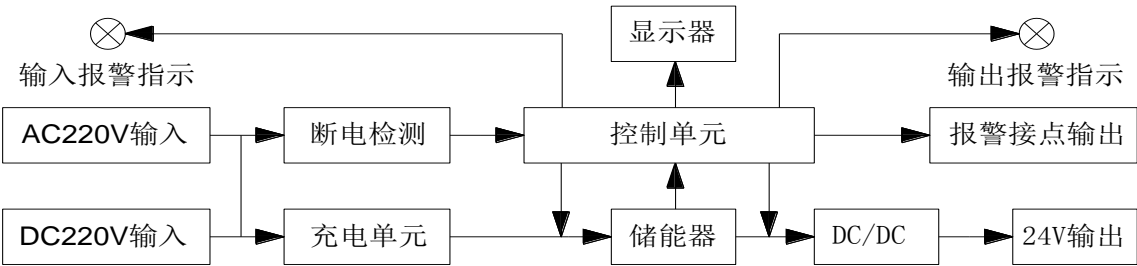


图 1 DL-10 型智能储能电源原理框图

4 面板

4.1 前面板

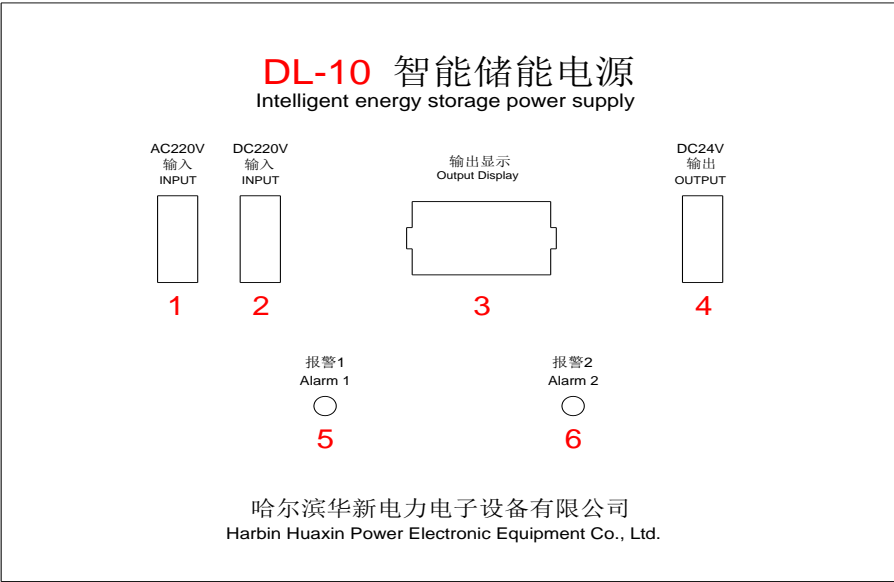


图 2

- AC220V 输入保护断路器
- DC220V 输入保护断路器
- 输出电压显示
- DC24V 输出保护断路器
- 输入电源故障
- 输出低电压报警

## 4.2 后面板

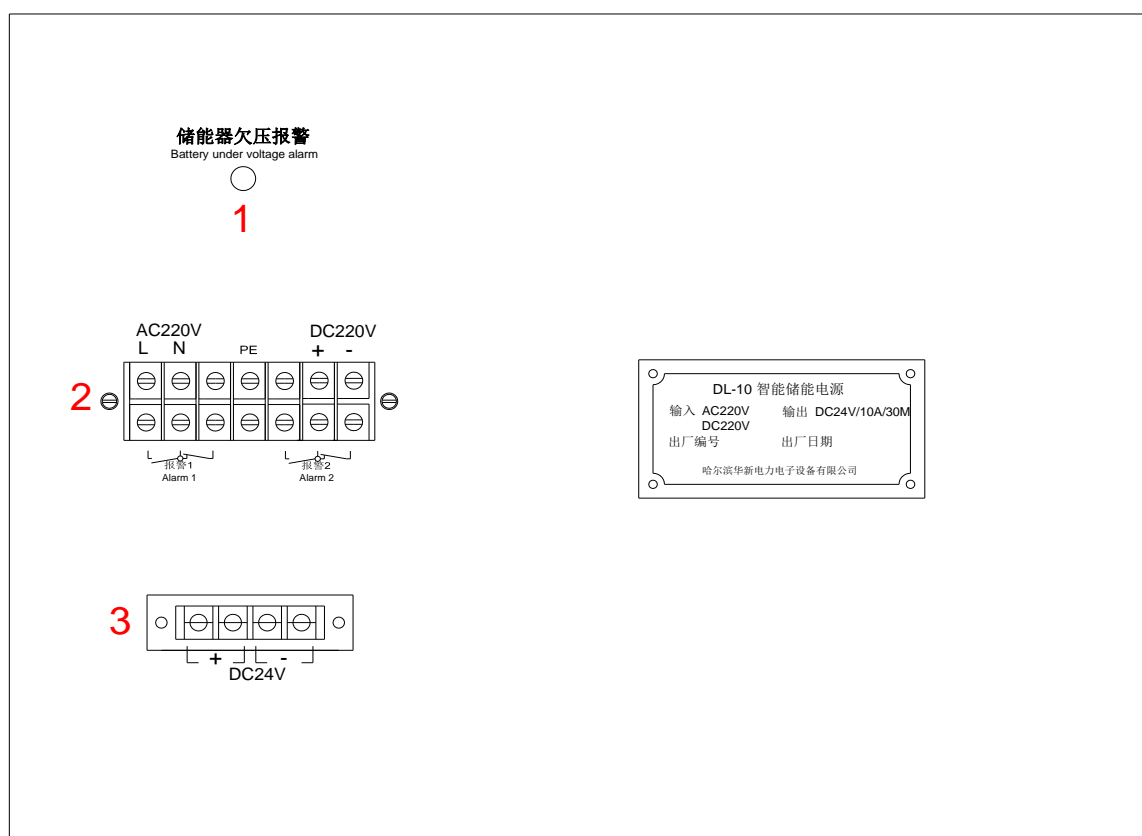


图 3

### 4.2.1 1 为储能器欠压指示灯

### 4.2.2 2 为端子排：上排左起 1-7；下排左起 8-14

- 1-2：AC220V 工作电源输入 L, N
- 4：PE
- 6-7：DC220V 工作电源输入+, -
- 8-9-10：报警 1 接点输出
- 12-13-14：报警 2 接点输出

### 4.2.3 3 端子排：左起 1-4

- 1-2：为 DC24V 输出 (+)
- 3-4：为 DC24V 输出 (-)

## 5 使用

### 5.1 检测

由于内部有储能器，本装置在接入系统前请先对装置的输出进行检测。检测方法如下：

后面板输入端子接线完毕后，依次将前面板断路器 1、2、4 闭合，装置处于输出状态，电压表开始显示当前输出电压。

- 储能器欠压指示灯熄灭，储能器电压正常。
- 报警 1 信号灯不亮，报警 1 接点不动作：输入正常。
- 报警 2 信号灯不亮，报警 2 接点不动作：输出正常。



## 5.2 保护状态处理

5.2.1 本装置储能器具有欠压保护功能，当断电放置或正常放电一定时间后，储能器电压下降至正常范围以下时，储能器停止向外部供电，进入保护状态。

处理方法如下：

后面板储能器欠压指示灯亮，表示储能器电压过低，前面板液晶显示为 0。保持 AC220V 和 DC220V 正常供电，并且保证断路器 1、2、4 闭合。装置自动进入储能器充电状态。当储能器电压回复正常状态后，后面板储能器欠压指示灯灭，前面板液晶显示器会恢复正常显示，储能电源进入正常工作状态。

