

LDC



Qingdao LDC Technology Corp.

青岛艾迪森科技股份有限公司

地址：青岛莱西市姜山镇北环路以北青岛精密机械
制造产业园内

电话：0532-87882666 87883999 87980999

传真：0532-87885388

网址：www.ldc.com.cn

邮箱：ldcups@163.com

ldcups@ldc.com.cn

service@ldc.com.cn

complaint@ldc.com.cn

24 小时服务热线：13906398067 13906392953



qq在线



公司电话



微信公众号

工业级智能不间断电源系统

Industrial-grade Intelligent UPS System

—SDP系列(10KVA~2.5MVA)—



SDP系列工业级UPS

艾迪森科技股份

股票代码：

★★ 公司简介 ★★

青岛艾迪森科技股份有限公司前身青岛艾迪森科技有限公司，创建于1998年，总部设在美丽的青岛，是一家专注于解决电网供电质量以及工业电源技术问题的高新技术企业。

青岛艾迪森科技股份有限公司全资控股青岛艾迪森软件有限公司及青岛艾迪森能源科技有限公司。

公司市场主要涉及火力发电、石油化工、煤化工等传统能源行业、以及核电、光伏发电、风能发电等新能源行业。

艾迪森科技公司现有员工160余人，其中具有高级职称的10名，中级以上职称的20名；技术与研发人员50人，占总人数的31%；具有大学本科以上学历的占60%以上。所有工程师和现场技术服务人员均接受过严格的专业技术培训，掌握UPS行业最先进的技术及最丰富的工作经验。

2007年公司生产研发基地从市北区迁入青岛市城阳区惜福镇傅家埠工业园，并建立了研发中心和流水线作业，开始进入规模化发展阶段。

为支撑公司新的经营战略，2012年公司又斥资在姜山新城建立了新的工业园，为企业的二次腾飞打下了丰厚的物质基础。

公司全体员工，励精图治、开拓创新，以“工匠”精神，打造未来发展的新起点，建设二次腾飞新平台：

- 严谨、务实、高效的团队
- 安全、可靠、智慧的产品
- 新兴、能源、绿色的市场



★★ COMPANY INTRODUCTION ★★

Qingdao LDC Technology Corp. formerly known as Qingdao LDC Technology Co., Ltd. the headquarters is in Qindao and was established in 1998. LDC is a high-tech enterprise, focusing provides high quality solution of the power supply and industrial power supply.

Qingdao LDC Technology Corp., wholly owned Qingdao LDC Software Co., Ltd. and Qingdao Energy Technology Co., Ltd.

The company markets mainly related to power generation, petrochemicals, coal chemicals and other traditional energy industries, as well as nuclear power, photovoltaic power generation, Concentrating Solar Power, and other new energy industries.

Qingdao LDC Technology Corp. currently employs more than 160 people, 10 of them have senior titles, more than 20 have Intermediate titles; technology and R & D staff of 50 people, 31% of the total number; a university degree or above accounted for more than 60%. All engineers and field service technicians have received rigorous professional and technical training, to master the most advanced technology and most extensive work experiences in the UPS industry.

In 2007 the company R & D base moved into Fujiabu Industrial Park, Xifutown, Chengyang from Shibeidistrict. The establishment of a research and development center and pipeline operations and began to enter the large-scale development phase.

Companies of all employees, hard work, innovation, in the spirit of "craftsmen", build a new starting point for future development, building a new platform for the second take off:

- Rigorous, pragmatic and efficient team
- Safe, reliable, and the product of wisdom
- Emerging, energy, green market



工业级智能不间断电源系统

系统由以下部分组成：

1、电源设备生命周期管理系统

将UPS及电池系统中的影响性能及可靠性的关键器件的关键参数全部采集到数据库中，随时更新、计算，然后与系统中预设关键器件的寿命曲线进行比对，实时预测关键器件的寿命，实时预警。使设备的可靠性完全在您的掌控中！

2、SDP系列工业级模块化智慧型UPS

真正的工业级设计，全系列模块化组合、可形成N+1冗余、智能化的自主决策、自主故障处理。

3、IBP系列工业级模块化智慧型电池系统（详细资料见另外的手册）

电化学技术与电力电子技术的完美结合。

真正的工业级设计，全系列模块化组合、可形成N+1冗余；串联电池组中的电池电压、内阻被修复达到完全一致；突破了因电池串联带来不一致问题的技术瓶颈，电池组寿命达到10年以上。

通过设备+互联网

- ➔ **实现电源产品全面智能升级**
- ➔ **自动预测关键器件寿命**
- ➔ **所有电源设备实现“0”停机**

Industrial-grade Intelligent UPS System

The System Consists of the Following:

1. Power Equipment Life Cycle Management Systems:

Life cycle management systems will help to collect all parameters of the UPS key components & Batteries. These parameters are formed into a database and stored up to date for the calculation. By comparing the collected parameters and default parameters to calculate the life cycle curve for evaluation of the components, also it will help for real time forecasting, real time warning. You can have complete control over the UPS.

2. SDP series Industrial Grade Modular Intelligent UPS:

It is truly industrial-grade product, the combination of modular, N +1 redundant power systems, intelligent autonomous decision-making system, autonomous fault processing system.

3. IBP series Industrial Grade Modular Intelligent Battery System:

The perfect combination of electrochemical technology and power electronics technology.

It is truly industrial-grade product, the combination of modular, N +1 redundant power system; The voltage and resistance of series of each cell in the battery pack automatically repaired by management system, so that each cell in the battery pack within the parameters automatically adjust for consistent; Breakthrough the technical bottleneck brings from battery connected in series caused inconformity, the battery pack life expectancy up to 10 years.

艾迪森LDC 智能型不间断电源系统

真正实现100%不间断供电

LDC intelligent uninterruptible power supply system is truly realize 100% uninterrupted power supply.

电源设备生命周期管理系统简介

随着工业系统设备智能化程度的不断提高，对现有电源设备的管理与维护，要求设备管理人员、检修人员的能力越来越高；现有设备管理与检修方式已经跟不上设备管理的要求，给个人及企业造成重大损失。

为此，各个企业将设备外包给专业公司来检修或者管理，这种将我们公司设备的可靠性建立在其他公司之上的模式，其风险非常巨大；实践证明也出现了非常多的问题，费用也比较高。同样也造成了个人及企业造成重大损失。

鉴于以上情况，我们公司在召集专家及用户充分论证的基础上，推出了这款产品，期望能够给您带来意想不到的收获。

管理对象

- 1、发电行业交流电源设备，包括：不间断电源(UPS)、旁路隔离稳压柜、配电柜。
- 2、发电行业直流电源设备，包括：直流屏、充电器。
- 3、发电行业蓄电池系统，包括：蓄电池。
- 4、石油化工行业交流电源设备，包括：不间断电源(UPS)、旁路隔离稳压柜、配电柜。
- 5、石油化工行业应急电源设备，包括：EPS、配电柜、蓄电池。
- 6、石油化工行业蓄电池系统，包括：蓄电池。

工作原理

将设备中的影响性能及可靠性的关键器件的关键参数全部采集到数据库中，随时更新、计算，然后与系统中预设的关键器件的关键参数的标准值、临界值进行比对，实时监控关键参数的状态，实时预警。使设备的可靠性完全在您的掌控中！

实现的功能

- 1、一键状态预测
无需任何操作，只需一键，便可预警设备中的关键器件的关键参数的状态；
- 2、一键寿命预测
无需任何操作，只需一键，便可预知电源设备及电源设备中的关键器件的寿命；
- 3、一键开\关机
无需任何操作，只需一键，即可按事先设定好的开关机顺序以及关键技术参数，实现成功开关机；在开关机的过程中，系统自主检测关键技术参数，不会因设备中的参数不正确，导致开机失败，甚至造成设备事故。

Power Equipment Lifecycle Management System Introduction

With the industrial system equipment intelligent continuous improvement, Management and maintenance of existing power supplies, Requirements for facilities managers,

Increasing the ability of maintenance personnel: Existing equipment management and maintenance mode has been behind the device management requirements, caused Significant losses to individuals and businesses.

So each device companies will be outsourced to a professional company to overhaul or manage, the reliability of our equipment is built on company's top model, the risk is enormous. Practice has proved that there have many problems, the costs are relatively high. That caused significant loss of individuals and businesses.

Our company convening experts and users on the basis of sufficient proof, launched this product and expect to be able to bring unexpected gains.

managed objects

- 1、The power generation industry AC power supply, including ups, Regulators bypass isolation cabinet, Distribution Cabinet;
- 2、DC power generation industry equipment, including DC panel, Charger;
- 3、Power generation battery system, including Battery;
- 4、AC power supply petrochemical industry, including ups, Regulators bypass isolation cabinet, Distribution Cabinet;
- 5、Petrochemical industry, emergency power equipment, including eps, Distribution Cabinet, Battery;
- 6、Petrochemical industry battery system, including Battery.

working principle

The key parameters impact device performance and reliability of the key components all collected into a database, Update and calculate at all times. Then the standard values and critical values of key parameters in the system are compared, Real-time monitoring of critical parameters of the state, real-time warning. So that the reliability of the device is completely under your control !

Functions implemented

- 1.A key state prediction
Key parameters without any operation, only one key, it can alert the device key components of the state
- 2.A key life prediction
No action, only one key, you can predict life of power equipment and power supplies key components
- 3.A key to open \ Shutdown
No action, just a button, you can press the pre-configured switch sequence and key technical parameters to achieve a Power switch; During the switch, the system independent detection key technical parameters, not because of the device parameters is not correct, to cause power failures and even cause equipment accident.

