

THE PROFESSIONAL POWER PEOPLE

艾迪森®

LDC®

for  
Industry POWER  
AC UPS/EPS/INVERTER  
DC POWER (DCUPS)/AVR



工业级 Industrial Grade  
核级 Nuclear Grade  
电源系统 Power System

LDC Technology Corp.  
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To be the most reliable industrial uninterrupted  
power supply manufacturer in the world.

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# Company Profile

Established in 1998 as a Sino-foreign joint venture, LDC Technology Corp. is a national high-tech enterprise backed by Shandong State-Owned Capital and Qingdao State-Owned Capital. We specialize in the R&D, production, sales, and service of high-power power electronics conversion and control technologies, providing high-quality, ultra-reliable power supply solutions for:

Traditional energy sectors: Power industry, petroleum, chemical, coal chemical  
 New energy sectors: Nuclear power, solar thermal power, hydrogen energy  
 Strategic emerging industries: New materials, semiconductors

## Core Power Electronics Conversion Equipment & Solutions

1. Industrial-Grade Power Supplies (380V-10KV)  
 Industrial UPS, Emergency Power Supply (EPS), DC Power Supply (RPS)  
 Capacity: 2.5MW/unit (up to 10MW/unit)  
 Industrial-Grade Green Hydrogen Power Supplies
2. Grid-connected (SCR+IGBT) & Off-grid (IGBT+SCR) electrolysis power systems  
 Capacity: 20MW/unit (up to 50MW/unit)
3. "Direct Green Power" Generation & Supply Systems (380V-10KV)  
 Photovoltaic / Wind / Hybrid (PV+Wind+Storage) direct power systems  
 Capacity: 20MW/unit (up to 50MW/unit)



After over two decades of innovation, LDC has become a market leader in:

Traditional energy: Power, petrochemical, coal chemical

New energy: Solar thermal power

Industrial UPS (exported to 40+ countries & regions)

Corporate Vision & Achievements

Adhering to a "customer-centric" philosophy and the corporate spirit of "Rise, Transform, Believe, Coexist," LDC has grown into a premium industrial power brand through relentless innovation and craftsmanship.

Key Recognitions:

National High-Tech Enterprise

National "Specialized & Sophisticated" SME (Little Giant)

Shandong/Qingdao "Specialized & Sophisticated" Enterprise

Qingdao "Hidden Champion" & "Famous Brand" Enterprise

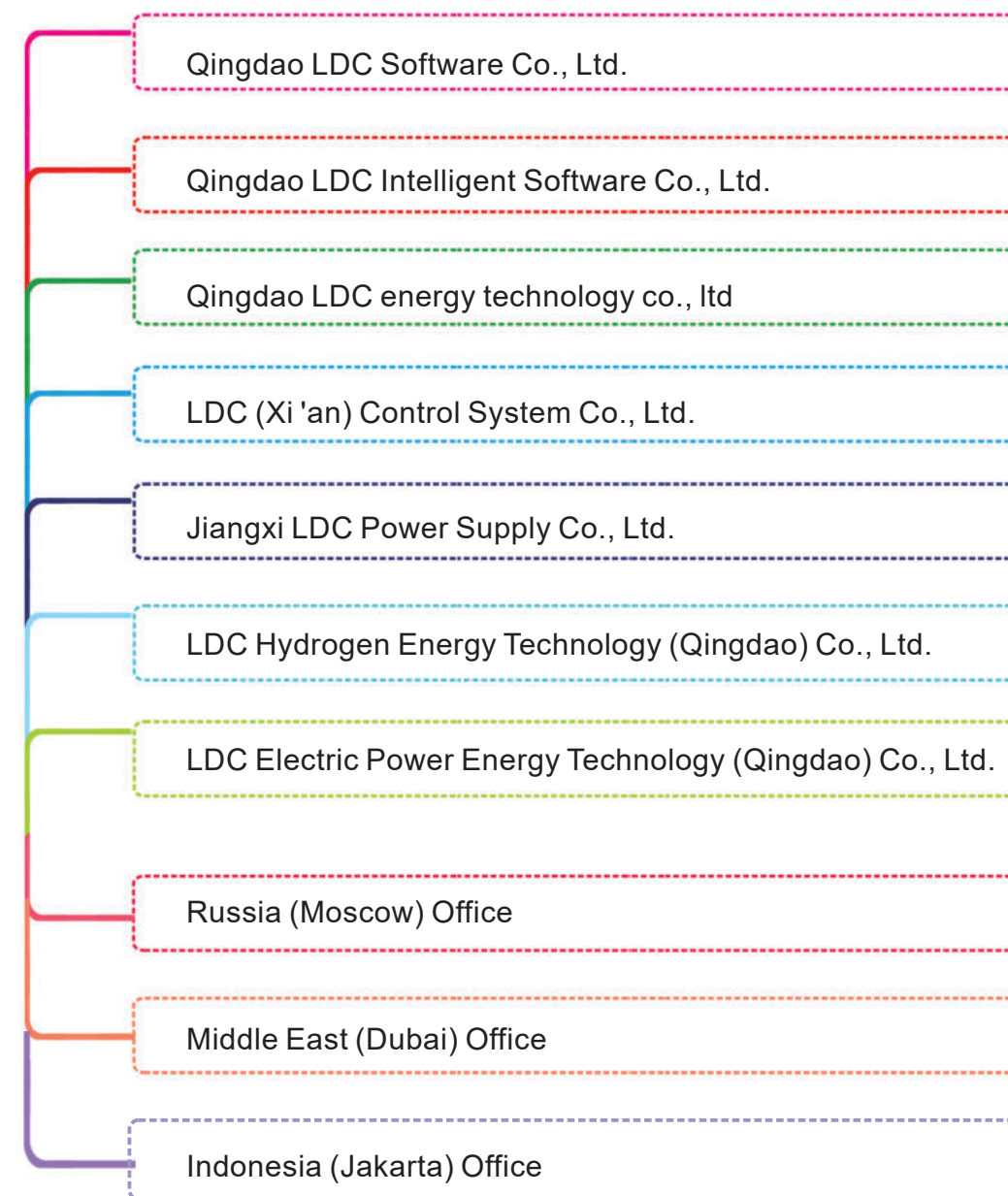
Qingdao Enterprise Technology Center

LDC actively participates in drafting Chinese national & industry standards for power supply technologies, reinforcing our role as an industry pioneer.



## Enterprise atlas

**LDC Technology Co., Ltd.  
is a wholly-owned holding company:**



## LDC Business Segment

01

### Industrial power supply (380V-10KV)

#### 1、low-voltage industrial power supply

- Industrial uninterruptible power supply UPS
- Industrial emergency power supply EPS
- Industrial DC power supply RPS

Capacity: 2.5MW/ set,  
up to 10MW/ set

#### 2、Medium voltage industrial power supply

- Industrial medium voltage uninterruptible power supply UPS
- Industrial medium-voltage emergency power supply EPS

Voltage:  
3KV\6KV\10KV  
Capacity:  
up to 20MW/ set

02

### Industrial grade green power supply for hydrogen production

- Grid-connected hydrogen production power supply (SCR+IGBT)
- Off-grid hydrogen production power supply (IGBT+SCR)

Capacity: 20MW/ set,  
up to 50MW/ set

03

### "Green power direct supply " power generation and power supply system(380V-10KV)

- PV green electricity direct supply power generation and power supply system
- Wind power green electricity direct supply power generation and power supply system
- Wind-solar-storage integrated green electricity direct power generation and power supply system

Capacity: 20MW/ set, up to 50MW/ set

## Our Clients

### Top Five Power Generation Groups



### Top Two Engineering & Construction Giants



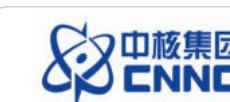
### Big Three Petrochemical Corporations



### Big Four Coal Industry Leaders



### Six Elite Power Groups & Top Three Nuclear Operators



### Premium International Clients



# ★ Since 1998 ★

Specializing in industrial power products for 20 years.

— continuously serving the **industrial** market —

63 acres fully enclosed factory area

10,000 square meters of dust-free production workshop

10 industrial UPS assembly lines.

Professional inspection and testing equipment

Advanced whole machine test equipment

2.5MW industrial UPS testing station.

Focus on the design, development and manufacturing of industrial UPS.



## LDC Industrial UPS

At present, the industrial uninterruptible power supply with the highest performance-price ratio on the market .

- 01 The sixth in the world and the first in China;
- 02 The earliest enterprise engaged in industrial UPS operation in China (since 2000)
- 03 The only enterprise in China that only engages in industrial UPS operation. "
- 04 "Industrial UPS has the largest assembly plant and the fastest delivery speed in China.(10 sets or less in stock); "
- 05 "The domestic and overseas" Belt and Road "power supply projects have the strongest implementation capacity.
- 06 Special electrical products have the strongest ability of non-standard customization.
- 07 The integrated design based on industrial UPS, rectifier power supply, charging power supply and inverter has the strongest ability. "
- 08 The warranty period is the longest (five years), and the free inspection period is the longest (once a month for ten consecutive years);
- 09 The free inspection period is the longest (once a month for ten consecutive years)

**Industrial uninterrupted power supply created by the world's first brand, safe and trouble-free and reliable for up to 20 years;**

**LDC Super "Explosive Products"  
—— SDP "Flying" series**

Ten-year maintenance-free, reliable and perceivable.

- **Circuit breakers**  
The top three brands in the world are adopted: Swiss ABB, French Schneider and German Siemens.
- **Silicon controlled rectifier**  
The world's first brand, Germany SEMIKRON, is adopted.
- **IGBT for inverter**  
Adopt the top two brands in the world, FUJI of Japan and Infineon of Germany.
- **Electrolytic capacitor for DC bus**  
The first brand in the world, Japanese "NICHICON nichicon", is adopted.
- **Control panel electrolytic capacitor**  
The world's first brand, Japanese "NICHICON nichicon", is adopted.
- **Filter capacitors**  
The input, output and bypass AC filter capacitors adopt the world's first brand, and Canada's "EACO Italian Shell";
- **Fan**  
The cooling fan adopts the world's first brand, Germany "EBMpapst".
- **Terminal strip**  
Adopt the world's first brand, Germany "Phoenix".
- **Connector**  
The world's first brand, Japan's "JST", is adopted.
- **Control chip**  
TI Texas Instruments of the United States.
- **The intelligent robot "Little Ai" can sense the reliability of equipment operation for 1 second.**

**High-reliability industrial-grade uninterruptible power supply UPS**

**Designed for the harshest application environment**

- |  |  |
|--|--|
| 1. Designed to protect critical process industries.  | 7. Wide input voltage range, allowable tolerance of -40% to 30%.                       |
| 2. Robust shell (2mm thick heavy steel structure)  | 8. All metal shielding of control board and control line, higher EMI performance       |
| 3. Eight degree seismic design, can resist 9 magnitude earthquake                            | 9. Sealed control unit, no cooling air duct, highly dustproof                          |
| 4. Standard IP31 protection level  | 10. Compared with the UPS international standard IEC62040-2, it provides EMC immunity; |
| 5. Optional easy-to-replace dust-proof filter and dust-proof and splash-proof housing (IP52) | 11. Use low temperature resistant flame retardant power cable                          |
| 6. Operate safely under ambient temperature of -30°C ~ +50°C                                 | 12. Double redundant over-voltage protection system.                                   |

**Especially suitable for industrial loads**

1. Allow 100% non-linear load.
2. Allow 100% unbalanced load.
3. Allow 100% power frequency rectifier load (motor driver, welding equipment, switching power supply, etc.)
4. It can allow large current impact loads such as motors, lamps, capacitive, etc.

**Standard electrical characteristics of industrial UPS**

1. Dual mains input.
2. Three-phase input, single-phase output
3. Built-in input and output isolation transformer.
4. Standard configuration bypass isolation transformer and voltage regulating transformer.
5. Internal maintenance bypass.
6. The rectifier can withstand the impact of the grid voltage up to 6 times or more, (usually SCR rectifier is used); more than 10 times the load current impact
7. The inverter can withstand the current surge current of the load more than 6 times
8. The bypass system withstands the impact current of the load more than 10 times
9. Ultra-long design life, up to 400,000 hours

## Industrial UPS

A true industrial standard

- The whole series of three-in single-out design (three-phase input, Single-phase output) three in and three out (optional).
- Infinite parallel redundant system of multiple single cameras.
- It can accept multiple AC and DC power inputs of different phases and frequencies at the same time.
- Single-phase output UPS capacity can reach 360KVA, and three-phase output UPS capacity can reach 2.5MVA.

UPS system parallel scheme

- The parallel redundant system adopts the design of three groups of AC static switches, which completely solves the problem of single point failure and interlock failure in the system.
- Parallel redundant systems can be connected infinitely in parallel without the need for parallel cabinets. Each unit only needs one communication line, and multiple hosts can realize the parallel redundant system; the communication lines of multiple parallel redundant systems are connected in a ring, and at the same time Carrier communication is carried out through the host output connection, even if one or two communication lines are accidentally disconnected, it will not affect the parallel operation of multiple machines.

### UPS system design features

The following parallel schemes can be realized

- UPS of the same capacity can be directly connected in parallel.
- UPSs of different capacities can be directly connected in parallel.
- UPS of different brands of the same capacity can be directly connected in parallel.
- Different brands of UPS with different capacities can be directly connected in parallel.