5.2.2 本装置如果长期放置不用应定期对设备进行充电，

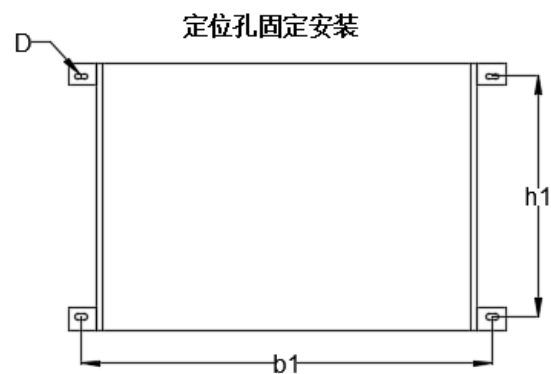
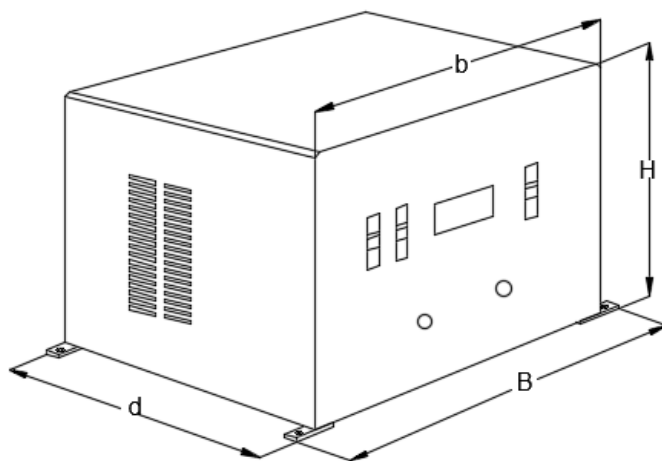
- 相对湿度大于 60%，每 20-25 天充电 6-10 小时，
- 相对湿度小于 60%，每 40 天充电 12-24 小时。
- 在使用前，应对装置进行 24 小时完全充电，否则会造成装置不能正常工作。
- 充电完成后，按照 5.1 操作进行检测。正常后，才能安装使用。

**注意：**

- 1、主机厂在例行放电试验后及运至电厂入库前对装置完全充电 24 小时。
- 2、运输或库房存放时，应保证断路器 1、2、4 完全断开，否则会影响储能器的使用寿命。

## 6 外形尺寸及安装：

### 6.1 尺寸图表：底部固定安装



外形及开孔尺寸表						单位: mm	
型号及部件	B	b	H	d	D	b1	h1
DL-10	492	428	322	302	椭圆孔 $\varnothing 6.5 \times 13$	462	272

## 6.2 接入导线线径要求

- 输入端 BV1.5
- 输出端 BV2.5

## 7 随机文件:

- 使用说明书
- 产品合格证

## 8 订货时请提供:

- 工作电压
- 输出电压
- 输出电流
- 持续供电时间

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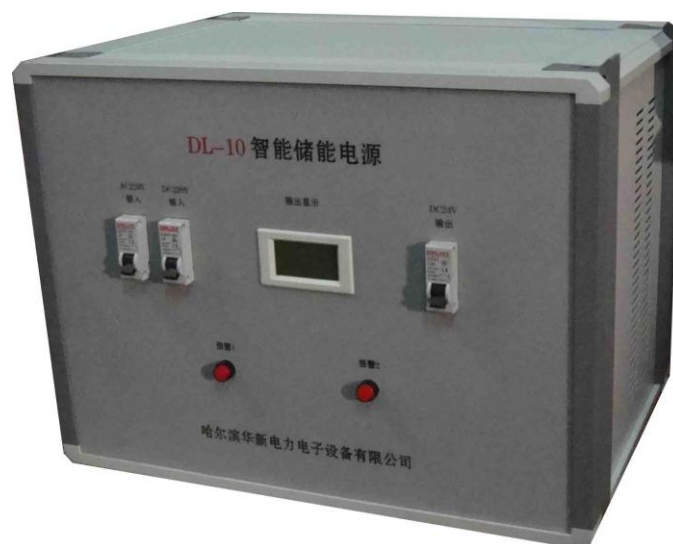
帐 号：350 005 010 920 157 7442

税 号：91230 110 672 103 766R

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# **DL-10** Intelligent Energy Storage Power Supply User's Manual



Harbin Huaxin Power Electronic Equipment Co., Ltd.