电源设备中的关键部件

- 第一类部件：控制板、散热风机
- 第二类部件：可控硅SCR、IGBT
- 第三类部件：薄膜或电解电容
- 第四类部件：断路器、接触器、电感、变压器

电源设备中的关键部件的关键参数检测

第一类部件：控制板、散热风机

- 1、控制板：
 - 预警参数：各线路板的控制电源电压值、控制板的输入\输出参数值、CR\IGBT触发信号、程序复位信号；
 - 判断故障的参数：超限报警信号、通讯异常信号；
 - 预测寿命的参数：故障次数；
- 2、散热风机：
 - 预警参数：线圈温度、风速；
 - 判断故障的参数：定子电流；
 - 预测寿命的参数：工作时间；

第二类部件：可控硅SCR、IGBT

- 1、可控硅SCR：
 - 预警参数：温度、稳态电压、电流、导通内阻；
 - 判断故障的参数：不导通时的内阻；
 - 预测寿命的参数：根据SCR寿命曲线；
- 2、IGBT：
 - 预警参数：温度、CE稳态电压，CE电流；
 - 判断故障的参数：驱动芯片输出Uce故障信号；
 - 预测寿命的参数：根据IGBT寿命曲线；

第三类部件：薄膜或电解电容

- 直流母线及交流输出的薄膜或电解电容：
- 预警参数：工作稳态电压；
 - 判断故障的参数：温度；
 - 预测寿命的参数：温度、工作时间；

第四类部件：断路器、接触器、电感、变压器

- 1、断路器：
 - 预警参数：主触点接触电阻，线圈温度；
 - 判断故障的参数：辅助触点状态，线圈工作电流；
 - 预测寿命的参数：主触点动作次数；
- 2、接触器：
 - 预警参数：主触点接触电阻，线圈温度；
 - 判断故障的参数：辅助触点状态，线圈工作电流；
 - 预测寿命的参数：主触点动作次数；
- 3、电感、变压器：
 - 预警参数：温度，电流；
 - 判断故障的参数：温度、绝缘电阻；
 - 预测寿命的参数：工作时间；

电源设备本身的关键参数检测

- 预警参数：机内温度、输入电压\电流、直流电压\电流、输出电压\电流、对地绝缘；
- 判断故障的参数：关键部件故障、机内温度、对地绝缘；
- 预测寿命的参数：关键部件寿命加权平均；

Power supplies key components

- The first part: Dashboard, cooling fan
- The second part: SCR, IGBT
- The third part: Film or electrolytic capacitors
- The fourth part: Circuit breakers, contactors, inductors, transformers

The key parameter detection power supplies key components

The first part: Panels, cooling fan

1. Dashboard:
 - Warning Parameters: Control supply voltage values of the circuit board, the control board input \ output parameter values, CR \ IGBT trigger signal, program reset signal;
 - Determine the parameters of failure: Limit alarm signal;
 - Communication error signal Life prediction parameters: Number of Failures;
2. Cooling fan:
 - Warning Parameters: Coil temperature, wind speed;
 - Determine the parameters of failure: stator current;
 - Life prediction parameters: operating hours;

The second part: SCR, IGBT

1. SCR
 - Warning Parameters: Temperature, steady-state voltage, current, on-resistance;
 - Determine the parameters of failure: not conducting resistance;
 - Life prediction parameters: According to SCR life curve;
2. IGBT
 - Warning Parameters: Temperature, CE steady-state voltage, CE current;
 - Determine the parameters of failure: Uce fault signal output driver chip;
 - Life prediction parameters: According IGBT life curve;

The third part: Film or electrolytic capacitors

- Film or electrolytic capacitors for DC link and AC output
- Warning Parameters: Working steady state voltage
 - Determine the parameters of failure: Temperature
 - Life prediction parameters: Temperature, working time

The fourth part: Circuit breakers, contactors, inductors, transformers

1. Circuit breakers
 - Warning Parameters: Main contact resistance, coil temperature;
 - Determine the parameters of failure: Auxiliary contact state, the coil current work;
 - Life prediction parameters: Main contact number of operations;
2. Contactors
 - Warning Parameters: Main contact resistance, coil temperature;
 - Determine the parameters of failure: Auxiliary contact state, the coil current work;
 - Life prediction parameters: Main contact number of operations;
3. Inductors, transformers
 - Warning Parameters: Temperature, electric current;
 - Determine the parameters of failure: Temperature, insulation resistance;
 - Life prediction parameters: operating hours;

The key parameter detection power of the device itself

- Warning Parameters: Internal temperature, input voltage \ current, DC voltage \ current, output voltage \ current, the insulation;
- Determine the parameters of failure: The key component failure, the internal temperature of the insulation;
- Life prediction parameters: The weighted average life of key components;

SDP系列工业级模块化智慧型UPS，针对工业系统电网特点，专为大型工业系统而设计，主要应用于分布式供电的生产线现场以及集中式供电的DCS控制系统、通讯系统、监控系统、网络管理中心等需要提供高可靠的不间断供电的重要设备及场合。



UPS描述

此系列产品是按工业级标准设计的工业级产品；采用“即插即用”的模块化设计；基于LDC自主知识产权的逆变器磁并联专利技术，实现了无限台并联冗余运行；选择配置电源设备生命周期管理系统，可实现对设备的故障检测、故障自动维护以及寿命预测。

该系列产品分为三进单出和三进三出两款机型。

单机系统容量最大可到2.5MVA

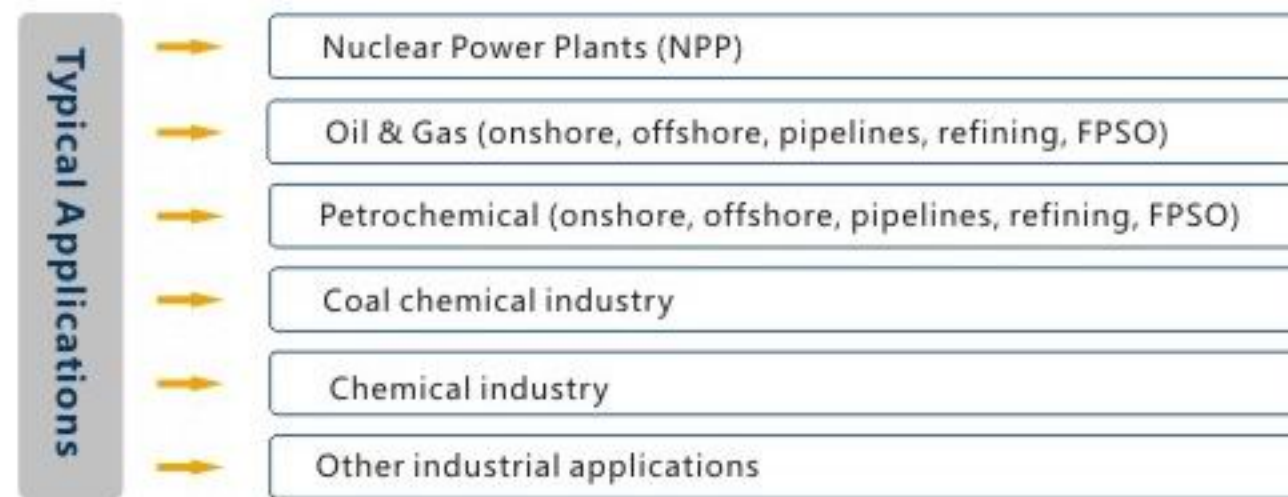
小功率UPS功率模块容量：10K、20KVA、30KVA、40KVA、60KVA。

大功率UPS功率模块容量：100K、125K、200K、250KVA。

各种不同容量UPS的模块配置如下：

- ※ 10K - 40KVA UPS: 1*10K - 40KVA UPS 模块
- ※ 50K - 80KVA UPS: 2*30K - 40KVA UPS 模块
- ※ 100K-120KVA UPS: 3*40K 或 2*60KVA 模块
- ※ 140K-160KVA UPS: 4*40K 或 3*60KVA 模块
- ※ 200KVA UPS: 4*60K 或 2*100KVA 模块
- ※ 250KVA UPS: 2*125KVA 模块
- ※ 300KVA UPS: 3*100KVA 模块
- ※ 350KVA UPS: 3*125K VA 模块
- ※ 400KVA UPS: 2*200KVA 模块
- ※ 500KVA UPS: 4*125 KVA 模块
- ※ 600KVA UPS: 3*200KKVA 模块
- ※ 800KVA UPS: 4*200KVA 模块
- ※ 1000KVA UPS: 4*250KVA 模块
-

SDP series of industrial modularization intelligent UPS, according to the characteristics of the power network of industrial system, designed for large industrial systems, mainly used in distributed power production line and centralized power supply DCS control system, communication system, monitoring system, network management center is needed to provide high reliable uninterrupted power supply for the important equipment and occasion.



UPS Description

This series of products are designed according to industry standard industrial product; the "plug and modular design for the inverter"; magnetic parallel LDC patented technology and independent intellectual property rights based on the infinite, parallel redundant operation; the selection and configuration of power equipment life cycle management system, can realize the fault detection of the equipment, automatic fault maintenance and life prediction.

This series of products are divided into two models, three phase input and three phase output.

The biggest single system capacity is up to 2.5MVA

Small power module capacity of UPS : 10K, 20KVA, 30KVA, 40KVA, 60KVA.

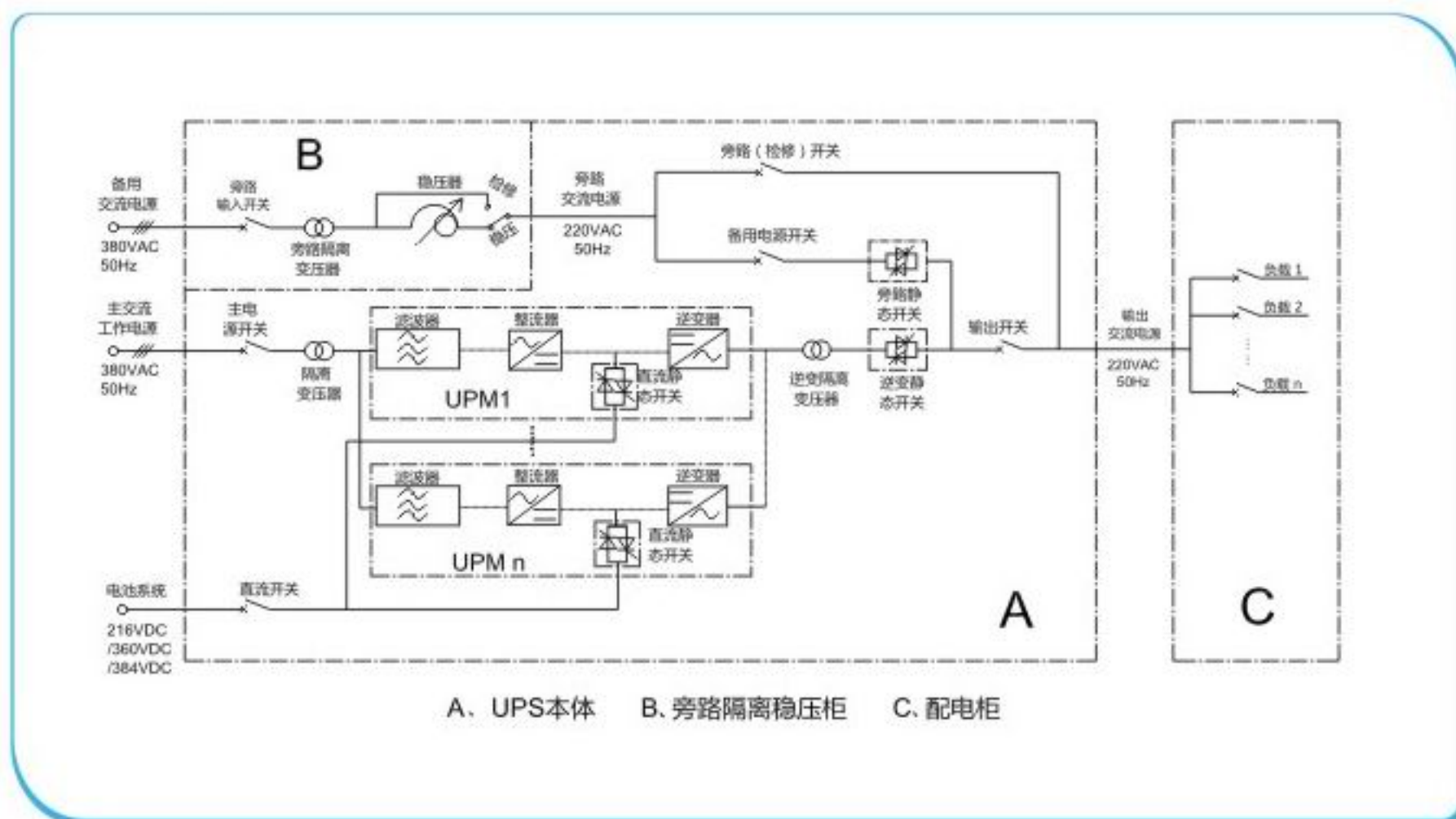
Big power module capacity of UPS: 100K, 125K, 200K, 250KVA.