Parallel system options

- Maintenance bypass cabinet
- SCT synchronous controller: allow two non-parallel connection or multiple UPSs are still synchronized in the case of power failure. SCT can make LDC UPS an independent .the amount of UPS synchronization.
- PSPD-Power System Parallel Connection Device: Two UPSs can be connected in parallel through a power system and a convenient device. Slave UPS is always synchronized with the Mastr UPS system. If one of the UPS fails, PSPD automatically connects to another through an additional bypass system
- UPS. Even UPSs of different brands can Now. STS-static switch: Use STS to switch between two power sources without disturbance; when the phases of the two power sources are synchronized, 0ms switching time can be achieved.

## SDP series of industrial UPS

### Product description

This series of products is designed according to the industrial standard, adopts the "Functional" Modular design, and realizes the infinite-platform parallel redundant operation based on the proprietary magnetic parallel technology of LDC Choosing the configuration of power equipment life cycle management system can realize fault detection, fault automatic maintenance and life prediction of equipment.

The series of products are divided into three-in single-out and three-in three-out two models.

Single machine system capacity up to 2.5 MVA,  
SINGLE-PHASE UPS power module capacity: 10kVA, 20kVA, 30kVA, 40kVA, 60kVA, 100kVA, 125kVA, 200kVA, 250kva.  
THREE-PHASE UPS power module capacity: 10kVA, 20kVA, 30kVA, 40kVA, 60kVA, 100kVA, 125kVA, 200kVA, 250kVA.

### Performance characteristics

#### 1. Fully modular design

"Functional" modular design (divided into SDP series and MDP series), the rectifier unit, inverter unit, and isolation diode are integrated in one module, which is convenient for plugging and unplugging, which can greatly shorten the maintenance time.

#### 2. Fully redundant design

Multiple power modules are operated in parallel to form N+1 redundancy; the microprocessor of the control power supply, the main control board, and the cooling fan all adopt double redundancy design, and the single-point failure of the thermoelectric power will not affect the operation of the whole machine; The control adopts 1+1 redundant closed-loop control to ensure that even if one feedback fails, it will not produce high-voltage output and burn the load.

#### 3. Multi-language LCD display (Chinese, English, Russian, Spanish)

Large-screen LCD liquid crystal display, UPS monitoring software, using multiple languages to display, the operation is simple and clear, there is no language barrier to the operation, and you can learn it at a glance.

#### 4. Fully digital control

Use DSP and IGBT to control switch components: System stability and improvement of mechanical efficiency.

#### 5. Intelligent parallel hot backup

There is no need for parallel boards, just one communication line, and multiple hosts can run in parallel redundantly: the communication line between multiple parallel hosts is designed in a loop to form a closed loop, even if one is disconnected, it will not affect the multi-level parallel operation.

#### 6. Humanized control design

No procedural control restrictions, simple operation, different from other brands of UPS with strict operating procedures restrictions.

#### 7. Ultra-wide input voltage

In the case of full load, the input voltage is very wide, 300VAC-520VAC, and most UPSs rely on battery discharge to ensure stable output voltage, and they can still operate in a normal way.

#### 8. Intelligent detection and speed control of cooling fan

Any failure of the fan can be monitored on the UPS panel or through the RS232 interface. The fan speed can be automatically adjusted according to the load condition to extend the life of the fan and reduce noise.

9. The static switch has a very short switching time, which is a disturbance-free switching Using 32-bit DSP digital control technology and current type detection method, the switching time will be 0.

#### 10. Data recording capability

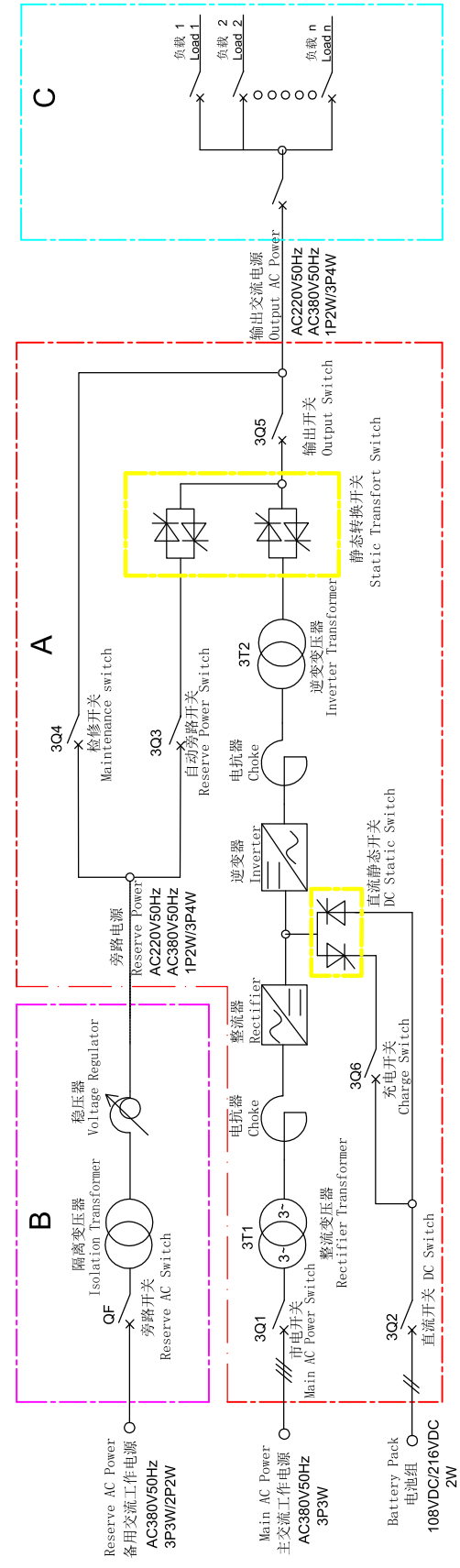
The data and time of each abnormal situation will be stored in the UPS, so the user can clearly understand any situation that occurs in the UPS, even if there is no power supply, the data stored in the UPS will not be cleared.

#### 11. Remote diagnosis and testing

Through the Internet, multiple UPSs can be remotely diagnosed and tested to ensure that your system is always in the most reliable operation.

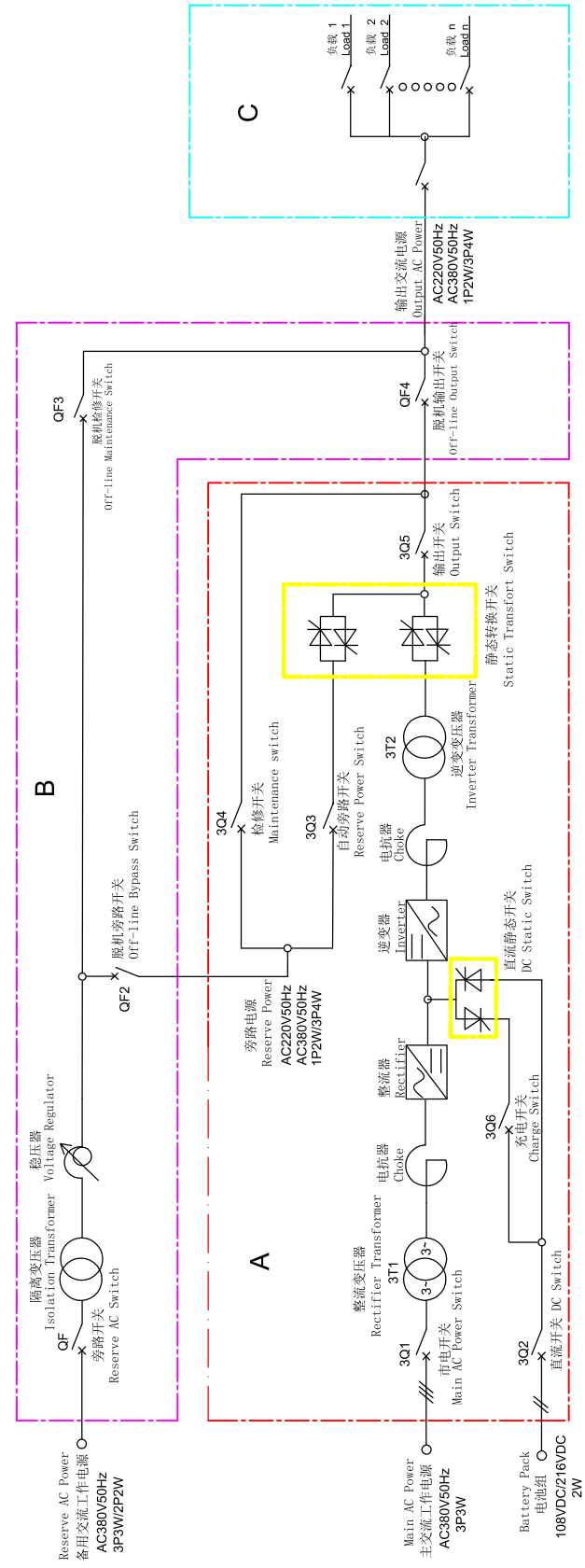
#### 12. Intelligent communication interface

One RS232, four RS485, and standard communication protocol form an intelligent monitoring system. At the same time, it is connected to SNMP devices to realize remote network management. There are more than 20 pairs of passive dry contacts, which can be used at will.



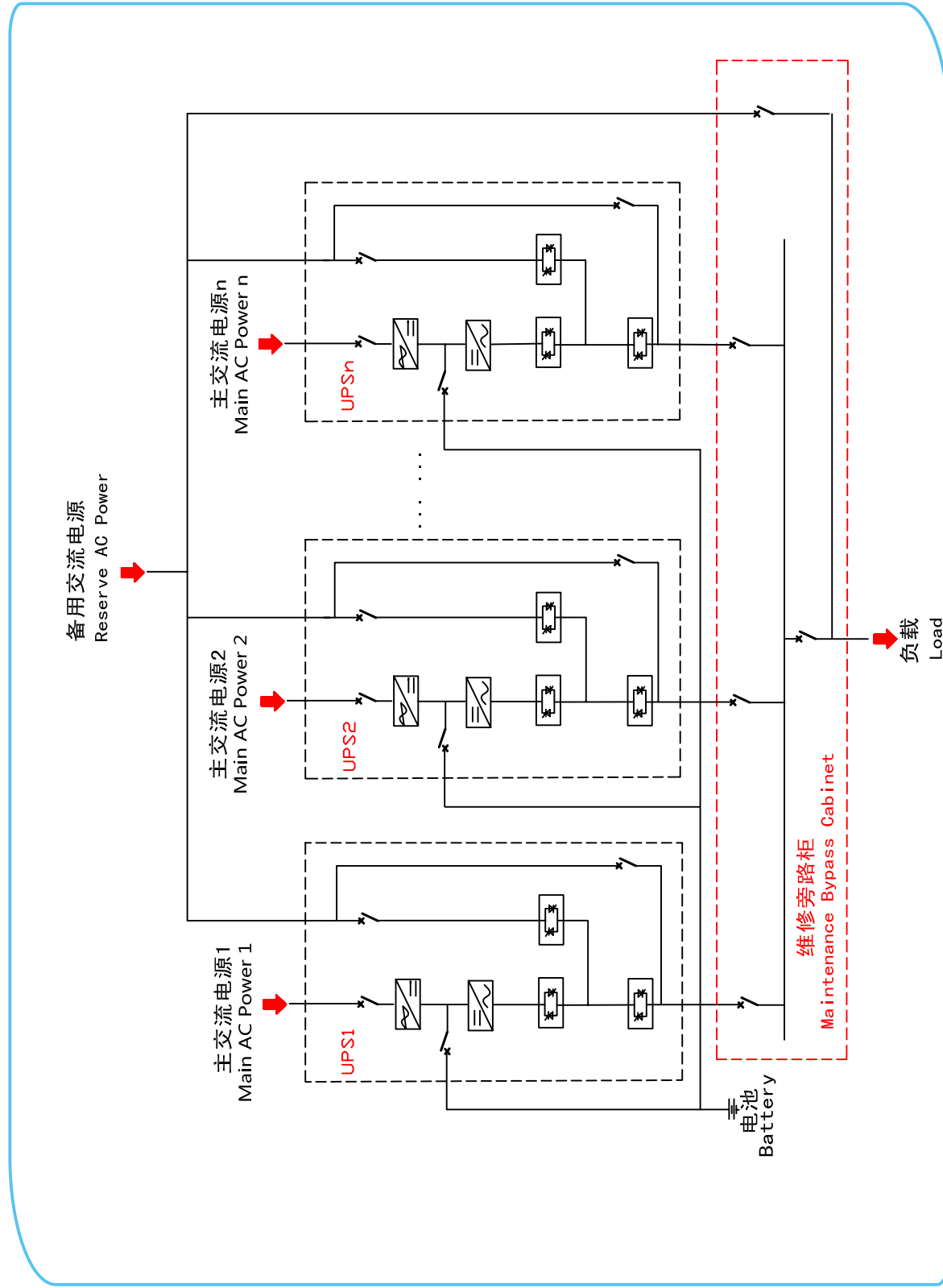
A、UPS 主机柜 B、旁路隔离稳压柜 C、配电柜  
A、UPS Cabinets B、Bypass Cabinets C、Distribution Cabinet