## **Introduction to our company**

Our company founded in 1986, is one of the professional factories producing low-tension distribution equipment, power supply system and shaft current relay protect fixture. Of 30 employees, there are 9 technologists and 4 quality managers. Our permanent assets have reached 7,500,000 RMB. Recently, our products have been used in both domestic and overseas large and medium hydroelectric stations and met the performance requirement. For example, in Xiao Fengman hydroelectric station, a fateful accident was avoided betimes with the supervising alarm.

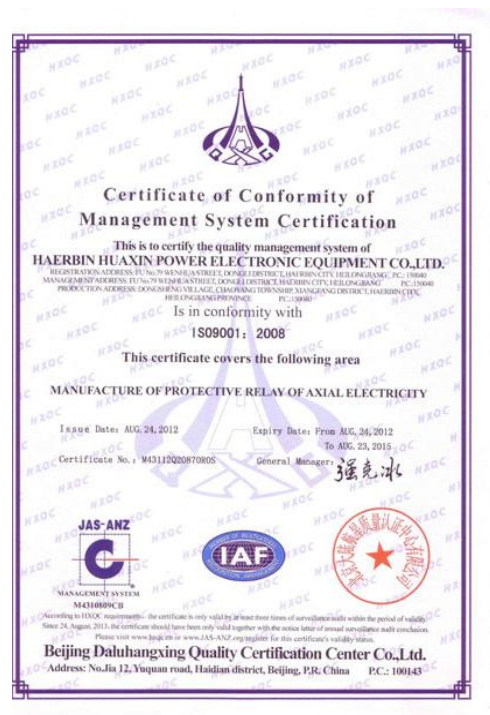
Our BZL-10 series shaft current relay protection fixture is being applied in many domestic and overseas large and medium hydroelectric stations including “Cuishuli” of Nepal, “Kejia” of Macedonian and some domestic stations such as “Fengman”, “lotus flower”, “Tiansheng Bridge”, “Wanjia stockaded village”, “Little Langdi”, “Liujiagorge”, “Tuolin”, “Mujing”, “Zhuzhou”, “Qingju”, “Shan county”, “Gongchuan”, “Qingshan”, “Mangtang brook”, “North brook”, “Xiayang”, “Nina”, “Fengtian”, “Huanglongtan”, “Jiangkou”, “Hongjia ferry”, “Zhouning”, “Nierji” etc.

I plant research and development of fourth generation (BZL-10C model )has been put into the market, its performance and the indicators are better than similar domestic products.

I plant research and development of fifth generation (BZL-10D model) has entered the acceptance stage, its performance and the indicators are ahead of similar products in the domestic and import substitution products.

Our company attaching importance to the product quality has found a set of strict quality control and proof-test system. Now our company has possessed perfect

proof-test standard from material stock, each produce process to products leaving factory, and achieved the authentication from ISO9000 quality control system. At present, our company has gained customers' reliance and trust with the enterprise recognizing contract and keeping faith because a complete set of quality control system applied in every tache including product design, development, exploiting, manufacture and proof-test have been formed.



## **1 Application**

DI-10 intelligent energy storage power supply is mainly used in two main power supply (AC220/DC220) off, by the device electrical equipment to provide backup power (continuous power supply time 10A/20min, 15A/15min), to avoid due to power supply failure caused by the automatic control device of the malfunction and damage.

The device is controlled by the intelligent analysis and control unit for the main power supply, which has the advantages of high conversion sensitivity (zero time switching), high output voltage accuracy, long duration, and so on.