Module configuration of various capacity UPS as follows:

- ※ 10K - 40KVA UPS : 1*10K - 40KVA UPS module
- ※ 50K - 80KVA UPS : 2*30K - 40KVA UPS module
- ※ 100K-120KVA UPS : 3*40K or 2*60KVA module
- ※ 140K-160KVA UPS : 4*40K or 3*60KVA module
- ※ 200KVA UPS : 4*60K or 2*100KVA module
- ※ 250KVA UPS : 2*125KVA module
- ※ 300KVA UPS : 3*100KVA module
- ※ 350KVA UPS: 3*125K VA module
- ※ 400KVA UPS: 2*200KVA module
- ※ 500KVA UPS: 4*125 KVA module
- ※ 600KVA UPS: 3*200KKVA module
- ※ 800KVA UPS: 4*200KVA module
- ※ 1000KVA UPS: 4*250KVA module
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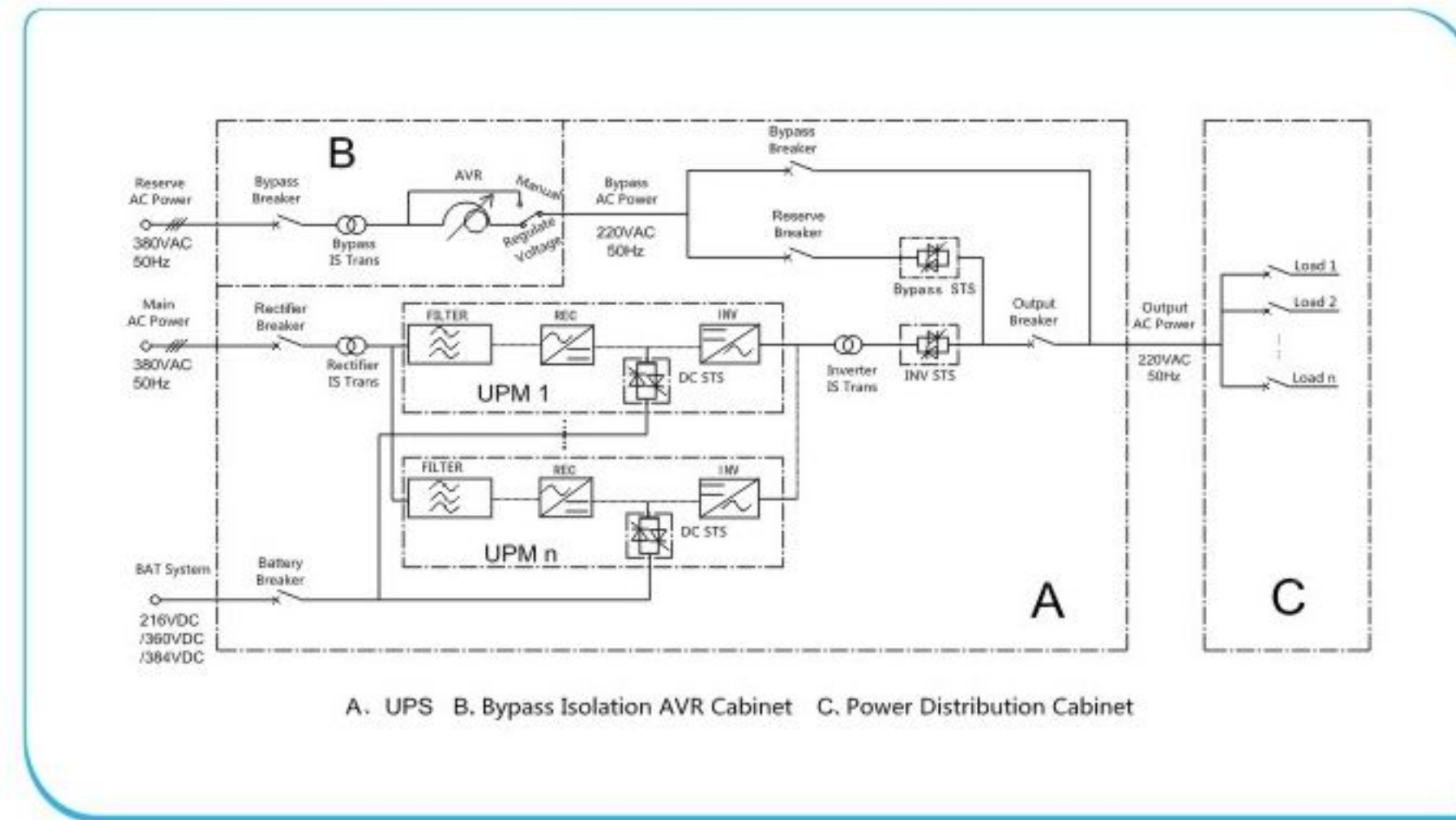
原理框图