Industrial Grade three-in single-out, three-in three-out SDP system

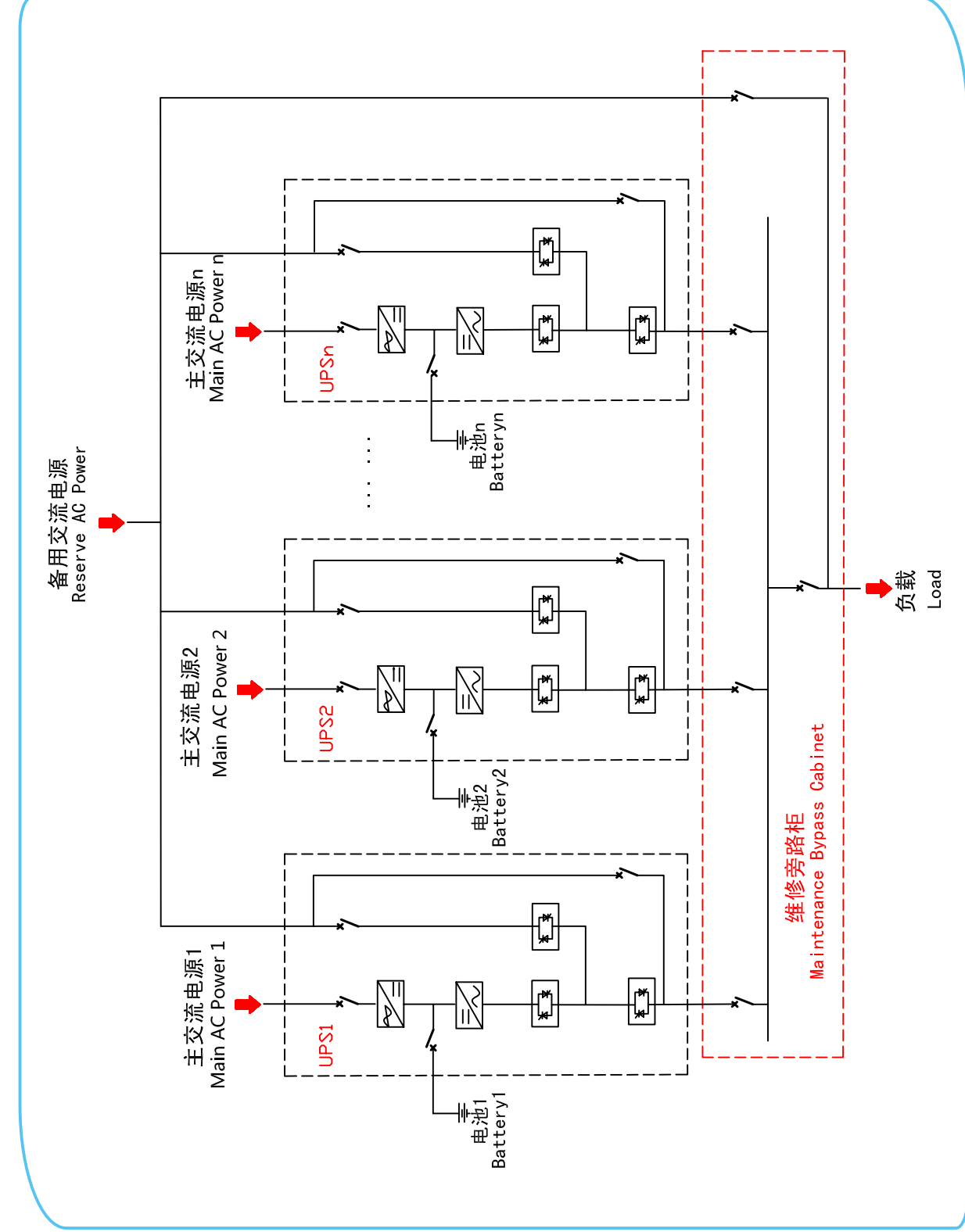


A、UPS 主机柜 B、异地检修旁路隔离稳压柜 C、配电柜  
A、UPS Cabinets B、Off-line Maintenance Bypass Cabinets  
C、Distribution Cabinet

Industrial Grade three-in single-out, three-in three-out SDP system (with offline bypass)



Multiple UPS parallel machines are configured with shared battery packs



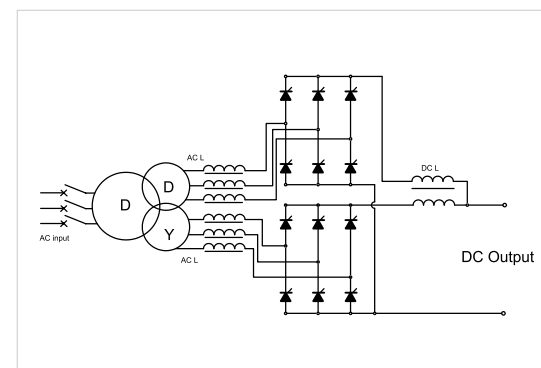
Several UPS parallel machines are each equipped with independent battery packs

### Technical characteristics

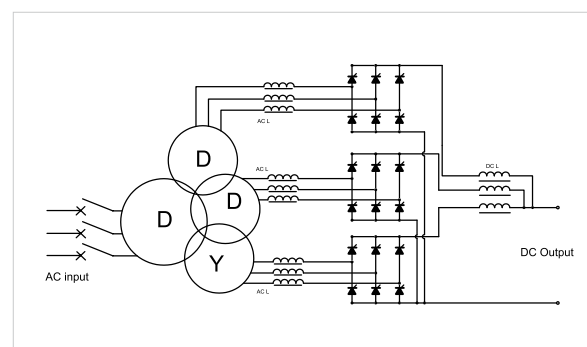


- 1. The rectifier adopts 12-pulse, 18-pulse or 24-pulse SCR rectification, and the inverter adopts IGBT inverter.
- 2. 32-bit DSP full digital control technology
- 3. Parameter control and setting can be carried out through software program
- 4. ABM fast charging design, can be set through the panel
- 5. Input power factor up to 0.95.
- 6. Multiple infinite parallel redundant systems.
- 7. Very high overall efficiency.
- 8. Input current distortion less than 7%.
- 9. International standard communication protocol.

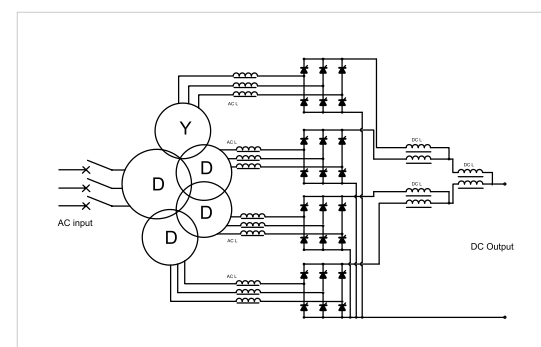
Magnetically integrated 12,18,24 pulse thyristor phase-shift rectifier with better performance, it can greatly reduce power network pollution (no additional filter device is needed, input harmonic current THDi is less than 5% input power factor up to 0.98) and save the investment of upstream power grid transformer, emergency generator, cable, switch capacity, additional filter configuration.



12 Pulse Full Bridge Control rectifier



18 Pulse Full Bridge Control rectifier



24 Pulse Full Bridge Control rectifier

### Application Industry

1. Petrochemical Industry, Coal Chemical Industry, fine chemical industry;
2. Oil & GAS (onshore, offshore platforms, pipelines, refining, floating production and storage) ;
3. Petrochemical (onshore, offshore platforms, pipelines, refining, floating production and storage of Oil) ;
4. Nuclear Power, photothermal power generation, hydrogen and other new energy sources;
5. Electronic, semiconductor;
6. Metallurgical Industry, glass industry;
7. Pharmaceutical Industry;
8. Other smart manufacturing industries.

### Application Scenario

#### Production Control and protection system

- Distributed control system
- Security System
- Furnace safety monitoring system
- Relay protection
- Automatic fire alarm system

#### Computer Information System

- Network computer monitoring system
- Control System peripherals
- Engineer station
- Computer Detection and monitoring system
- Fault recorder

#### Precision instrument and transmitter, actuator system

- Electrical measuring and protecting device
- Site temperature, pressure, flow, level
- Control actuator, solenoid valve, electrical

#### Production equipment

- Special Motors
- Special Valve
- Other automatic and protective devices



Product parameter list

Model kVA	SDP 10 15 20 30	SDP 50 60 80	SDP 100 120 160	SDP 250~300	SDP 350~400	SDP 450~500	SDP600
UPS type	Double isolation, double conversion online						
Efficiency	>95%						
UPS ambient temperature	-30~+50°C (customizable)						
UPS storage temperature	-30~+70°C						
Relative humidity	< 95% (non-condensing)						
Altitude	< 4500m (above sea level)						
Power reduced when Altitude >4500m	7%/km						
Ventilation method	1+1 redundant fan, forced air cooling, air supply up and down						
Noise	<60dBA			<80dBA			
Input and output cable connection	Bottom or Top (Selectable)						
Communication port	RS485(2)/ dry contact (1 group of 15 pairs), (SNMP optional)						
Specification	CE, EN50091-1,2	correspond					
	FCC CLASS A	correspond					
Circuit Protection	Short circuit protection	Rectifier Output/Backup Power Output/Inverter Output					
	Lightning protection	MOV					
	EMC protection	Input & Output					
	Isolation	Full isolation of mains power supply, backup power supply, DC power supply, and UPS output power supply					
Rectifier							
Model kVA	SDP 10 15 20 30	SDP 50 60 80	SDP 100 120 160	SDP 250~300	SDP 350~400	SDP 450~600	SDP600
Bridge rectifier	3P 6-pulse controllable rectification	3P 12-pulse controllable rectification	Three-phase 18-pulse controllable rectification		3P 24-pulse	3P 30-pulse	3P 36-pulse
Input isolation transformer	Standard configuration						
Rated input voltage (VAC)	190V/200V/208V/220V/230V/380V/400V/440V/460V/480V/500V/525V/600V/660V/690V						
Input Voltage range	-40% +35%						
Input Frequency	50/60Hz±10%						
Input Power Factor	>0.9	>0.95	>0.98				
DC Output Voltage	110VDC/216VDC/360VDC/384DVC/400VDC/480VDC						
DC output voltage accuracy (load 0~100% change)	±1%						
Efficiency	99%						

Model kVA	SDP 10 15 20 30	SDP 50 60 80	SDP 100 120 160	SDP 250~300	SDP 350~400	SDP 450~500	SDP600		
Inverter									
Bridge inverter	IGBT redundant configuration, DSP controlled inverter, non-IGBT direct parallel connection, modular design								
Output isolation transformer	Standard configuration								
DC input range	110VDC/216VDC/360VDC/384DVC/400VDC/480VDC±25%								
Rated output voltage	1P: 110V/115V/120V/127V/130V/220V/230V/240V/254V/265V/277V/288V/300V/345V/380V/400V 3P: 190V/200V/208V/220V/230V/380V/400V/415V/440V/460V/480V/500V/525V/600V/660V/690V								
Output phase number	Single Phase, Three phase								
Output power factor	0.4 leading~0.9 lagging								
Output frequency	50/60Hz±0.1%								
Output voltage stability	Static	±1%							
	Dynamic (0~100%~0)	±3%							
	Output voltage recovery time	After step load, it will recover to ±2% within 1 millisecond							
Overload capacity	125% is 10min, 150% is 1min								
Short circuit characteristics	Short circuit protection, current limited to 3 times the rated current, 100ms								
Output waveform	Sine wave								
Output waveform distortion	Linear load	< 2%							
	Non-linear load (crest factor 3:1)	< 5%							
Crest factor	3:1 (customizable>3:1 crest factor)								
Efficiency	> 95%								
DC cold start	Ok								
Bypass									
Automatic static switch	Thyristor SCR, (redundant design is optional)								
Rated voltage	220V/230V/240V/380V/400V/415V±20% (settable)								
Rated frequency	50/60Hz±5% (settable)								
Static bypass transfer time	0ms								
Inverter to static bypass	Test inverter, inverter failure, inverter input voltage excessive, inverter output voltage excessive								
Overload capacity	150%	30min							
	1000%	1min							
Mechanical parameters									
Model kVA	SDP 10 15 20	SDP 30 40 50	SDP 60 80	SDP 100 120	SDP 160 200	SDP 250~300	SDP 350~400	SDP 450~500	SDP600
Protection level	IP20,IP21,IP30,IP32,IP40,IP42 Optional, others can be customized								
W	600	800	1200	1800	2400	3000	4800	6000	6600
D	800				1000				
H <sub>1</sub>	1800(IP20、IP30、IP40)								
H <sub>2</sub>	2000(IP21、IP32、IP42)								
Weight(kg)	700~1000		1100~2000		2500~3000		3500~4000		4500~5000 5500~6000 >6000