## **2 technical parameters:**

- input AC220V and DC220V
- rated output voltage DC24V
- rated output current 15A
- rated power 300W
- changes: the error is less than 2%
- insulation class: B class
- insulation resistance to 1KV
- insulation resistance >100M

## **3 Operating principle**

- 3.1 the output of the device is connected in parallel with the power supply of the power supply. When the power supply is cut off, the device is powered by the power supply. Simultaneous input alarm contact action.
- 3.2 the device can realize zero time switch when the power supply is cut off, and it can be supplied to the load by the device, and can be stable output DC 24V.
- 3.3 when the energy storage device is too low, the energy storage device under the pressure warning light, and the device will automatically cut off the circuit, stopping power supply, output alarm contact action.
- 3.4 when the main power supply (one way or two) to restore the power supply, the device will automatically charge the storage device, charging time to ensure 20-24 hours. When the accumulator energy reaches a certain value, the accumulator into a floating state. At this time, the device can be normal to load power supply.

3.5 the device is made up of energy storage device, PWM circuit, charging circuit, A/D converting circuit, intelligent analysis and control unit, etc.

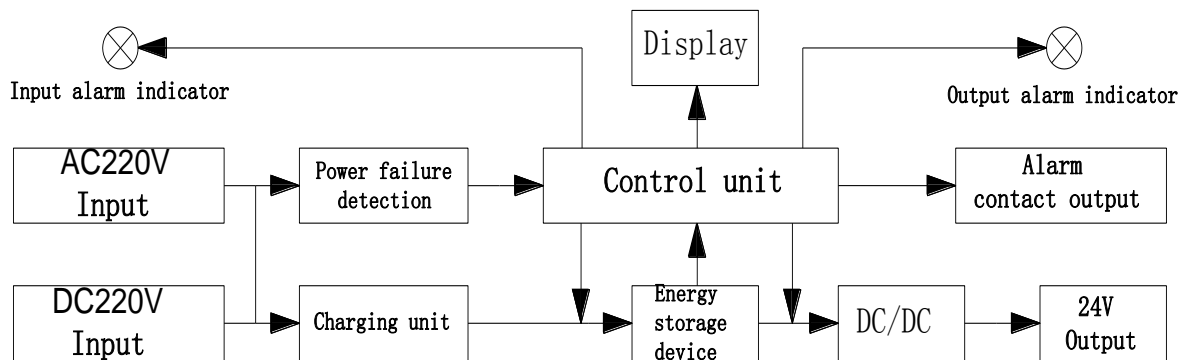


Figure 1 Principle block diagram is as follows

## 4 Panel

### 4.1 Front panel

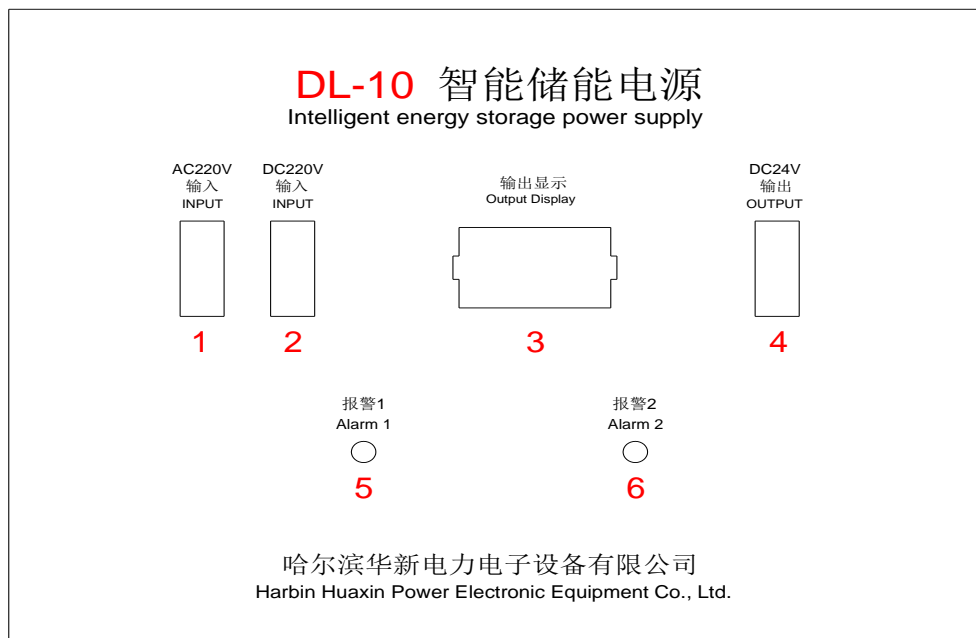


Figure 2

- AC220V input protective circuit breaker
- DC220V input protective circuit breaker
- Output voltage display
- DC24V output circuit breaker



- Input power failure
- Output low voltage alarm

## 4.2 Rear panel

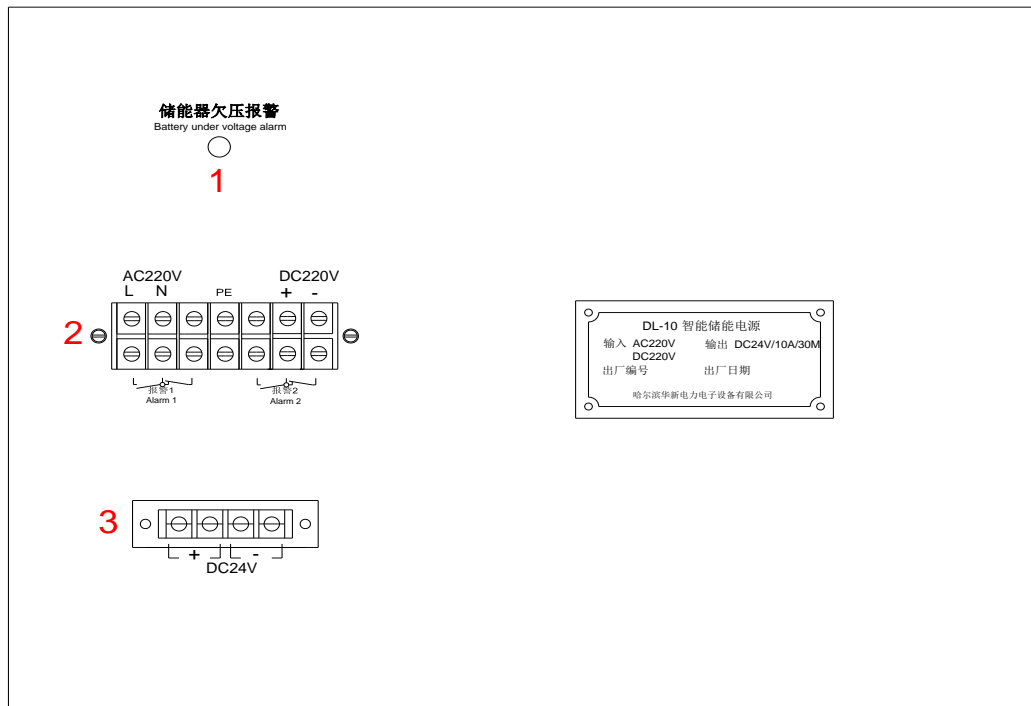


Figure 3

- 1- is the energy storage device under pressure indicator
- 2-is the terminal row upper left: 1-7; lower left 8-14
  - 1-2:AC220V working power input L, N
  - 4: PE
  - 6-7:DC220V working power input +, -
  - 8-9-10: alarm 1 contact output
  - 12-13-14: alarm 2 contact output
- 3 terminal row: left 1-4
  - 1-2: for DC24V output (+)
  - 3-4: DC24V output (-)

## **5 use**

### **5.1 detection**

As the internal energy storage device, the device before in the access system, please check the output of the device. Test methods are as follows:

After the completion of the rear panel input terminal, front panel circuit breaker 1, 2 and 4 are closed, the device is in the output state, the voltage meter is beginning to show the current output voltage.