工业专用三进单出SDP系统

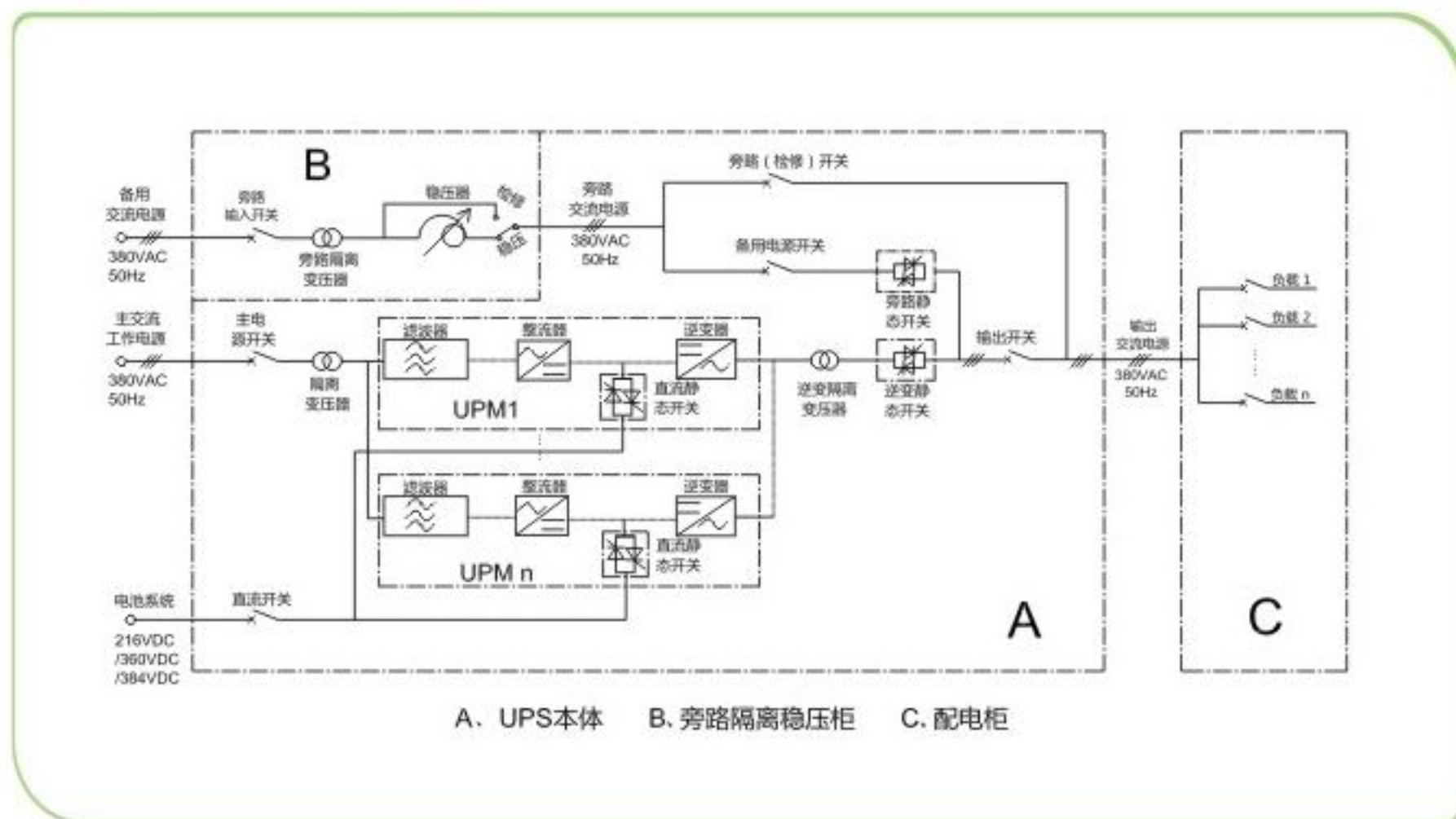


Single Line Diagram

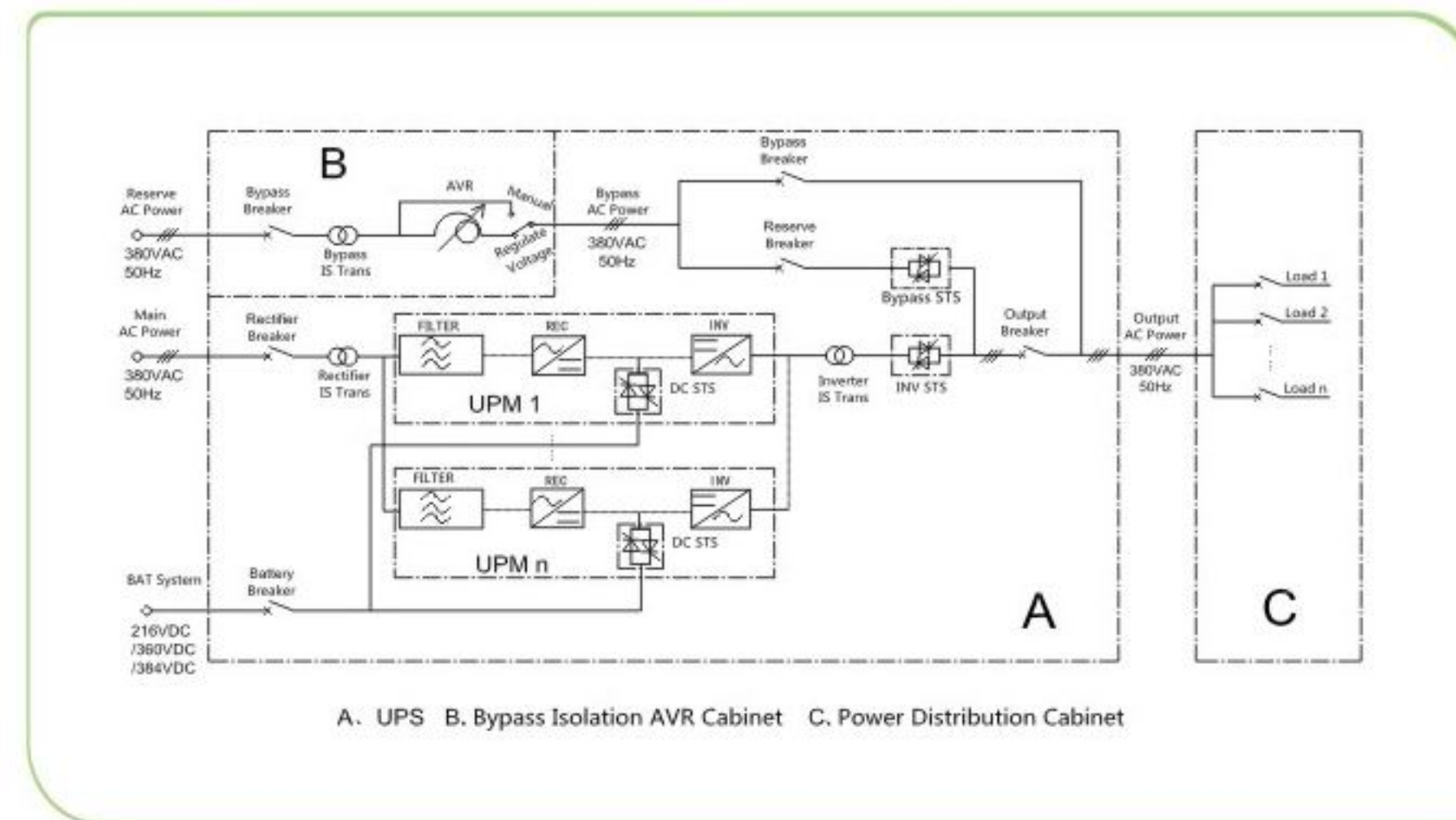
Three-phase Input and Single-phase Output SDP System For Industry



工业专用三进三出SDP系统



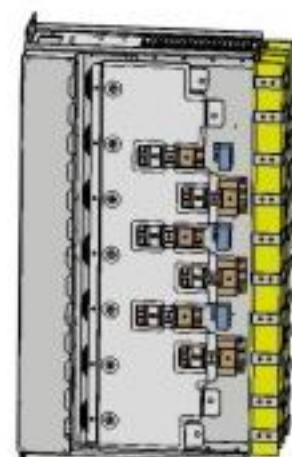
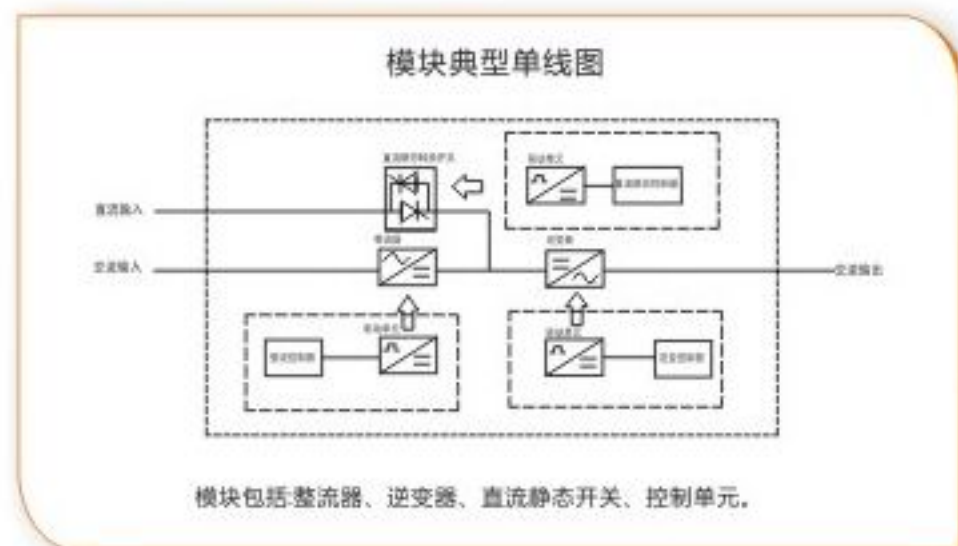
Three-phase Input and Three-Phase Output SDP System For Industry



UPS功率模块描述

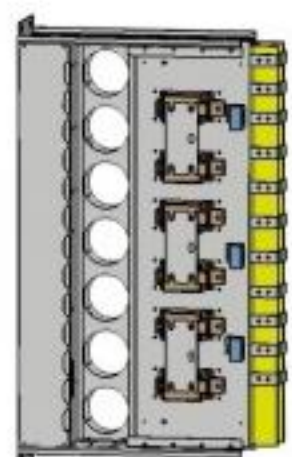
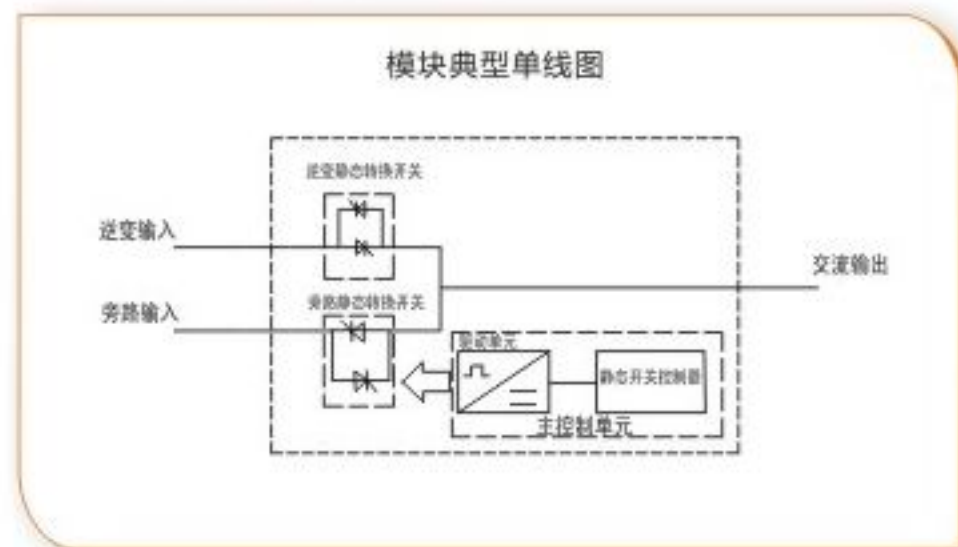
UPS功率模块从结构上分为两种：SDP系列、MDP系列

SDP系列UPS功率模块

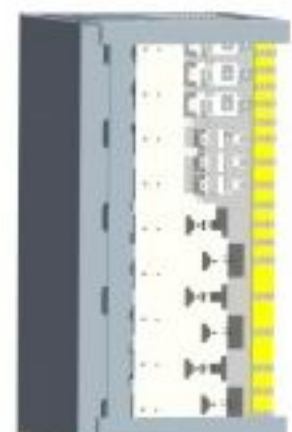
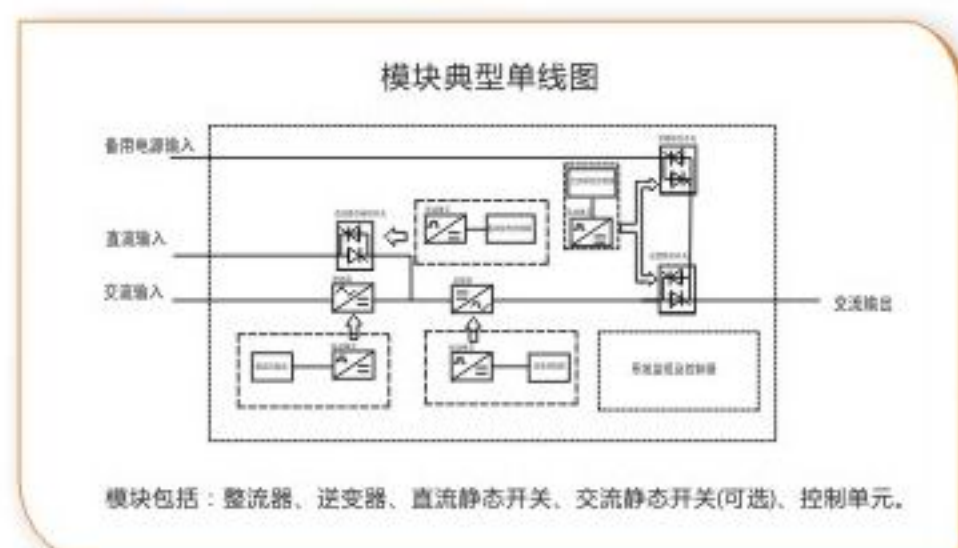