### Product parameter list

Model kVA	SDP800	SDP1000	SDP1200	SDP1500	SDP1800	SDP2000	SDP2500
UPS type	Double isolation, double conversion online						
Efficiency	>95%						
UPS ambient temperature	-30~+50°C (customizable)						
UPS storage temperature	-30~+70°C						
Relative humidity	< 95% (non-condensing)						
Altitude	< 4500m (above sea level)						
Power reduced when Altitude >4500m	7%/km						
Ventilation method	1+1 redundant fan, forced air cooling, air supply up and down						
Noise	<60dBA			<80dBA			
Input and output cable connection	Bottom or Top (Selectable)						
Communication port	RS485(2)/ dry contact (1 group of 15 pairs), (SNMP optional)						
Specification	CE, EN50091-1,2	correspond					
	FCC CLASS A	correspond					
Circuit Protection	Short circuit protection	Rectifier/Backup Power/Bypass Switch					
	Lightning protection	MOV					
	EMC protection	Input & Output					
	Isolation	Full isolation of mains power supply, backup power supply, DC power supply, and UPS output power supply					

#### Rectifier

Model kVA	SDP800	SDP1000	SDP1200	SDP1500	SDP1800	SDP2000	SDP2500
Bridge rectifier	3P 24-pulse controllable rectification	3P 36-pulse controllable rectification	Three-phase 48-pulse controllable rectifier				
Input isolation transformer	Standard configuration						
Rated input voltage (VAC)	3*190V/200V/208V/220V/230V/380V/400V/440V/460V/480V/500V/525V/600V/660V/690V						
Input Voltage range	-40% +35%						
Input Frequency	50/60Hz±10%						
Input Power Factor	>0.98						
DC Output Voltage	400VDC/480VDC/760VDC						
DC output voltage accuracy (load 0~100% change)	±1%						
Efficiency	99%						

#### Inverter

Model kVA	SDP800	SDP1000	SDP1200	SDP1500	SDP1800	SDP2000	SDP2500
Bridge inverter	IGBT DSP controlled inverter						
Output isolation transformer	Standard configuration						
DC input range	400VDC/480VDC/760VDC±25%						
Rated output voltage	190V/200V/208V/220V/230V/380V/400V/415V/440V/460V/480V/500V/525V/600V/660V/690V						
Output phase number	Three phase						
Output power factor	0.4 leading~0.9 lagging						
Output frequency	50/60Hz±0.1%						
Output voltage stability	Static	±1%					
	Dynamic (0~100%~0)	±3%					
	Output voltage recovery time	After step load, it will recover to ±2% within 1 millisecond					
Overload capacity	125% is 10min, 150% is 1min						
Short circuit characteristics	Short circuit protection, current limited to 3 times the rated current, 100ms						
Output waveform	Sine wave						
Output waveform distortion	Linear load	< 2%					
	Non-linear load (crest factor 3:1)	< 5%					
Crest factor	3:1 (customizable>3:1 crest factor)						
Efficiency	> 95%						
DC cold start	Ok						

#### Bypass

Automatic static switch	Thyristor SCR, (redundant design is optional)						
Rated voltage	380V/400V/415V±20% (settable)						
Rated frequency	50/60Hz±5% (settable)						
Static bypass transfer time	0ms						
Inverter to static bypass	Test inverter, inverter failure, inverter input voltage excessive, inverter output voltage excessive						
Overload capacity	150%	30min					
	1000%	1min					

#### Mechanical parameters

Model kVA	SDP800	SDP1000	SDP1200	SDP1500	SDP1800	SDP2000	SDP2500
Protection level	IP20, IP21, IP30, IP32, IP40, IP42 Optional, others can be customized						
W	7200	9000	9600	9600	Customizable		
D	1000						
H <sub>1</sub>	1800(IP20, IP30, IP40)						
H <sub>2</sub>	2000(IP21, IP32, IP42)						
Weight(kg)	10000	12000	15000	20000	Customizable		

## NMP series UPS of industrial grade

**Product description:** This series of products is designed according to the industrial standard, adopts the "Functionality" Modular design, and realizes the infinite-platform parallel redundant operation based on the proprietary magnetic parallel technology of LDC. Choosing the configuration of power equipment life cycle management system can realize fault detection, fault automatic maintenance and life prediction of equipment. This series of products is only three-in single-out model. Stand-alone system capacity up to 200KVA.

**Application industry:** The NMP series industrial-grade modular smart UPS is designed for large-scale power plants according to the characteristics of industrial system power grids. It is mainly used in the production line site of distributed power supply and the DCS control system, communication system, monitoring system and network management of centralized power supply. Centers and other important equipment and occasions that need to provide highly reliable uninterrupted power supply.

**Typical application:** Nuclear power plant, Coal-fired power plants, Oil-fired power plant, Gas-fired power plant, Hydropower plant, Coal chemical industry, Chemical industry, UPS description for other industrial applications

### Performance characteristics:

- Fully built-in design  
The input and output isolation transformers, DC isolation diodes, manual, and automatic bypass are all designed in the UPS. No additional equipment is required.
- Fully redundant design  
The main components such as rectifier, inverter, static bypass, as well as its control power supply, micro-processing of the main control board, and cooling fans are all adopted double redundant operation, any single point of failure will not affect the operation of the whole machine.
- All Chinese culture display (multilingual display available)  
The large-screen LCD display and UPS monitoring software all display Chinese culture, and the operation is simple and clear. So that managers can operate without language barriers, and they can learn it as soon as they learn.
- Fully modular design  
"Plug and Play" modular design, easy and fast maintenance and repair, which can greatly shorten the maintenance time.
- Fully digital and hardware compatible control  
Use 32-bit DSP and IGBT and other control and switch components: effectively increase system stability and improve efficiency.
- Humanized operation design  
No procedural control restrictions, simple operation, different from other brands of UPS with strict operating procedures restrictions.
- Ultra-wide input voltage  
In the case of full load, the input voltage is very wide from -25% to +35%. Therefore, when most UPSs rely on battery discharge to ensure a stable output voltage, they can still operate in a normal way.
- Intelligent monitoring and cooling fan speed control  
Any fan failure can be monitored on the UPS panel or dry contact interface, and the fan speed can be automatically adjusted according to the load condition to extend the life of the fan and reduce noise.
- Very short static switch switching time  
In order to switch without disturbance, 32-bit DSP digital control technology and current-type detection method are adopted to reduce the switching time to zero.



## Product parameter list

Model (capacity KVA)	NMP ( 5K 10K 15K 20K 30K 40K 50K )	NMP ( 60K 80K )
UPS type	Double isolation, double conversion online	
effectiveness	> 93%	
UPS ambient temperature	-30~40°C (+55°C, full load running time 16h)	
UPS storage temperature	-30~+70°C	
Relative humidity	< 95% (non-condensing)	
high degree	< 1500m (above sea level)	
The power is reduced when the height>1500m	7%/km	
Ventilation method	1+1 redundant fan, forced air cooling, air supply up and down	
noise	<60dBA	
Input and output cable connection	Bottom or top	
Communication Interface	RS232 (1)/RS485 (1)/dry contact (1 group), SNMP optional	
Specification	CE, EN50091-1,2	conform
	FCC CLASS A	conform
Protect the circuit	Short circuit protection	Rectifier/Backup Power/Bypass Switch
	Lightning	MOV
	EMC filtering	input & Output
	insulation	Input/output fully isolated

### Rectifier

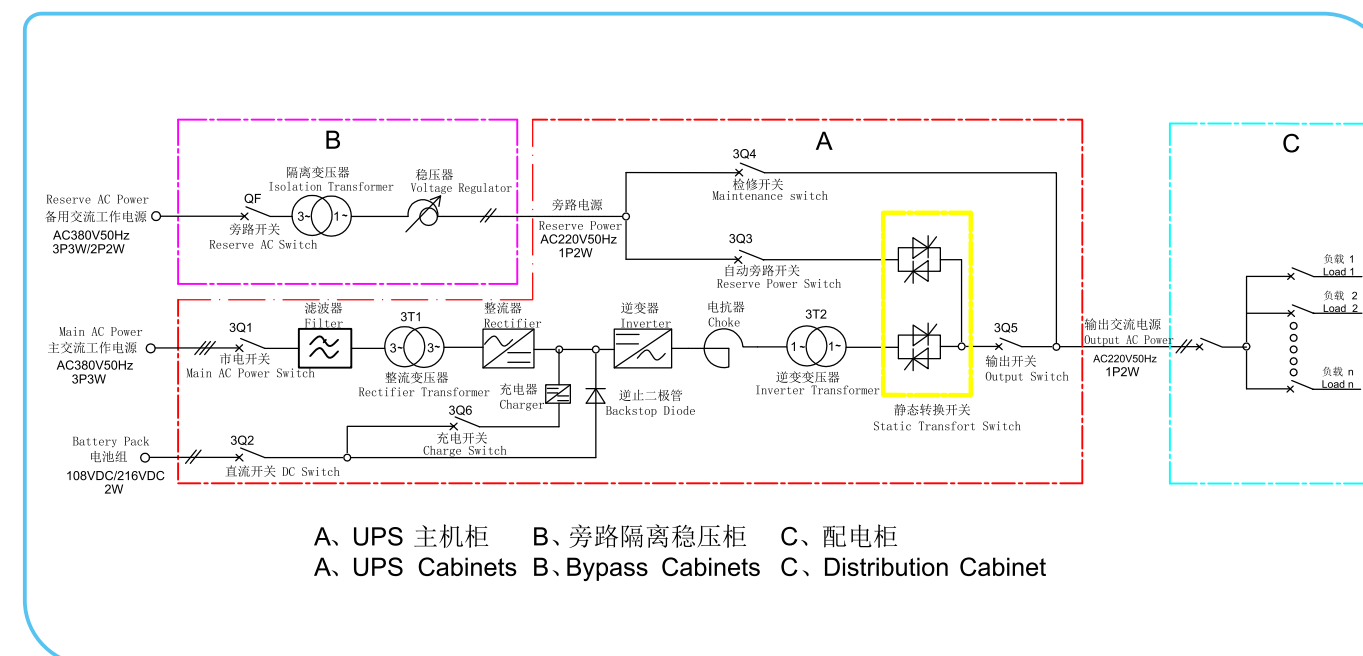
Bridge Rectifier	Three-phase 6-pulse controllable rectification	Three-phase 12-pulse controllable rectification
Rated input voltage (VAC)	380V-25%+30%, three-phase three-wire or three-phase four-wire	
Input frequency	50/60Hz±10%	
Input power factor	>0.75	>0.85
DC output voltage	110V/220V	
DC output voltage accuracy (load 0~100% change)	±1%	
efficiency	>0.85	>0.9

### Inverter

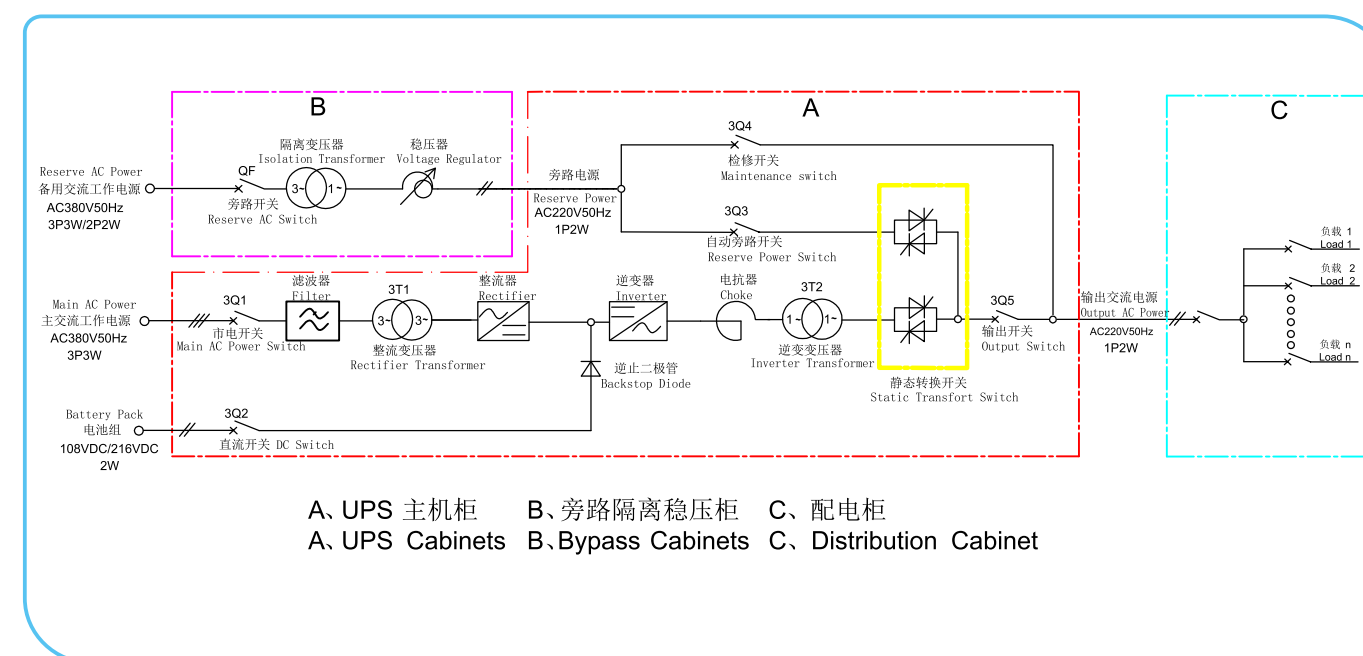
Bridge inverter	IGBT DSP controlled inverter IGBT	
DC input range	110VDC/220VDC±25%	
Rated output voltage	110V/220/230VAC , 2P2W或120V/240VAC , 2P2W	
Output power factor	0.8	
Output frequency	50/60Hz±0.1%	
Output voltage stability	Static	±1%
	Dynamic	±5%
	Output voltage recovery time	After the step load, restore to 2% within 10 milliseconds
Overload capacity	125% is 10min, 150% is 1min	
Short circuit characteristics	Short circuit protection, current limited to 3 times rated current, 100ms	
Output waveform	Sine wave	
Output waveform distortion	Linear load	< 2%
	Non-linear load (crest factor 3:1)	< 5%
Crest factor	3:1 (customizable>3:1 crest factor)	
efficiency	>94%	
DC cold start	OK	