- The energy storage device is a low voltage indicator light and a storage device is normal.
- Alarm 1 indicator lamp is not bright, 1 points of the alarm does not move: input normal.
- Alarm 2 indicator lamp is not bright, 2 points of the alarm does not move: input normal.

### **5.2 protection state processing**

5.2.1 The device storage device with undervoltage protection function, after power placed or normal discharge, energy storage device voltage decreased lower normal value, the energy storage device into the protection of the state.

The p If energy storage device lower votage indicator light of The back plate is light, indicating that the energy storage device is too low, the front panel LCD display is 0. Maintain the normal power supply of DC220V and AC220V, and ensure that the circuit breaker 1, 2, 4 is closed. The device automatically enters the charging state of the energy storage device. When the energy storage voltage of the energy storage device is back to normal, the back plate energy storage device is lower votage indicator light goes out, and the front panel LCD will resume normal operation.rocessing method is as follows:

5.2.2 if the device is placed in a long term, it should be charged periodically:

- Relative humidity is greater than 60%, charging 6-10 hours every 20-25 days.

- Relative humidity is less than 60%, charging 12-24 hours every 40 days.
- Before use, the device is fully charged for 24 hours, otherwise it will cause the device can not work.
- After charging is completed, according to the 5.1 operation for testing. After normal, can be installed using.

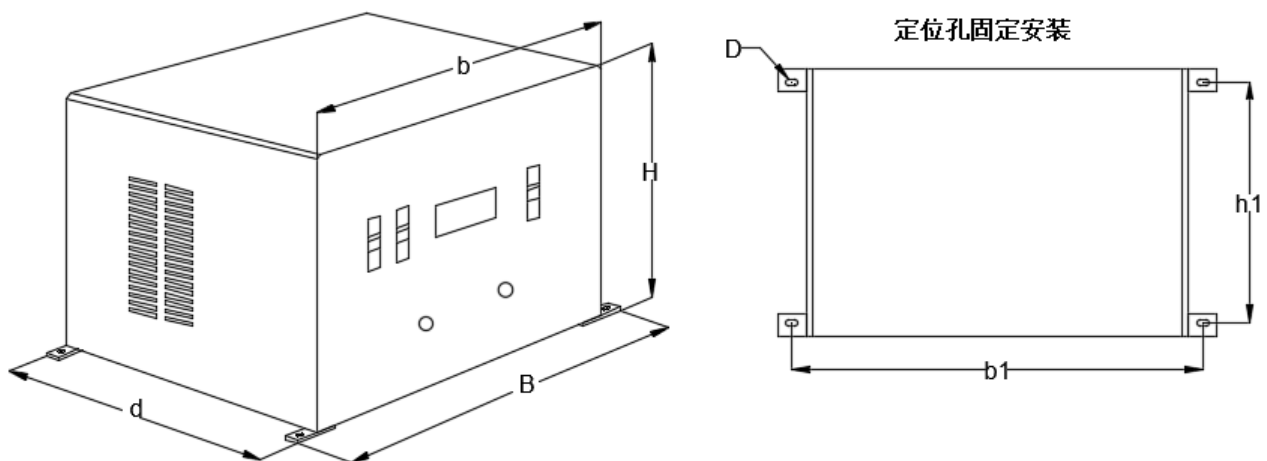
### Be careful:

1. The host plant in the routine discharge test, and transported to the power plant before storage, the device fully charged 24 hours.

2. Transport or storage of storage, should ensure that breakers 1, 2 and 4 are completely disconnected, otherwise it will affect the energy storage deviceService life.

## 6Dimensions and lead :

### 6.1Dimensions chart:



List of dimensions and opening						Unit: mm	
Model and parts	B	b	H	d	D	b1	h1
DL-10	492	428	322	302	椭圆孔 Ø6.5X13	462	272

### 6.2connecting wire diameter requirements:

- The input end of BV1.5
- The output end of the BV2.5

### **7random file:**

- User's Manual
- Product qualification certificate

### **8 ordering please provide:**

- Working voltage
- Output voltage
- Output current
- Continuous power supply time

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