SDP系列UPS功率模块可为三进单出，也可可为三进三出，容量为：10KVA、20KVA、30KVA、40KVA、60KVA、100KVA。

SDP系列UPS静态模块



MDP系列UPS功率模块

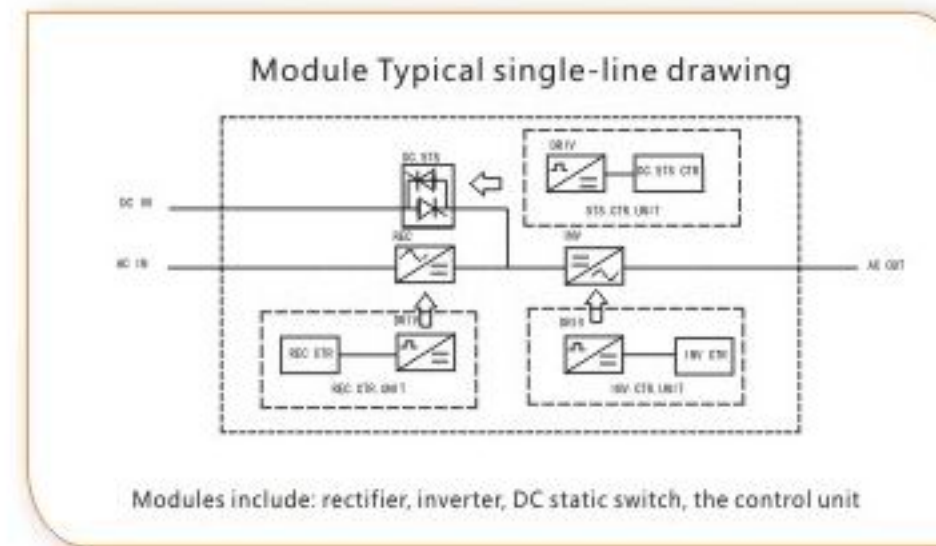


MDP系列UPS功率模块为大功率模块，可为三进单出，也可可为三进三出，容量为：100KVA、125KVA、200KVA、250KVA。

UPS Module Functional Description

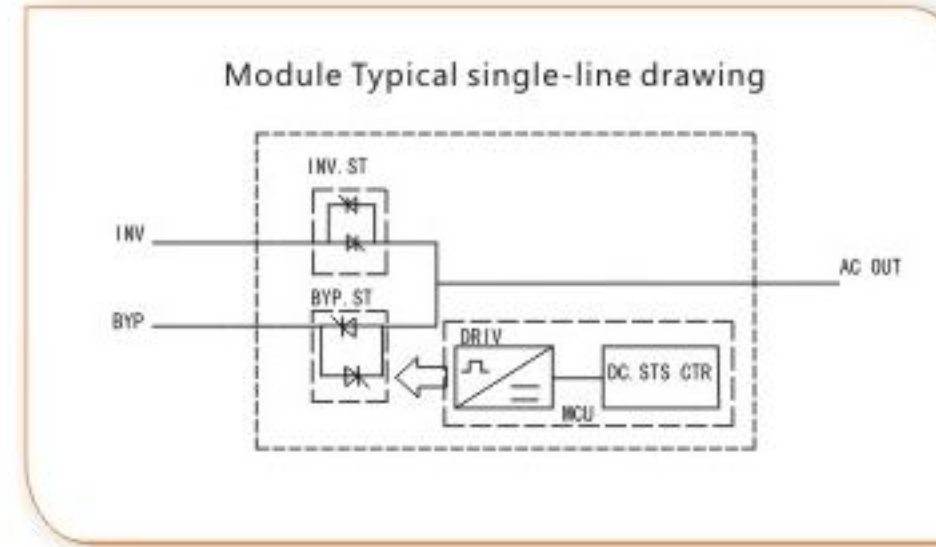
The UPS power module is divided into two kinds according to the structure : SDP series, MDP series

SDP series UPS power module

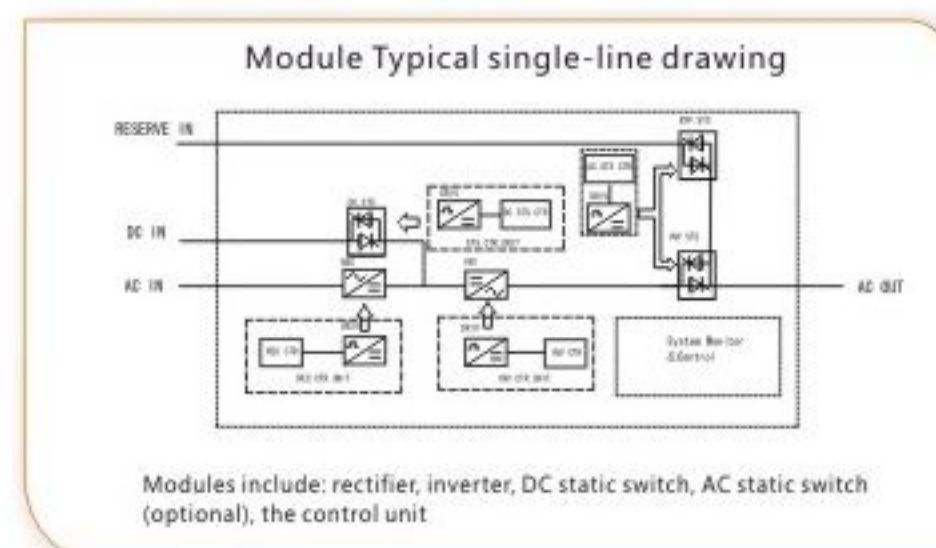


SDP series UPS power model can be three phase input and single phase output, also can be three phase input and three phase output, the capacity is 10 KVA, 20KVA, 30KVA, 40KVA, 60KVA, 100KVA.

SDP series of static switch module



MDP series UPS power module



MDP series UPS power module is for high power module, can be three phase input and single phase output, also can be three phase input and three phase output, The capacity is 100KVA, 125KVA, 200KVA, 250KVA.

UPS技术特点



- 整流器采用12脉冲、18脉冲或24脉冲SCR整流、逆变器采用IGBT逆变
- 32位DSP全数字控制技术
- 可通过软件程式进行参数控制与设定
- ABM快速充电设计，可通过面板设定
- 高达0.95的输入功率因数
- 多台无限并联冗余系统
- 极高的整机效率
- 低于7%的输入电流畸变
- 国际标准通讯协议

UPS性能特点



- **全模块化设计**
“即插即用”模块化设计，整流单元、逆变单元、隔离二极管集成在一个模块上，可方便进行拔插，可大幅度的缩短保养时间。
- **全冗余设计**
多个“即插即用”功率模块并联运行，形成N+1冗余；控制电源、主控板之微处理器，散热风机全部采用双套冗余设计，任何单点故障不会影响整机运行；输出电压的控制采用1+1冗余的闭环控制，保证即使有一路反馈失灵，也不会产生高压输出，烧毁负载。
- **多种语言液晶显示（中文，英文，俄文，西班牙文）**
大屏幕LCD液晶显示、UPS监控软件，采用多种语言显示，操作简单明了。操作无语言障碍，一学就会。
- **全数字化控制**
使用DSP及IGBT等控制开关组件：有效增加系统稳定度及提高机器效率。
- **智能并联热备份**
无须并机板，只需一根通讯线，多台主机即可并联冗余运行；多台并联主机之间通讯线环形设计，形成闭环，即使有一根断开，也不影响多机并联运行。
- **人性化的操控设计**
无程序式的操控限制，操作简单，不同于其他品牌的UPS有严格的操作程序限制。



- **超宽输入电压**
在满载的情况下，输入电压非常宽300VAC-520VAC,在大多数UPS要靠电池放电才能保证输出电压稳定的情况下，他们还能够按正常的方式运行。
- **散热风扇智能检测和控制转速**
任何风扇的故障都可以在UPS面板或通过RS232接口监控到，风扇转速能依负载状况自动调整，延长风扇的使用寿命，减少噪声。
- **静态开关切换时间极短，为无扰动切换。**
采用32位DSP数字控制技术，及电流型检测方式，将切换时间将为0。
- **资料记录能力**
每一个不正常状况发生的资料及时间都会储存在UPS里，因此用户能够清楚了解UPS发生的任何状况，即使在没有电源的情况下，储存在UPS里的资料也不会被清掉。
- **远程诊断与测试**
通过Internet可远程对UPS进行诊断与测试，保证您的系统时刻处于最可靠运行。
- **智能通讯接口**
一个RS232,四个RS485,以及标准通讯协议,组成智能监控系统,同时接驳SNMP装置,实现远程网路管理,20多对无源干接点,可任意选择使用。

UPS Technology Features



- Rectifier use 12pulse or 18 pulse or 24 pulse SCR rectification design, IGBT design in inverter
- 32 bit DPS all digitalization control technology
- Remote parameter control and setting through software procedure
- ABM speedy charging design, could be setted through panel
- Up to 0.95 input power factor
- More than one infinite parallel redundance system
- High overall efficiency
- Less than 7% input current distortion
- International standard communication protocol

UPS Performance Features



- **All Modular Design**
Plug and play modular design, which includes rectification unit, Inverter unit and isolation diode integrated in a single module. So the plug and play design can
- **All Redundancy**
Multiple plug and play power modules running in parallel, which form N+1 redundancy, control source, microprocessor of main control panel and cooling fan all takes double sets redundancy design, so any single point fault cannot influence the running of overall unit. Control of output voltage is takes the closed cycle of 1+1 redundancy, which can make sure that once one way feedback does not work,
- **Multi Language LCD Display (Chinese, English, Russian, Spanish)**
Large-screen LCD display, UPS monitoring software with multilingual display, operation is simple and clear, which is help the operator working without
- **All Digitization Control**
Using DSP and IGBT control switch assembly: which can improve system stabilization and machine efficiency.
- **Intelligent Parallel Warm Backup**
Without paralleling machine panel, only a communication wire is needed, multi-host machine communication wire cycle design, form closed cycle, once a wire
- **Humanized Operation and Control Design**
Without procedural operation and control limit, simple operation, different from other brands UPS with strict operation procedure control.
- **Super Wide Range of Input Voltage**
Upon on full load, input voltage is very wide, from 300VAC to 520VAC. So, when most UPS need battery discharge which can assure the voltage stabilization, they



- **Intelligent detection and control the speed of cooling fan.**
Any faults of fan can be supervised on UPS panel or through RS232 interface, the speed of the fan could adjust automatically according to the load, prolong the
- **Quick Switching of Static Switch without Disturbance**
32 bit DSP digital control technology, and current detecting way which reduce the switching time to zero.
- **History Record**
All the related materials and time of every fault will be recorded in UPS, so the user could know everything about the UPS, even when without power, all the materials recorded in UPS could not be cleared.
- **Remote Check and Test**
Through internate, we can check and test UPS remotely which assure your system running reliably every time.
- **Intelligent Communication Interface**
One RS232 cluster communication port, four RS485 cluster communication ports, and the standard communication interface form intelligent supervising system. And connect SNMP equipment. More than20 couples passive dry contacts, which can be

SDP系列工业级UPS(DC216V/DC360V/DC384V)

型号	SDP (10-20-30-40)	SDP (50-60-80)	SDP (100-120-160)	SDP (250-300)	SDP (350-400)	SDP (450-500)	SDP (600-1080)
UPS类型	双隔离、双变换在线式						
效率	>94%						
UPS环境温度	-10~+50°C(温度范围内根据各个国家的环境不同订制)						
UPS储存温度	-20~+70°C						
相对湿度	<95%(非凝露)						
高度	<2000m(海平面上)						
高度>1500m时功率降低	7%/km						
通风方式	1+1冗余风机强制风冷,上下送风						
噪音	<60dBA			<80dBA			
输入输出电缆连接	底部						
通讯接口	RS232(1个)/RS485(4个)于接口(15针) (SNMP可选)						
规范	符合						
CE, EN50091-1,2	符合						
FCC CLASS A	符合						
保护电路	整流器备用电源旁路开关						
短路保护	MOV						
雷击保护	输入&输出						
EMC保护	输入输出旁路全隔离						
隔离	输入输出旁路全隔离						

整流器

桥式整流器	三相6脉冲可控整流	三相12脉冲可控整流	三相18脉冲可控整流	三相24脉冲可控整流	三相30脉冲可控整流	可订制大于36脉冲
输入隔离变压器	标准配置 DC360V /DC384V (UPS可不配置)					
额定输入电压(VAC)	380V/400V/415V -20%+35%, 三相三线或三相四线					
输入频率	50/60Hz±10%					
输入功率因数	>0.9					
DC输出电压	216VDC/360VDC/384VDC					
DC输出电压精度(负载)	±1%					
效率	99%					