Product parameter list

Model (capacity KVA)	NMP ( 5K 10K 15K 20K 30K 40K 50K )	NMP ( 60K 80K )
<b>bypass</b>		
Automatic static switch	Thyristor SCR	
Rated voltage	110V/220V/230V ±20% (settable) or 120V/240V ±20% (settable)	
Rated frequency	50/60Hz±5% (can be set)	
Static bypass transfer time	<0.4ms	
Inverter to static bypass	Test inverter, inverter failure, inverter input voltage is excessive, inverter output voltage is excessive	
Overload capacity	100%~110%	long-time running
	> 110%~125%	10min
	> 125%~150%	1min
	> 150%	100mS
<b>Mechanical parameters</b>		
model	NMP 5K 10K 15K 20K 30K 40K	NMP 60K 80K
Protection level	IP20, IP21, IP30, IP32, IP40, IP42 are optional, others can be customized	
Cabinet size	W	600
	D	800
	H <sub>1</sub>	1800(IP20、IP30、IP40)
	H <sub>2</sub>	2000(IP21、IP32、IP42)
weight(kg)	700~1000	1100~2000



NMP system schematic diagram (connected to battery pack, with charging function)



NMP system schematic block diagram (direct DC screen)

## SMP series industrial intelligent UPS

### Product description

This series of products are industrial-grade products designed according to industrial-grade standards; adopt a "plug and play" modular design; touch screen design, more comprehensive than the NMP series host information display, hard-wired to send more signals to the background, and background to receive information such as voltage and current is more diverse. Based on the patented technology of LDC's independent intellectual property rights of inverter magnetic parallel connection, it realizes unlimited parallel redundant operation; choose to configure the power equipment life cycle management system, which can realize the fault detection, automatic fault maintenance and life prediction of the equipment. This series of products are only three-in-single-out models. The single-machine system capacity can be up to 200KVA,

Coal Chemical Industry  
Coal fired power plant  
Oil-fired power plant  
Gas-fired power plant

### Typical application

Hydroelectric plant  
Nuclear Power, photothermal power, hydrogen and other new energy sources  
New Materials, semiconductors and other strategic emerging industries  
Other industrial applications

### Technical characteristics

- 1.7-inch touch screen display, easy to operate, intuitive and convenient, equipped with power equipment life cycle management system.
- Information such as voltage and current can be transmitted to the background through communication.
- The information on the touch screen can be operated manually.
- 32-bit DSP full digital control technology.
- Input power factor up to 0.90
- Multiple infinite parallel redundant systems
- Very high overall efficiency
- Input current distortion less than 7%
- International standard communication protocol

### ★ ★ Performance characteristics ★ ★

#### ● Fully built-in design

The input and output isolation transformers, DC isolation diodes, manual, and automatic bypass are all designed in the UPS. No additional equipment is required.

#### ● Fully redundant design

The main components such as the rectifier, inverter, static bypass, as well as the control power supply, the microprocessor of the main control board, and the cooling fan all adopt dual redundant operation, and any single point failure will not affect the operation of the whole machine.

#### ● All Chinese culture display (multilingual display available)

The large-screen LCD display and UPS monitoring software all display Chinese culture, and the operation is simple and clear. So that managers can operate without language barriers, and they can learn it as soon as they learn.

#### ● Fully modular design

"Plug and Play" modular design, easy and fast maintenance and repair, which can greatly shorten the maintenance time.

#### ● Fully digital and hardware compatible control

Use 32-bit DSP and IGBT and other control and switch components: effectively increase system stability and improve efficiency.

#### ● Humanized operation design

No procedural control restrictions, simple operation, different from other brands of UPS with strict operating procedures restrictions.

#### ● Ultra-wide input voltage

In the case of full load, the input voltage is very wide from -25% to +35%. Therefore, when most UPSs rely on battery discharge to ensure a stable output voltage, they can still operate in a normal way.

#### ● Intelligent monitoring and cooling fan speed control

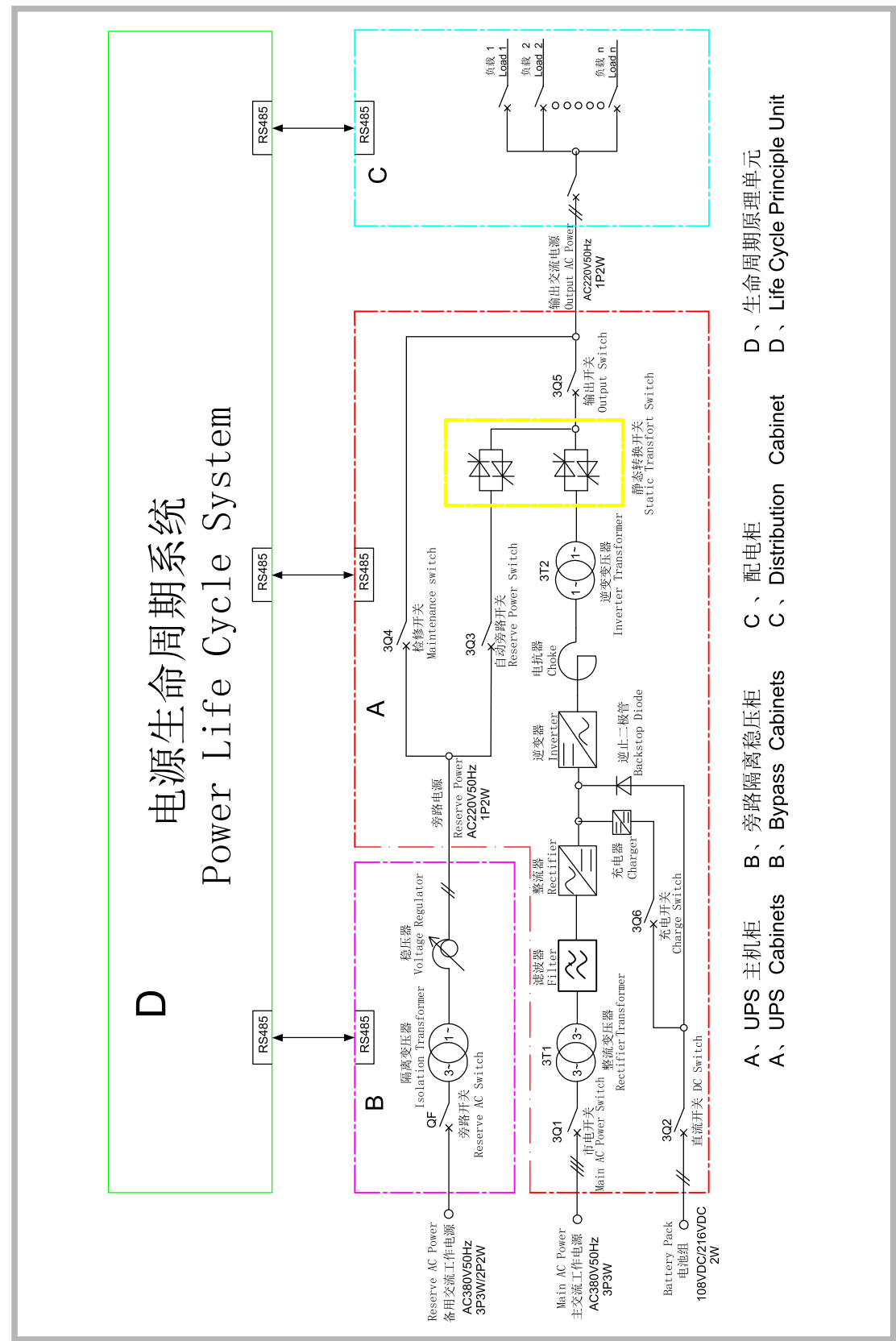
Any fan failure can be monitored on the UPS panel or dry contact interface, and the fan speed can be automatically adjusted according to the load condition to extend the life of the fan and reduce noise.

## Product parameter list

Model (capacity KVA)	SMP ( 5K 10K 15K 20K 30K 40K 50K )	SMP ( 60K 80K )
UPS type	Double isolation, double conversion online	
Efficiency	> 93%	
UPS ambient temperature	-30~40°C (+55°C, full load running time 16h)	
UPS storage temperature	-30~+70°C	
Relative humidity	< 95% (non-condensing)	
height	< 1500m (above sea level)	
The power is reduced when the	7%/km	
Ventilation method	1+1 redundant fan, forced air cooling, air supply up and down	
noise	<60dBA	
Input and output cable connection	Bottom or top	
Communication Interface	RS232 (1)/RS485 (1)/dry contact (1 group), SSMP optional	
Specification	CE、EN50091-1,2	tally
	FCC CLASS A	tally
Protect the circuit	Short circuit protection	Rectifier/Backup Power/Bypass Switch
	Lightning protection	MOV
	EMC filtering	input & Output
	insulation	Input/output fully isolated
<b>Rectifier</b>		
Bridge Rectifier	Three-phase 6-pulse controllable rectification	Three-phase 12-pulse controllable rectification
Rated input voltage (VAC)	380V-25%+30%, three-phase three-wire or three-phase four-wire	
Input frequency	50/60Hz±10%	
Input power factor	>0.75	>0.85
DC output voltage	110VDC/220VDC	
DC output voltage accuracy (load 0~100% change)	±1%	
efficiency	>0.85	>0.9
<b>Inverter</b>		
Bridge inverter	IGBT DSP controlled inverter IGBT	
DC input range	110VDC/220VDC±25%	
Rated output voltage	110V/220/230VAC , 2P2W或120V/240VAC , 2P2W	
Output power factor	0.8	
Output frequency	50/60Hz±0.1%	
Output voltage stability	Static	±1%
	Dynamic (0~100%~0)	±5%
	Output voltage recovery	After the step load, restore to 2% within 10 milliseconds
Overload capacity	125% is 10min, 150% is 1min	
Short circuit characteristics	Short circuit protection, current limited to 3 times rated current,	
Output waveform	Sine wave	
Output waveform distortion	Linear load	< 1%
	Non-linear load (crest factor 3:1)	< 2%
Crest factor	3:1 (customizable>3:1 crest factor)	
efficiency	>94%	
DC cold start	OK	

Product parameter list

Model (capacity KVA)	SMP ( 5K 10K 15K 20K 30K 40K 50K )	SMP ( 60K 80K )
<b>bypass</b>		
Automatic static switch	Thyristor SCR	
Rated voltage	110V/220V/230V±20% (settable) or 120V/240V±20% (settable)	
Rated frequency	50/60Hz±5%(Can be set)	
Static bypass transfer time	<0.4ms	
Inverter to static bypass	Test inverter, inverter failure, inverter input voltage is excessive, inverter output voltage is excessive	
Overload capacity	100%~110%	long-time running
	> 110%~125%	10min
	> 125%~150%	1min
	> 150%	100mS
<b>Mechanical parameters</b>		
model	SMP 5K 10K 15K 20K 30K 40K 50K	SMP 60K 80K
Protection level	IP20,IP21,IP30,IP32,IP40,IP42 Optional, others can be customized	
Cabinet size	W	600
	D	800
	H <sub>1</sub>	1800(IP20、IP30、IP40)
	H <sub>2</sub>	2000(IP21、IP32、IP42)
weight(kg)	700~1000	1100~2000



SMP series principle block diagram

## MPR series modular parallel redundant UPS for power transmission and transformation

## Product parameter list

**Product description:** This series of products is an industrial-grade product designed according to industrial-grade standards; adopts a "plug and play" modular design; based on LDC's independent intellectual property rights of inverter magnetic parallel patent technology, which realizes unlimited parallel redundant operation; Configure the power equipment life cycle management system to realize the fault detection, automatic fault maintenance and life prediction of the equipment. this series of products are only three-in-single-out models.

The stand-alone system can be composed of unlimited capacity.  
Single-phase UPS power module capacity: 2, 3, 5, 6, 7.5, 10KVA, DC 220V;  
Or 1.5, 2, 3, 4, 5KVA DC 110V.

### ★ ★ Product performance characteristics ★ ★

- 1. Modularization:** With 1.5-6KVA power module as a unit, it can be directly connected in parallel infinitely.
- 2. Flexibility:** The UPS capacity can be flexibly increased or decreased according to actual needs.
- 3. Redundancy:** N+X redundancy can be made according to actual needs to maximize system reliability.
- 4. Hot backup plug-in function:** In any case, you can easily replace the module without shutting down the UPS. Even when the battery is powered or repairs, maintenance, and capacity upgrades can uninterruptedly protect your equipment.
- 5. Reliability:** Any single point of failure will not affect the operation of the whole machine
- 6. Expansion issues:** Can be flexibly expanded according to the actual needs of users
- 7. Maintainability issues:** The user can repair it by himself without the need of professional technicians.