逆变器

桥式逆变器	IGBT DSP控制的逆变器
输出隔离变压器	标准配置
直流输入范围	220VDC/360VDC/384VDC±25%
额定输出电压	220V/230V/240V, 380V/400V/415V
输出相数	单相, 三相
输出功率因数	0.8
频率稳定	内部振荡器
率	50/60Hz±0.05%
与市电同步	50/60Hz±3%
动态	±1%
输出电压	±3%
稳定性	阶跃负载后,1毫秒内恢复至±2%
过载容量	125%为10min,150%为1min
短路特性	短路保护,限流于3倍额定电流,100ms
输出波形	正弦波
失真	线性负载 <1%
非线性负载(峰值因数3:1)	<3%
峰值因数	无限制
效率	>94%
直冷启动	可以

旁路

自动静态开关	晶闸管SCR,接触器,冗余设计(可选项)
额定电压	220V/230V/240V, 380V/400V/415V±20%(可设定)
额定频率	50/60Hz±5%(可设定)
静态旁路切换时间	0ms
逆变器转静态旁路	测试逆变器,逆变器故障,逆变器输入电压过量,逆变器输出
电压过量	电压过量
过载容量	30min
100%	1min

机械参数

型号	SDP (10-20-30-40)	SDP (50-60-80)	SDP (100-120)	SDP (160-200)	SDP (250-300)	SDP (350-400)	SDP (450-500)	SDP (600-1080)
防护等级	IP20,IP21,IP30,IP32,IP40,IP42可选,其他可订制							
W	600	1200	1800	2400	3000	4800	6000	可订制
D	800							
H ₁	1800(IP20, IP30, IP40)							
H ₂	2000(IP21, IP32, IP42)							
重量(kg)	700-1000	1300-2000	2500-3000	3500-4000	4500-5000	5500-6000	>6000	

SDP Series Industrial UPS(DC216V/DC360VDC384V)

Model	SDP (10-20-30-40)	SDP (50-60-80)	SDP (100-120-160)	SDP (250-300)	SDP (350-400)	SDP (450-500)	SDP (600-1080)
UPS Type	Double isolation, and conversion online UPS						
Efficiency	>94%						
UPS Ambient Temperature	-10~+50°C(Temperature range according to the custom of the country's environment is different)						
UPS Storage Temperature	-20~+70°C						
Relative Humidity	<95%(Non-condensing)						
Altitude	<2000m(Above sea level)						
Altitude Decay of power when>1500	7%/km						
Ventilation Type	1+1 redundancy fan, forced air cooling, under-floor air-distribution						
Noise	<60dBA			<80dBA			
Input/output cable connection	Bottom						
Communication Interface	RS232(1a)/RS485(4a)/Dry contact(A group of 15 to),(SNMP optional)						
Standard	CE, EN50091-1,2						
FCC CLASS A	Conform						
Protection of Electric Circuit	Rectifier Bypass Power/Bypass Switch						
Short Protection	MOV						
Lightning Stroke Protection	MOV						
EMC Protection	Input & Output						
Isolation	Input/DC/Output full isolation						

Rectifier

Bridge Rectifier	3 phase 6 pulse controllable rectification	3 phase 12 pulse controllable rectification	3 phase 18 pulse controllable rectification	3 phase 24 pulse controllable rectification	3 phase 30 pulse controllable rectification	more than 36 pulses could be customized
Input Isolation Transformer	Standard Configuration,DC360V /DC384V(UPS Could not configuration)					
Input voltage rated (VAC)	380V/400V/415V -20%+35%, three phase and wire or three phase and four wire					
Input Frequency	50/60Hz±10%					
Input Power Factor	>0.9					
DC Output Voltage	216VDC/360VDC/384VDC					
DC Output Voltage Accuracy (Load)	±1%					
Efficiency	99%					

Inverter

Bridge Type Inverter	IGBT DSP Bridge Type Inverter
Output Isolation Transformer	Standard configuration
DC Input Range	220VDC/360VDC/384VDC±25%
Input voltage rated	220V/230V/240V, 380V/400V/415V
Output Phase	Single Phase Three Phase
Output Phase	0.8
frequency stability	Internal oscillator
factor	Synchronization with mains
Static State	50/60Hz±0.05%
Dynamic (0~100%~0)	50/60Hz±3%
Output Voltage Stability	±1%
Output Voltage Recovery Time	±3%
After ladder loading, recovery to +/2% within 1ms	
Overload Capacity	125%为10min,150%为1min
Short-circuit Feature	Short-circuit protection, current limiting 3times rated current 100ms
Output Waveform	Sine
Linear Load	<1%
Nonlinear Load (Peak Factor 3:1)	<3%
Peak Factor	Unlimited
Efficiency	>94%
DC Cold Start	Yes

Bypass

Automatic Static Switch	Silicon controlled rectifier SCR, redundancy design (optional)
Rated Voltage	220V/230V/240V, 380V/400V/415V±20% (optional)
Rated Frequency	50/60Hz±5% (optional)
Static Bypass Transfer Time	0ms
Inverter Switch to Static Bypass	Testing inverter, inverter fault, inverter input voltage excess, inverter output
Voltage excess	30min
Overload Capacity	100%
100%	1min

Mechanical Parameter

Model	SDP (10-20-30-40)	SDP (50-60-80)	SDP (100-120)	SDP (160-200)	SDP (250-300)	SDP (350-400)	SDP (450-500)	SDP (600-1080)
Protection Degree	Choose from IP20, IP21, IP30, IP32, IP40, IP42, other could be custom.							
W	600	1200	1800	2400	3000	4800	6000	customized
D	800							
H ₁	1800(IP20, IP30, IP40)							
H ₂	2000(IP21, IP32, IP42)							
Weight(kg)	700-1000	1100-2000	2500-3000	3500-4000	4500-5000	5500-6000	>6000	

UPS系统设计特色

- 真正的工业级标准
- 全系列三进单出设计（三相输入，单相输出）三进三出（可选择）
- 多台无限并联冗余系统
- 可同时接受多路不同相位、不同频率的交、直流电源输入
- 单相输出UPS容量，可高达360KVA、三相输出的UPS容量、可达2.5MVA.

UPS系统并联方案

并联冗余系统采用三组交流静态开关设计，彻底解决了系统中单点故障问题以及联锁失效问题。并联冗余系统可以多台无限并联，无须并机柜，每台只需一根通讯线，多台主机即可实现并联冗余系统；多台并联冗余系统的通讯线连接成环形，同时通过主机输出连线进行载波通讯，即使一根或两根通讯线意外断开，也不影响多机并联运行。

可实现以下并联方案

- 同容量UPS可实现直接并联；
- 不同容量UPS可实现直接并联；
- 同容量不同品牌UPS可实现直接并联；
- 不同容量不同品牌UPS可实现直接并联；

并联系统选件

- 维修旁路柜
- SCT同步控制器
允许非并联的两台或多台UPS在供电失效情况下仍然同步。SCT能使LDC UPS一个独立的即使不同容量的UPS同步。
- PSPD-电源系统并接装置
通过一个电源系统并接装置可将两台UPS构成并联，Slave UPS始终同Master UPS系统保持同步。如果其中一台UPS出现故障，PSPD通过额外的旁路系统自动连接另一台UPS。即使是不同品牌的UPS也可以实现。
- STS-静态切换开关
使用STS 可以使两路电源无扰动切换；在两路电源相位同步的情况下，可实现0ms切换时间。

UPS System Design Features

- According to industry standard design and manufacturing
- With TISO (three phase input and single phase output) TITO (three phase input and three phase output, optional) design.
- Multiple UPS parallel N+1 redundant power system
- UPS can access multiple different phase, different frequency AC, DC power supply
- The output capacity of TISO UPS: 10KVA~360KVA, and the output capacity of TITO UPS is 10KVA~2.5MVA.

UPS System Parallel Operation Solutions

Parallel redundant system uses the three phase current static switch design, completely solves the single point breakdown problem in the system, and interlocking failure problem. Multiple UPS can be paralleled into N + 1 redundant power system operation, do not need to parallel cabinet, each set of UPS with only one communication line, multiple hosts can realize parallel redundant system; The communication lines of multiple parallel redundant system connected into ring, and carrier communication through the host's output connection, even if one or two communication lines accidental disconnection does not affect the parallel operation of multi-machine.

Super Data Series Could Realize Below Parallel Operation Solutions

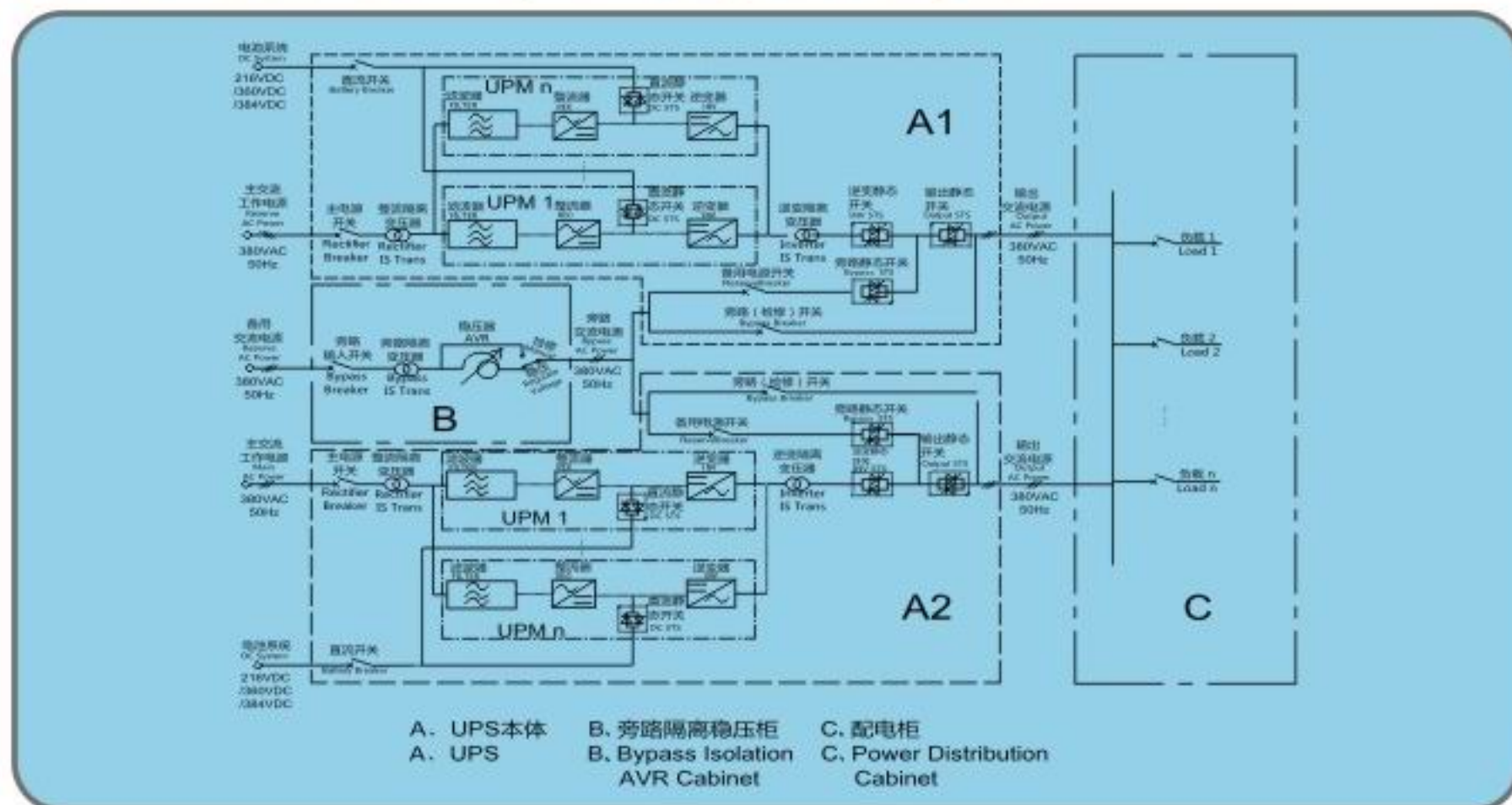
- Same capacity UPS can connect parallel directly;
- Different capacity UPS can connect parallel directly;
- Same capacity, different brand UPS can connect parallel directly;
- Different capacity, different brand UPS can connect parallel directly;

Parallel Operation System Options

- Bypass Cabinet For Maintenance
- SCT Synchronize Controller
Allow non-parallel two sets or multi-sets UPS still running synchronously on power supply ineffective. SCT could make a independent but different capacity UPS running synchronous.
- PSPD-Power System Parallel Device
The output of two set of ups could be paralleled by use a PSPD, Slave UPS with Master UPS always keep the output phase synchronization. If one UPS fails, the PSPD through additional bypass system automatically connected to another UPS and realized uninterrupted power supply. Even different brands of UPS can also be achieved as described above.
- Static Transfer Switch
Using STS can be achieved between the two-way power switch without disturbance;0ms switching time can be realized in the phase synchronization of two ways power case.

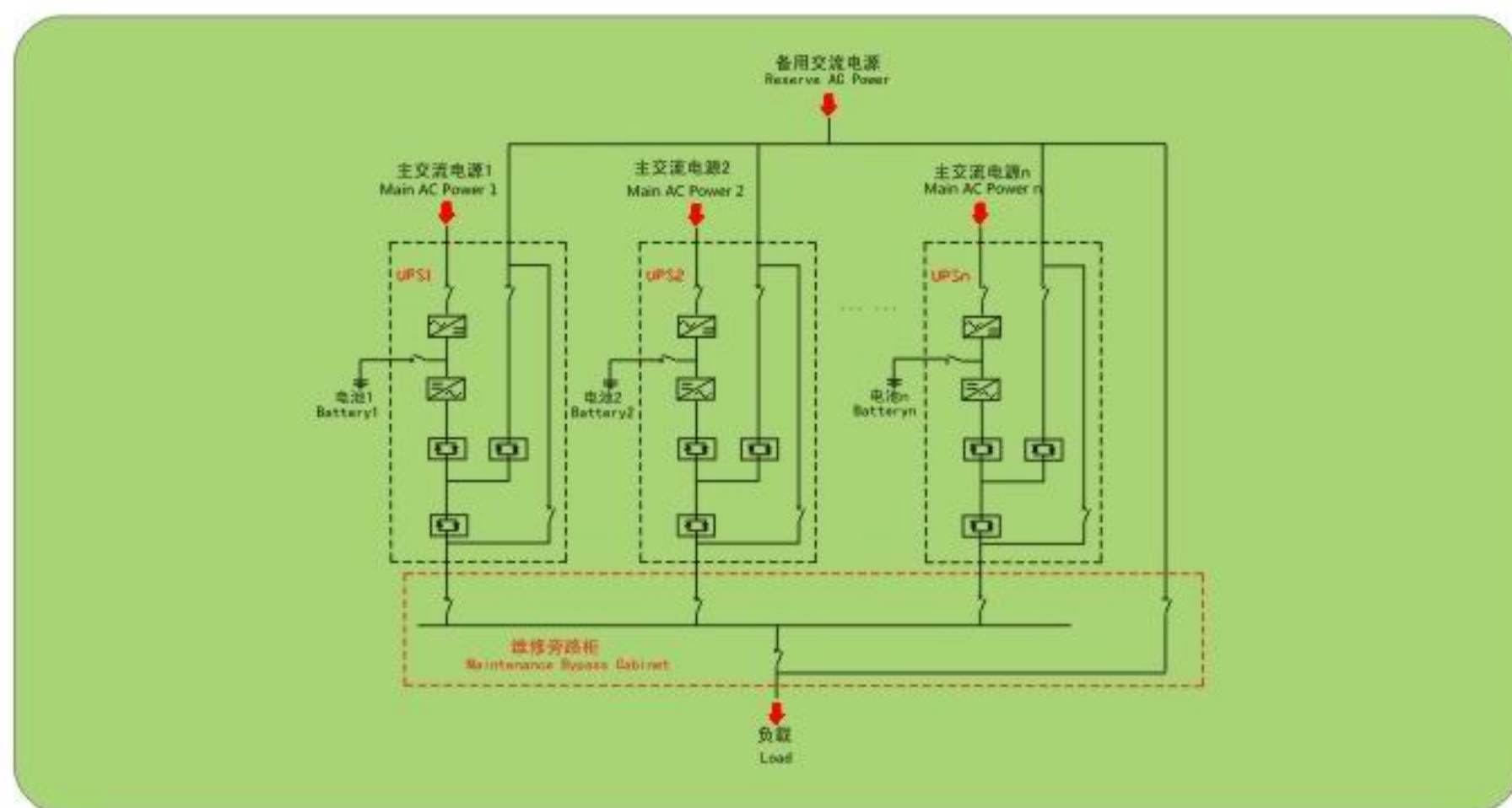
1. 并联UPS标准配置单线图

Parallel UPS standard configuration single line diagram



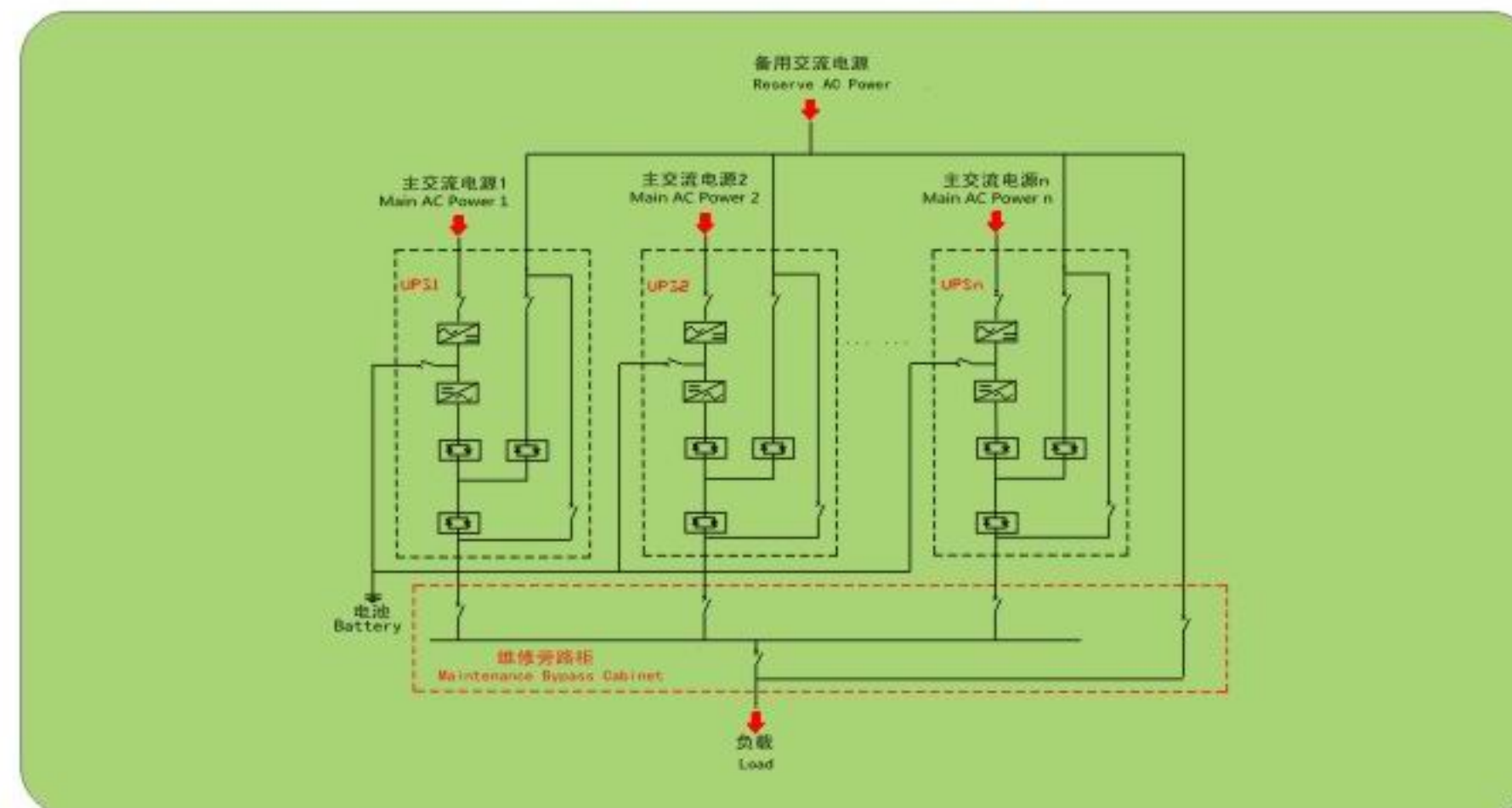
2. 多台UPS并机各配置独立的电池组

Multiple Set of UPS Parallel Respectively Configuration Dependent Battery



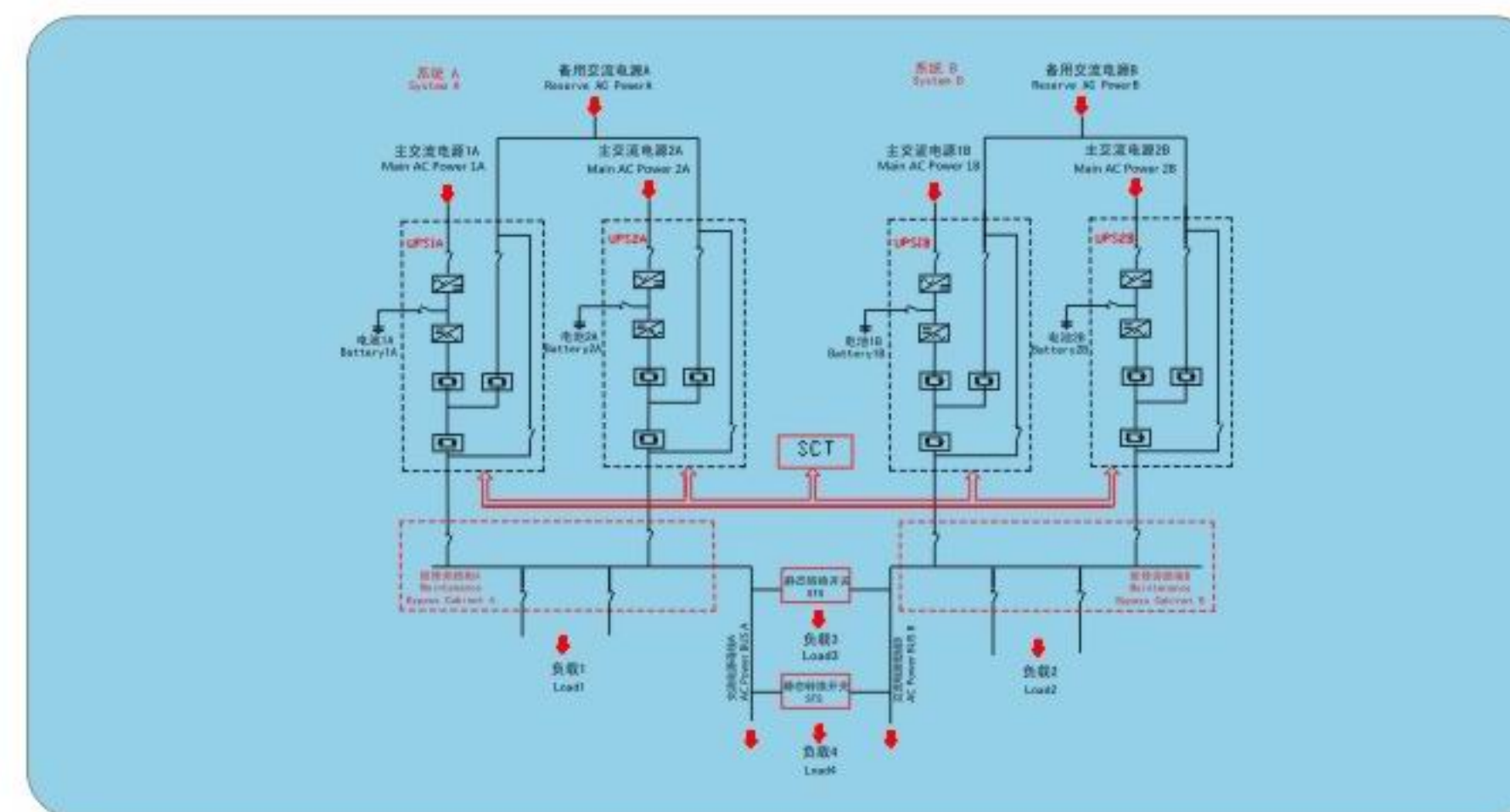
3. 多台UPS并机配置共用电池组

Multiple Set of UPS Parallel Configuration Share Of Battery



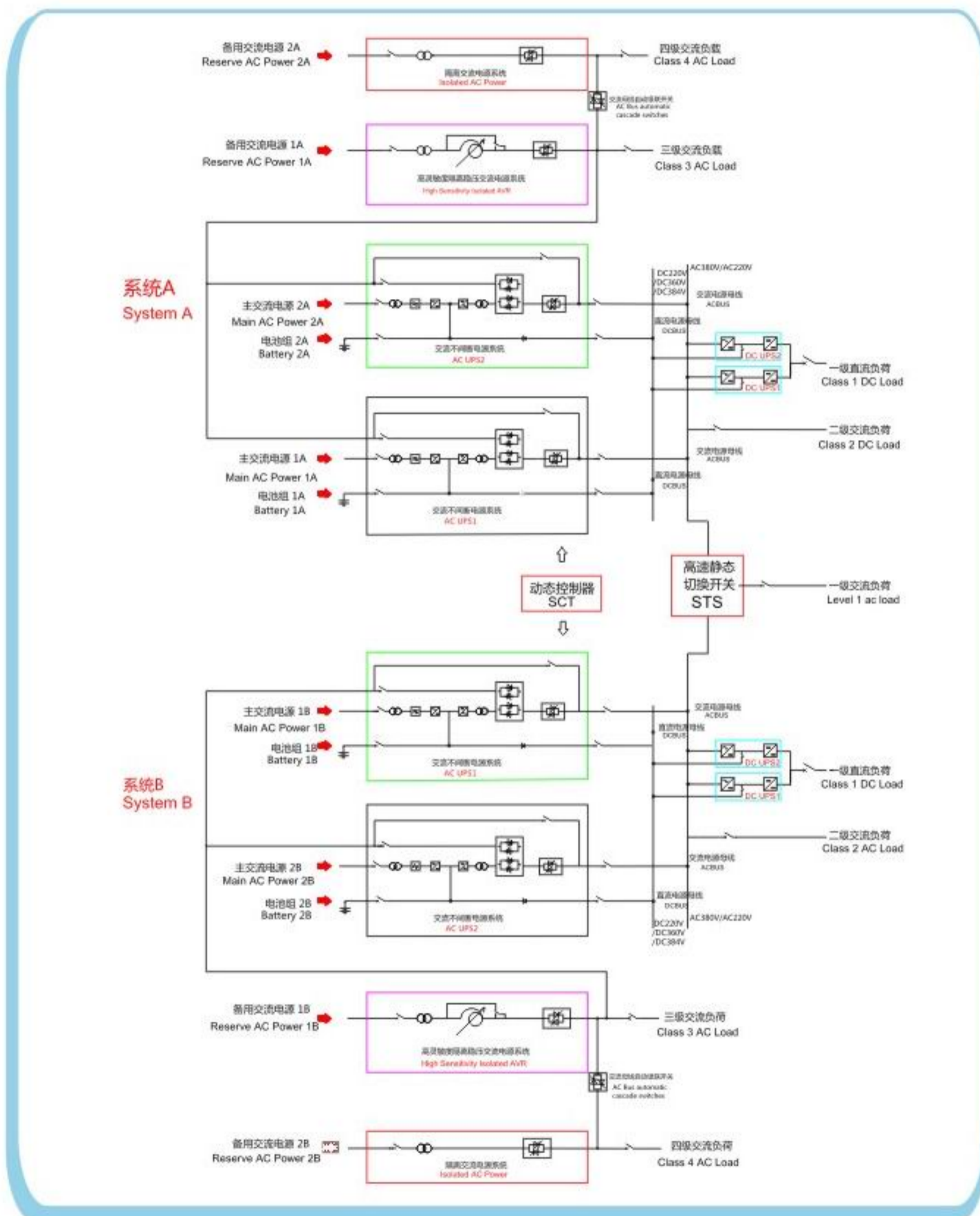
4. 动态双总线配置

Dynamic Double Bus Configuration



5.动态多总线配置----精细化智慧型电源平台

Dynamic Multiple Bus Configuration----Meticulous Intelligent Power Supply Platform



电源平台性能特点：

- A、根据不同负荷性质，提供不同质量的供电电源，实现负荷的精细化管理。分为直流一级负荷、交流一级负荷、交流二级负荷、交流三级负荷、交流四级负荷。
- B、智能电源平台由交流UPS、直流UPS、DC\DC模块、高灵敏度隔离稳压电源、隔离电源、有源滤波模块构成。
- C、各单元采用“即插即用”模块化设计，可根据客户需要随时配置。
- D、各种电源间实现无扰动切换，相互备用，真正达到了99.999%的可靠性。
- E、UPS直流DC220V/DC360V/DC384V电池系统可共用，实现集中管理。
- F、整个智能电源平台在“电源设备生命周期管理系统”的管理下运作。该系统可实现：
 - (1) 平台中的关键器件、部件使用寿命预警，比如：变压器、开关、控制板、可控硅、IGBT、静态开关、接触器等；可实现按计划维护。
 - (2) 可自主设定各电源之间的切换逻辑，或者按系统预设切换逻辑。
 - (3) 可自主设定各路电源的最大输出功率，也可根据系统预设的最大输出功率运行。

电源平台工作原理：

- 1、系统A与系统B完全相互热备份工作。
- 2、系统A：正常状态时，UPS1、UPS2同时工作，同时给一级直流负荷、一级交流负荷及二级交流负荷供电。两台UPS均分带载，各承担50%负载。若其中有一台UPS发生故障，该UPS退出，另外一台UPS承担100%负载，保证对负荷的供电。
- 3、若两台UPS均发生故障，则切换至旁路系统，由高灵敏度隔离稳压电源为系统供电，保证系统的正常运行。当高灵敏度隔离稳压电源发生故障，通过STS（静态切换开关）切换至隔离电源，由隔离电源为整个系统供电，保证系统的供电始终畅通。
- 4、系统B同上。
- 5、若其中某一系统（以A为例）发生故障，通过SCT（系统动态控制器）及STS切换至另一系统B，由B为系统A的一级、二级负荷供电，保证重要负荷的供电畅通。
- 6、综上所述，在各种故障状态下，均可以保证系统的一、二级重要负荷的供电始终畅通，大大提供系统的稳定性及可靠性。

Power Platform Performance Characteristics:

- A、 Depending on the different load, provide power supply of different quality, realize meticulous management of load. Divided into class 1 DC load and class 1 AC load, class 2 AC load, class 3 AC load, class 4 AC load.