### Technical characteristics:

- The capacity of each module is 2, 3, 5, 6, 7.5, 10KVA (DC 220V), 1.5, 2, 3, 4, 5KVA (DC 220V) and can be directly connected infinitely in parallel.
- The DC input voltage of each module: 96, 110, 192, 220V or customized according to user requirements.
- The system can accept two different AC power inputs: working power and bypass power.
- It can be used for N+1 redundant operation or increased capacity operation.
- Provide RS232 interface, with open communication protocol and monitoring software. Optional RS485 interface, can provide standard protocol, such as MODBUS.
- Provide 9 dry contact outputs for automation system use: inverter abnormality, bypass abnormality, battery abnormality, mains abnormality, overload, comprehensive fault, mains mode, DC mode, bypass mode, other contact types can also be selected.
- Provide large-screen LCD Chinese liquid crystal display.

### MPR module advantages:

- 1) Professional design for China's power grid environment.

The extremely wide input voltage range is 220VAC±25% and the input frequency range is 45Hz~65Hz, which can be used in long-term harsher grid environment to avoid frequent battery failure.

- 2) The input and output dual isolation transformer design, the input, DC, and output terminals are completely electrically isolated, and the overload capacity and anti-interference ability are extremely strong.
- 3) Design and manufacture with industrial-grade standards, which greatly improves the reliability of the system.
- 4) The two-stage phase-locked loop automatic tracking is fully compatible with the generator.
- 5) Special five-stage overload protection is more suitable for various types of loads.
- 6) Chinese LCD display on large LCD screen.
- 7) Complete protection functions: overload, over temperature, output short circuit, low battery voltage, high battery voltage, and modules can automatically exit the parallel system.
- 8) International standard communication protocol and interface: MODBUS and Rs485.

Rated output power	2~3KVA	4~6KVA	7~10KVA
Output power factor	0.8		
Technology Type	On-line dual transform		
Design technology	Input and output isolation transformer design, multiple CPU redundancy design		
Structure	Modular, parallel		
Parallel settings	Shared load, redundant parallel technology		
Redundancy n+1	The standard parallel number is 8 units, and the number of parallel units can be increased according to user requirements		
Expansion	Increase in electricity demand by users		
Double conversion AC.AC efficiency	85%		
Noise at 100% load	50dBA		
UPS ambient temperature	-30~+40°C		
storage temperature	-30~+70°C		
Heat dissipation	Forced air cooling, fan cooling		
Relative temperature	< 95%(Non-condensing)		
Standard	EN50091 , Parts 1, 2, 3		
Service	Repair work from the front		
Positioning	The rear space must be at least 10cm		
Input and output cables	Terminal block connection, bottom entry		
Dry contact	There are multiple dry contacts for automation		
Smart interface	Used for network management and monitoring		
UPS module weight	50kg	90kg	110~150kg
UPS power module size	483x178x530mm (4U including tray height)	483x356x530 mm (8U including tray height)	483x534x530mm (12U with tray height)
	583x178x430 mm (4U including tray height)	583x356x430mm (8U including tray height)	583x534x430mm (12U with tray height)

### Rectifier parameters

Input voltage	Single-phase 220V/230V/240V, three-phase 380V/400V/415V
Input voltage range	+/-25V(%)
Input frequency	45-55HZ
Input power factor	0.85
Electric shock	Restricted by software startup

### Inverter parameters

Rated output power	2~3KVA	4~6KVA	7~10KVA
Rated output voltage	single-phase 220V/230V/240V		
Output power factor	0.8		
Output voltage range			
Static	+/-1%		
-Load jump(0-100%,100-0%)	+/-5%		
-Linear Load distortion	+/-2%		
-Non-Linear Load distortion	+/-3%(C42 meets the EN50091-1)		

## MPR series

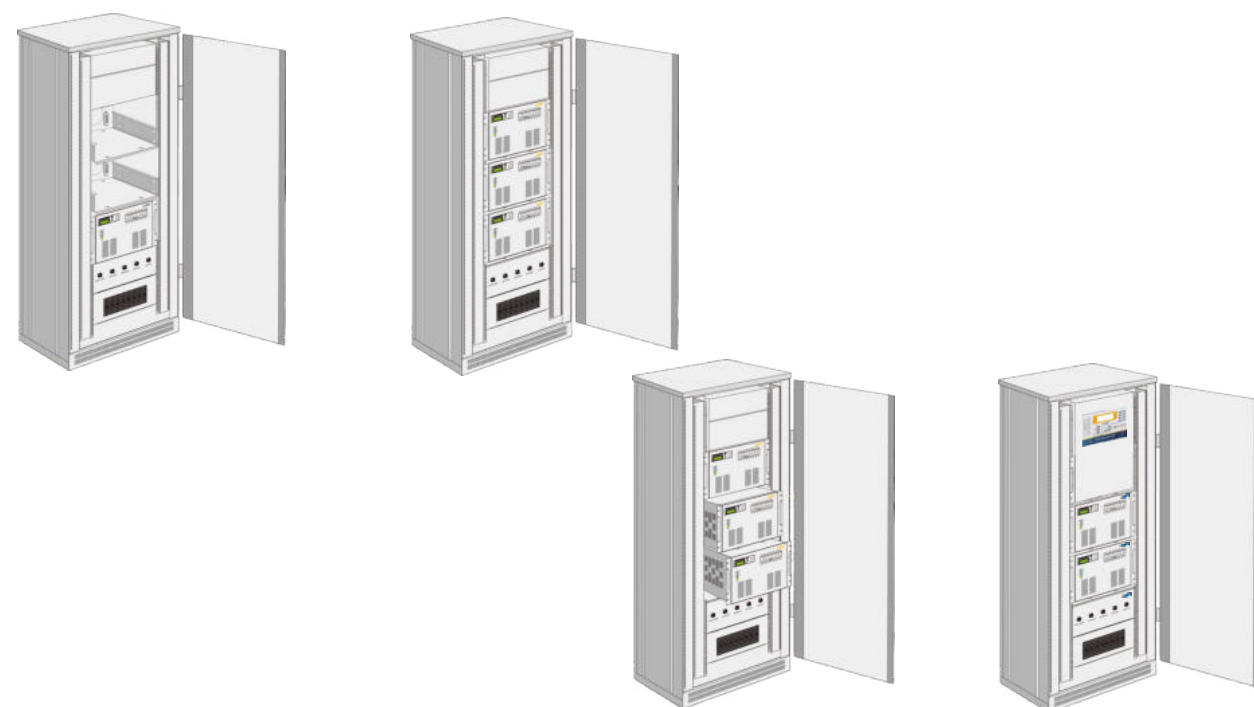
Rated output power	2~3KVA	4~6KVA	7~10KVA
Recovery time after load jump (0-100%, 100-0%)	20msec		
Output waveform	Sine wave		
Output frequency	50 or 60Hz		
Output frequency range	+/-0.1%Hz		
Free running	+/-0.1%Hz		
When synchronized with mains (adjustable)	+/-5%Hz		
Overload capacity	125 10min , 150 1min		
Crest factor	3:1(Customizable>3:1 crest factor)		

### DC parameters

battery voltage	96/110/192/220VDC
voltage range	+/-20%

### Configure cabinet specifications

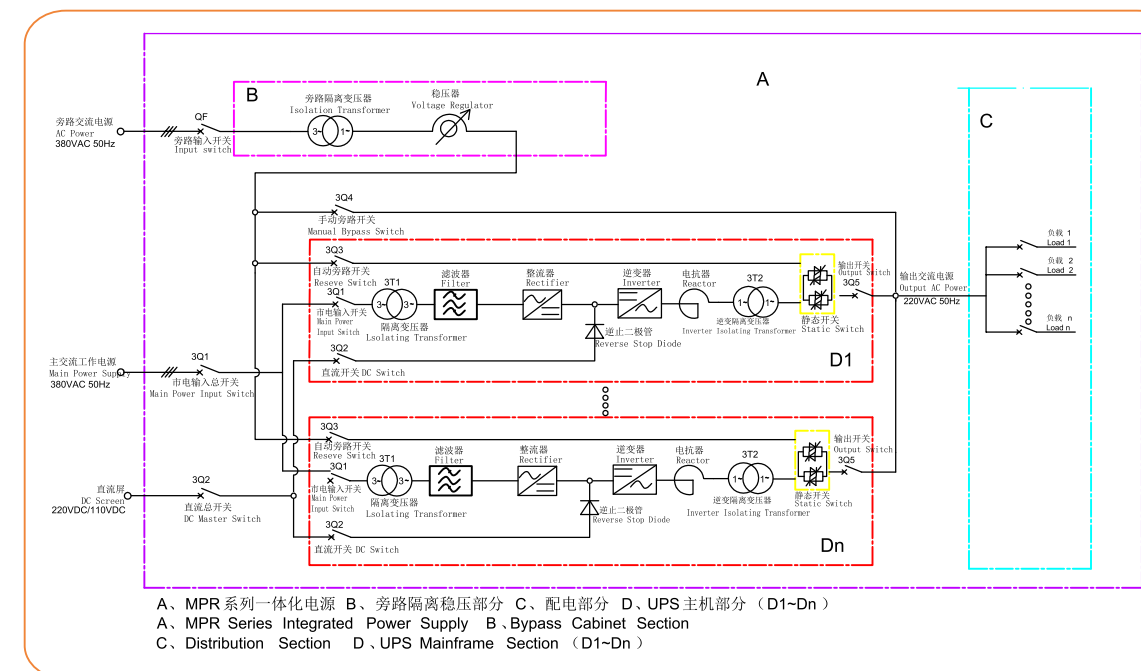
Standard cabinet	MPRC168	MPRC186	MPRC268	MPRC286	MPRC386	MPRC386
Cabinet configuration allowed	Six 4U or Three 8U power modules 1 set of manual bypass switch 1 set of standard 8 AC outputs	Three 8U or Six 4U power modules 1 set of manual bypass switch 1 set of standard 8 AC outputs	Three 8U or Six 4U power modules 1 set of manual bypass switch 1 set of standard 8 AC outputs	Four 8U or Eight 4U power modules 1 set of manual bypass switch No AC power distribution output		
Cabinet standard configuration	Cabinet, input isolation transformer (optional), terminal block, module plug-in terminal, cooling fan, etc.					
Maximum power level	18KVA/14.4KW	18KVA/14.4KW	18KVA/14.4KW	24KVA/19.2KW		
Dimensions (MM) width x height x depth	600x1800x800	600x2000x800	800x2000x600	600x2260x800	800x2260x600	
weight ( kg )	100	120	120	140	140	



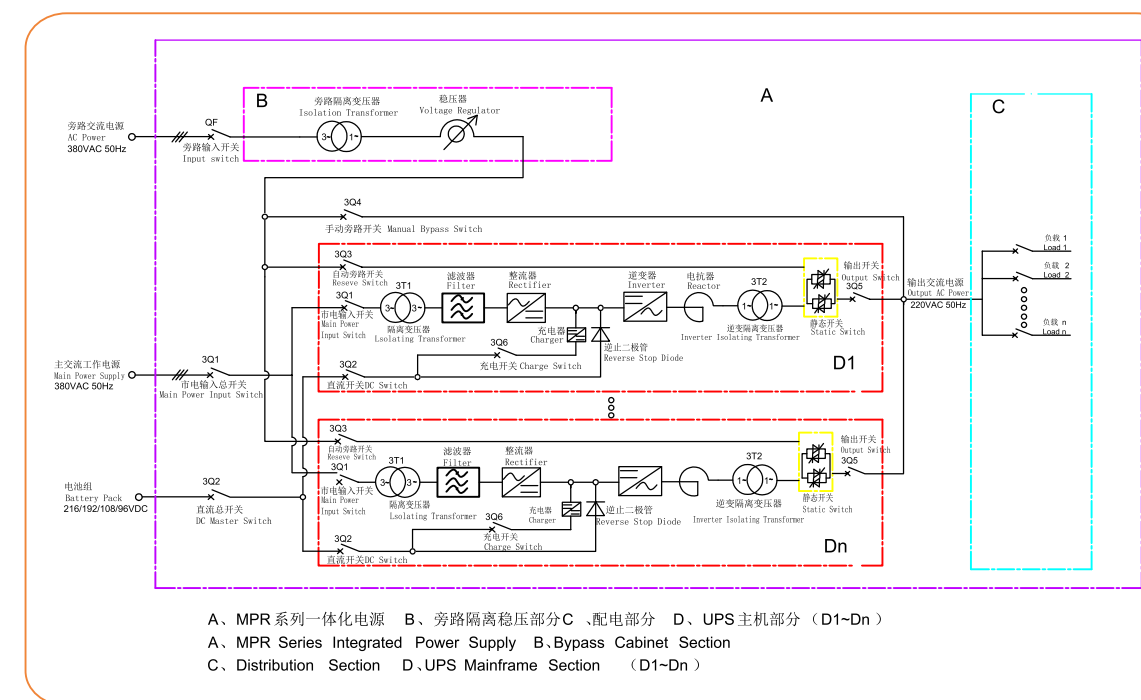
## SMR series

### Typical application

1. Intelligent substation of nuclear power plant
2. Oil & natural gas intelligent substation
3. Petrochemical smart substation
4. Intelligent substation for coal chemical industry
5. Intelligent substation for chemical industry
6. Other industrial applications



Schematic diagram of uncharged system



Charging System schematic diagram

## HDP series industrial grade modular intelligent UPS Performance characteristics

### 1) Intelligent protection

The power module and system of HDP series modular UPS power supply adopt the design scheme of double protection of hardware and software. For the power module and the system's possible voltage, current, thermal performance, short circuit and other abnormalities, it can be quickly and effectively protected to ensure the safety and reliability of the system.

### 2) Very high system reliability

HDP series modular UPS adopts integrated package IGBT module, which greatly improves the reliability of the system. Avoid device uneven current and voltage stress problems caused by the parallel connection of discrete IGBTs. The unique isolated air duct design greatly improves the environmental adaptability of the product

### 3) Powerful remote network management function

Through the SNMP network management card, users can remotely monitor and control the UPS system through the network, and can also perform simultaneous remote monitoring and remote EPO functions on multiple devices through the supporting remote monitoring box.

### 4) Long battery life design

Each power module has a built-in independent digital high-power charger, which can provide a charging capacity of 20% of the power capacity. The charging and discharging circuits are all DSP digital control, using intelligent battery management technology to achieve excellent battery management, greatly extending the service life of the battery, and avoiding the single point of failure that may be caused by the battery directly hanging on the DC bus.

### 5) Battery cold start function

The system comes with a battery cold start function, which allows you to directly start the system from the battery when there is no utility power.

### 6) Green energy saving

High input power factor, input power factor > 0.99, input harmonics less than 3%, the efficiency of the whole machine is as high as 95% or more, and the intelligent sleep function is adopted to effectively improve the operating efficiency of the whole machine.

### 7) Online hot swap function

Power modules, monitoring modules and static bypass modules can all be hot-swappable online. Each power module is controlled and operated autonomously, avoiding the risk of single-point failure and greatly improving the reliability and availability of system operation.

### 8) Smart working mode

After the system is set to the smart sleep mode, when the load rate of the module is less than the sleep load level, the controller determines the number of modules to enter the sleep mode according to the current load, and performs sleep rotation according to the set rest time, saving you Energy consumption is truly green and energy-saving, while improving the overall service life of the system.

### 9) Fast engineering acceptance

System full load test can be performed by setting the autonomous aging mode. It saves you the trouble of renting a large load box, load box construction, etc., and easily realizes green load testing and rapid engineering acceptance for you.

### 10) Maintain "zero threshold"

The maintenance is convenient and fast, and the maintenance operation can be completed in only a few minutes; the module ID self-identification technology is adopted, and the operation is completed in one step without manual setting; the key waveform recording function provides great convenience for fault analysis.

### 11) "Black box" function

The fault waveform can be stored and recorded, and the waveforms of various internal key points within a period of time before and after the fault occurs can be recorded, which is convenient for fault analysis.

## Technical characteristics

- 1) Adopt 32-bit DSP full digital control technology and the most advanced CAN-BUS communication technology to make the system performance more stable, safe and reliable.
- 2) The input power factor is as high as 0.99, which is more environmentally friendly.
- 3) The core power device adopts integrated package IGBT module, which greatly improves the reliability of the system.
- 4) Adopt intelligent sleep technology to effectively improve the operating efficiency of the whole machine.
- 5) Adopting IBM intelligent battery management technology, greatly extending the service life of the battery.
- 6) Module ID self-recognition technology, no need to set up, easy to operate.



## Product description

HDP series modular UPS power supply is the industry's leading all-digital power product. It concentrates the most advanced technological achievements in the field of power electronics and automatic control. It has a number of patents, making breakthroughs in the reliability, availability, and maintainability of key equipment. Sexual improvement.

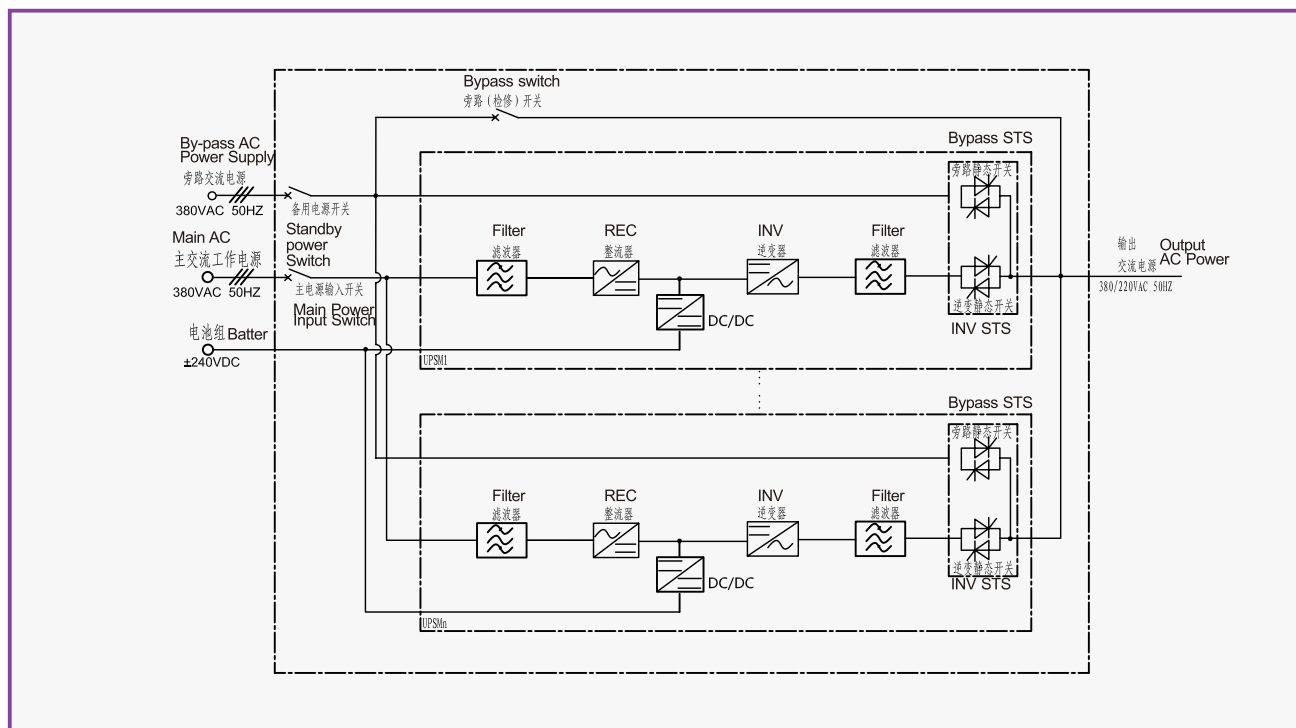
The HDP series modular UPS power supply combines the technical characteristics of traditional tower models with the modular requirements of modern computer rooms. While achieving modular design, it ensures the high reliability of the system. The performance indicators of this series of products have reached the international leading level, with extremely high cost performance, and are the best choice for high reliable power supply needs in various industries.

HDP series products provide capacity configuration of 10~1000kVA power section.

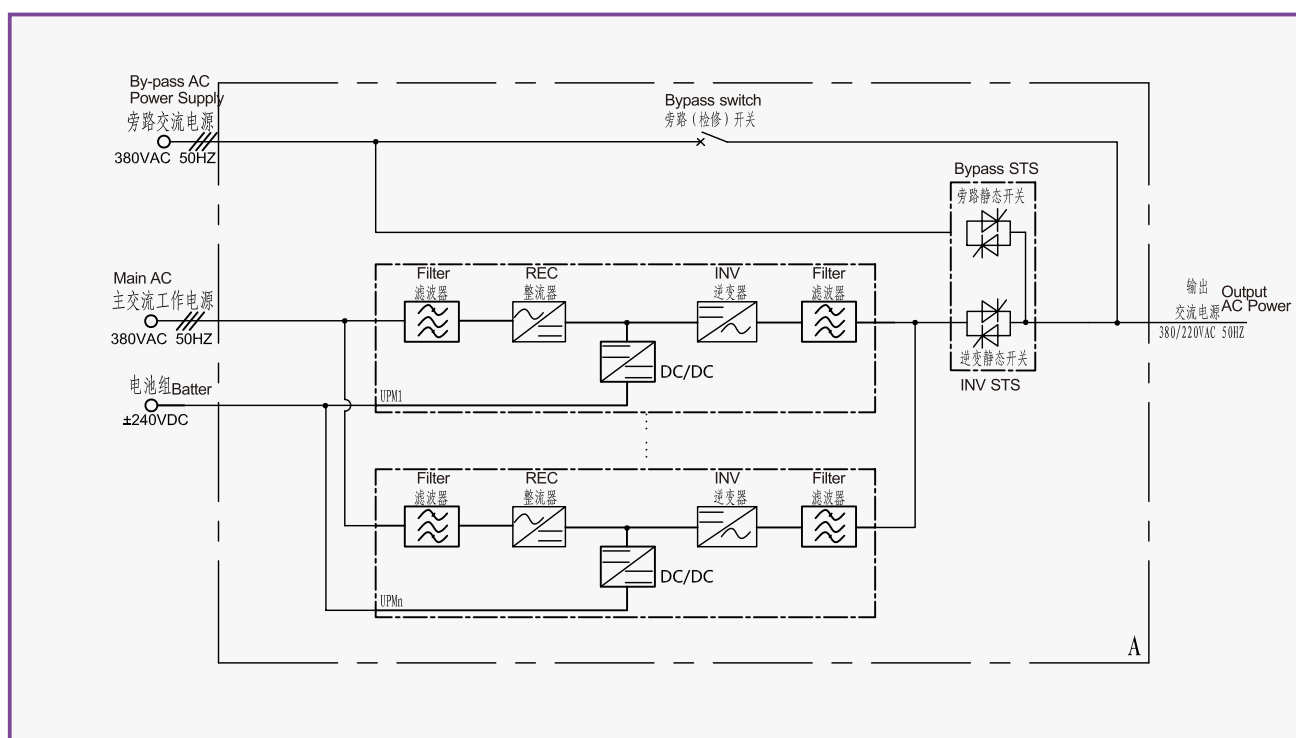
## Product application

Commercial System  
Power System  
Energy System  
Industrial System

Product parameter list



Schematic diagram of a decentralized bypass system



Schematic diagram of centralized bypass system

<b>Main input</b>	
Model	HDP10~1000KVA
Input wiring	3 phase + N wire + ground wire
Rated input voltage	380/400/415VAC (line voltage)
Rated frequency	50/60Hz
Input voltage range	304 ~ 478Vac (line voltage) full load 304V ~ 228Vac (line voltage) load linear derating from 100% to 75%
Output frequency range	40Hz ~ 70Hz
Input power factor	>0.99
Input total harmonic distortion(THDi)	<3% (100% linear load)
<b>Bypass</b>	
Bypass rated voltage	380/400/415VAC (line voltage)
Bypass rated frequency	50/60Hz
Bypass voltage range	Can be set, default -20% ~ +15% Upper limit: +10%, +15%, +20%, +25% Lower limit: -10%, -15%, -20%, -30%, -40%
Bypass frequency range	Can be set ±1Hz ±3Hz ±5Hz
<b>Output</b>	
Rated output voltage	380/400/415VAC (Line voltage)
Rated output frequency	50/60Hz
Output power factor	0.9
Voltage accuracy	±1.0%
Output dynamic response	<5% (20%-80% -20% step load)
Dynamic recovery time	<30ms (0%-100% -0% step load)
Output total harmonic distortion(THD)	<1% , Linear load <5% , Non-linear load
Inverter overload	<110%, 1 hour 110%~125%,10min 125%~150%,1min >150%,200ms
Frequency accuracy	50/60Hz±0.01%
Tracking range	Can be set, ±0.5Hz ~ ±5Hz, default ±3Hz
<b>Battery or DC screen</b>	
Rated battery voltage	±220VDC、±240VDC、240VDC(Can be set)
Charging voltage accuracy	1%
Charging power	20%*System power
External DC screen power supply	220VDC/110VDC
<b>efficiency</b>	
Main road mode	>95%
Battery mode	>95%
<b>System</b>	
interface	Standard: RS232 RS485 USB programmable dry contact Optional: SNMP AS400
Wiring	Support up and down incoming lines
<b>Environmental parameters</b>	
Protection level	IP20
Operating temperature	-30~40 °C
storage temperature	-25°C ~ 70°C
Relative humidity	0 ~ 95% No condensation
Noise (1 m)	65dB @ 100% load, 62dB @ 45% load
Altitude	1000m, between 1000~2000m, power derating by 1% for every 100m increa