- B、 Intelligent Power Platform consist of AC UPS, DC UPS, DC\DC module, high sensitivity stabilized voltage supply, isolated power supply, and active power filter.
- C、 Each unit is "plug and play" modular design, configured according to customer needs at any time.
- D、 Among the various power supplies switch without disturbance and alternate with each other, thereby achieving the 99.999% reliability.
- E、 UPS DC220V /DC360V/DC384Vbattery system can be shared to achieve centralized management.
- F、 Intelligent Power Platform runs under “the supervision of the power equipment lifecycle management system” . The system can be realized:
 - (1)Warning the key devices and components life, such as: transformers, switches, control boards, SCR, IGBT, static switches, contactors, etc. ; It can be achieved according to plan to maintenance.
 - (2)Can be set each power supply switching logic independently, or choose system preset switching logic.
 - (3)Can be set the maximum output power of each power supply independently, can also

Power Supply Platform Working Principle

- 1、 System A and system B are working of mutual hot backup completely.
- 2、 System A: In the normal state, UPS1, UPS2 are working at the same time, and providing power supply to class1 DC load, class1 AC load and class 2 AC load. Two UPS sharing load, respectively 50% load. If one of UPS failure, then out of the system, and another UPS undertake 100% load, to ensure power supply to the load.
- 3、 If two UPS are fault, switch to bypass system. The high sensitivity stabilized voltage supply provide power supply for the system to ensure the normal operation of the system. When the high sensitivity stabilized voltage supply failure, switch to isolated power supply by the STS (static switch), and isolated power supply provide power supply for the entire system to ensure that the system power supply is always well.
- 4、 System B as same as system A.
- 5、 If one system (A for example) fail , switch to another system B by the SCT (system dynamic controller) and STS, system B supply power to class 1 and class 2 load of system A, to ensure that important load running well.
- 6、 In summary, in a variety of fault conditions, it can ensure that the important load of class 1 and class 2 running well, greatly improving the stability and reliability of the system.



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