Industrial grade  
regulated power supply

## DBW/SBW series industrial-grade isolated regulated power supply

### Product description

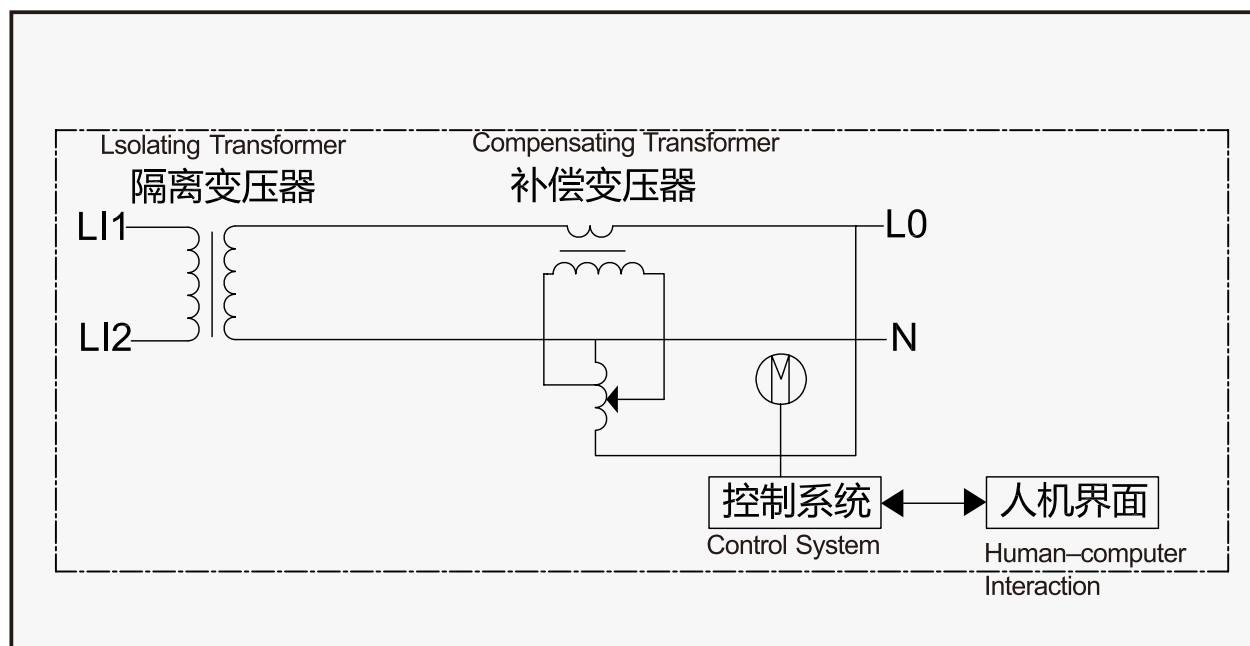
DBW/SBW series compensating power stabilizer (AVR) is a new generation of power stabilizer jointly developed by our company's domestic and foreign technical personnel by introducing American technology and combining the actual situation of domestic grid voltage. When the external power supply grid voltage fluctuates or the load changes, using this regulator can automatically maintain the stability of the output voltage.

The regulator has large capacity, wide range, low loss (energy-saving), high precision, fast voltage regulation, no waveform distortion, etc.

The voltage regulator is stable in voltage regulation, can withstand instantaneous overload, and is suitable for various linear and non-linear loads;

The user-friendly Chinese LCD display makes the voltage stabilizer easy to use and maintain.

The heat dissipation of the power devices in the DBW/SBW series compensating AC voltage stabilizing cabinet is forced air cooling mode, with bottom air inlet and top air outlet, using axial flow AC fans. The continuous working life of the fans is not less than 50,000 hours (GB/T 2658). The heat dissipation air flow rate of the whole unit of the voltage stabilizing cabinet per 40KVA unit output capacity is not less than 15m<sup>3</sup>/min.



## Product parameter list

Electrical performance parameters of the whole machine	
Rated input voltage level	400VAC/230VAC/120VAC
Input voltage range	400VAC±20%/230VAC±20%/120VAC±20%
Input frequency range	50Hz±10%/60Hz±10%
Rated output voltage	380VAC±5%/220VAC±5%/110VAC±5%
Stabilization accuracy	≤±5%
Output load capacity	110% rated load, long-term operation; 120% rated load, run for 60 minutes; 140% rated load, run for 15 minutes; 160% rated load, run for 5 minutes;
efficiency	At rated load , ≥95% ;
Three-phase voltage asymmetry	For three-phase output, (asymmetry of output voltage-asymmetry of input voltage)≤±1%; voltage asymmetry=(negative sequence component/positive sequence component)×100%
Relative harmonic content of output voltage	(Harmonic content of output voltage waveform-harmonic content of input voltage waveform) ≤±10%
Stable schedule	When the input voltage step is 10% of the rated voltage, the adjustment time is ≤1.5 seconds
Insulation	Winding to shell and between windings, 3KV test, insulation resistance≥1MΩ
Compressive strength	2000V ,1 minute
Electric clearance and creepage distance	Electric clearance ≥6mm; creepage distance ≥10mm;
Noise	≤65db
Temperature rise	After the whole machine is thermally balanced, the limit temperature rise of the windings or coils in the machine is ≤80°C;
Brush life	≥10000 times adjustment
Protective function	Equipped with output over-voltage protection, output under-voltage protection, output over-current protection, output short-circuit protection, voltage regulating motor stroke protection; equipped with output over-voltage protection, output under-voltage protection, output over-current protection, output short-circuit protection after the action, There are sound, light, and electric alarms, and the output is cut off.
Single input single output isolation transformer parameters	
Rated input voltage	400VAC/230VAC
Input voltage range	320V-480V/185V-275V
Input frequency range	50Hz±10%/60Hz±10%
Insulation heat class	Class B
Insulation	Winding to shell and between windings, 3KV test, insulation resistance≥1MΩ
Load loss	40KVA and below, ≤3% of rated capacity; 50KVA and above, ≤2% of rated capacity;
Short circuit loss	40KVA and below, ≤3% of rated capacity; 50KVA and above, ≤2% of rated capacity;
Three-input single/three-output isolation transformer parameters	
Rated input line voltage	400VAC
Input voltage range	320V-480V
Input frequency range	50Hz±10%/60Hz±10%
Insulation heat class	Class B
insulation	Winding to shell and between windings, 3KV test, insulation resistance≥1MΩ
Load loss	40KVA and below, ≤5% of rated capacity; 50KVA and above, ≤4% of rated capacity;
Short circuit loss	40KVA and below, ≤5% of rated capacity; 50KVA and above, ≤4% of rated capacity;

DBW/SBW系列

Compensation transformer parameters												
Rated input voltage	210VAC/105VAC											
Input voltage range	0V~210V/0V~105V											
Input frequency range	50Hz±10%/60Hz±10%											
Insulation heat class	Class B											
insulation	Winding to shell and between windings, 3KV test, insulation resistance≥1MΩ											
Load loss	≤2% rated capacity;											
Short circuit loss	≤2% rated capacity;											
Voltage regulator parameters												
Rated input voltage	220VAC/110VAC											
Input voltage range	220V±5%/110V±5%											
Input frequency range	50Hz±10%/60Hz±10%											
Output voltage range	0V~210V/0V~105V											
Insulation heat class	Class B											
insulation	Winding to shell and between windings, 3KV test, insulation resistance≥1MΩ											
Load loss	≤2% rated capacity;											
Short circuit loss	≤2% rated capacity;											
Motor full adjustment time	≤4 seconds											
Mechanical parameters												
model	DBW/SBW10	DBW/SBW15	DBW/SBW20	DBW/SBW30	DBW/SBW40	DBW/SBW60	DBW/SBW80	DBW/SBW100	DBW/SBW120	DBW/SBW160	DBW/SBW200	
Protection level	IP20,IP21,IP30,IP32,IP40,IP42 Optional											
Body size (mm)	W	600			1200			1800				
	W(S)	600			1200			1800				
	D	800										
	H <sub>1</sub>	1800(IP20、IP30、IP40)										
	2000(IP21、IP32、IP42)											
weight(kg)	700	730	750	850	1000	1200	1500	1800	2000	2500		



Industrial grade  
EPS

## Industrial-grade emergency power supply EPS

A true industrial standard

- 1) The whole series of three-in-single-out design (three-phase input, single-phase output) three-in-three-out (optional).
- 2) Infinite parallel redundant system of multiple single cameras.
- 3) It can accept multiple AC and DC power inputs of different phases and frequencies at the same time.
- 4) Single-phase output UPS capacity can reach 360KVA, and three-phase output UPS capacity can reach 2.5MVA.

EPS system parallel scheme

- Parallel redundant system can be connected infinitely in parallel with multiple units without parallel cabinets. Each unit only needs one communication line, and multiple hosts can realize a parallel redundant system; the communication lines of multiple parallel redundant systems are connected in a ring and pass through the host at the same time. The output connection is used for carrier communication, even if one or two communication wires are accidentally disconnected, it will not affect the parallel operation of multiple machines.

### EPS system design features

The following parallel schemes can be realized

- 1) The same capacity EPS can be directly connected in parallel.
- 2) EPS of different capacities can be directly connected in parallel.
- 3) EPS of different brands of the same capacity can be directly connected in parallel.
- 4) EPS of different capacity and different brands can be directly connected in parallel.

Parallel system options

- Maintenance bypass cabinet
- STS-static switch  
The use of STS can make the two power sources switch without disturbance; when the phases of the two power sources are synchronized, 0ms switching time can be achieved.

## DEP series industrial-grade emergency power supply EPS



### Product description

The DEP series industrial-grade modular intelligent EPS is designed for large-scale industrial enterprises according to the characteristics of industrial system power grids. It is mainly used in emergency lighting, accident lighting, accident machine pumps, industrial transmission and fire protection systems (fire elevators, rolling doors, fans, Water pumps, sprinkler pumps, water supply pumps) and other important equipment and occasions that need to provide highly reliable uninterrupted emergency power supply. This series of products is an industrial-grade product designed according to industrial-grade standards; adopts a "plug and play" modular design; based on LDC's independent intellectual property rights of inverter magnetic parallel patent technology, which realizes unlimited parallel redundant operation; Configure the power equipment life cycle management system to realize the fault detection, automatic fault maintenance and life prediction of the equipment. This series of products is divided into two models: three-input single-output and three-input three-output.

The single-machine system capacity can be up to 2.5MVA

### Technical characteristics

1. The charger adopts SCR rectification design, and the converter and inverter adopt IGBT inverter
2. 32-bit DSP full digital control technology
3. Parameter control and setting can be carried out through software program
4. ABM fast charging design, can be set through the panel
5. Multiple infinite parallel redundant systems
6. Very high overall efficiency
7. International standard communication protocol
8. Input current distortion less than 7%
9. Optional dual STS switching to achieve switching time  $\leq 0.4\text{ms}$ , meeting the harsh power supply quality requirements of the industrial market.

1. Nuclear power plant  
2. Oil & natural gas (onshore, offshore platforms, pipelines, refining, floating production and storage)  
3. Petrochemical (onshore, offshore platforms, pipelines, refining, floating production and storage)

### Application Industry

4. Coal chemical industry  
5. Chemical industry  
6. Other industrial

## ★★ Performance characteristics ★★

### 1. Fully modular design

"Plug and Play" modular design, the rectifier unit, inverter unit, and isolation diode are integrated into one module, which can be easily plugged and unplugged, which can greatly shorten the maintenance time.

### 2. Fully redundant design

Multiple "plug and play" power modules operate in parallel to form N+1 redundancy; the microprocessor of the control power supply, the main control board, and the cooling fan all adopt dual redundant design, and the single point of thermoelectric failure will not affect the whole The machine is running; the output voltage control adopts 1+1 redundant closed-loop control to ensure that even if one feedback fails, it will not produce high-voltage output and burn the load.

### 3. Multi-language LCD display (Chinese, English, Russian, Spanish)

Large-screen LCD liquid crystal display, UPS monitoring software, using multiple languages to display, the operation is simple and clear, there is no language barrier to the operation, and you can learn it at a glance.

### 4. Fully digital control

Use DSP and IGBT to control switch components: System stability and improvement of mechanical efficiency.

### 5. Intelligent parallel hot backup

There is no need for parallel boards, just one communication line, and multiple hosts can run in parallel redundantly: the communication line between multiple parallel hosts is designed in a loop to form a closed loop, even if one is disconnected, it will not affect the multi-level parallel operation.

### 6. Humanized control design

No procedural control restrictions, simple operation, different from other brands of UPS with strict operating procedures restrictions.

### 7. Unique voltage adjustment method

In the three-phase inverter system composed of three independent single-phase inverters, the voltage of each phase can be adjusted independently to allow 100% unbalanced three-phase load.

### 8. Intelligent detection and speed control of cooling fan

Any fan failure can be monitored on the EPS panel or through the RS232 interface. The fan speed can be automatically adjusted according to the load condition, which can extend the life of the fan and reduce noise.

### 9. The static switch has a very short switching time, which is a disturbance-free switching

Using 32-bit DSP digital control technology and current type detection method, the switching time will be 0.

### 10. Data recording capability

The data and time of each abnormal situation will be stored in the UPS, so the user can clearly understand any situation that occurs in the UPS, even if there is no power supply, the data stored in the UPS will not be cleared.

### 11. Remote diagnosis and testing

Through the Internet, multiple UPSs can be remotely diagnosed and tested to ensure that your system is always in the most reliable operation.

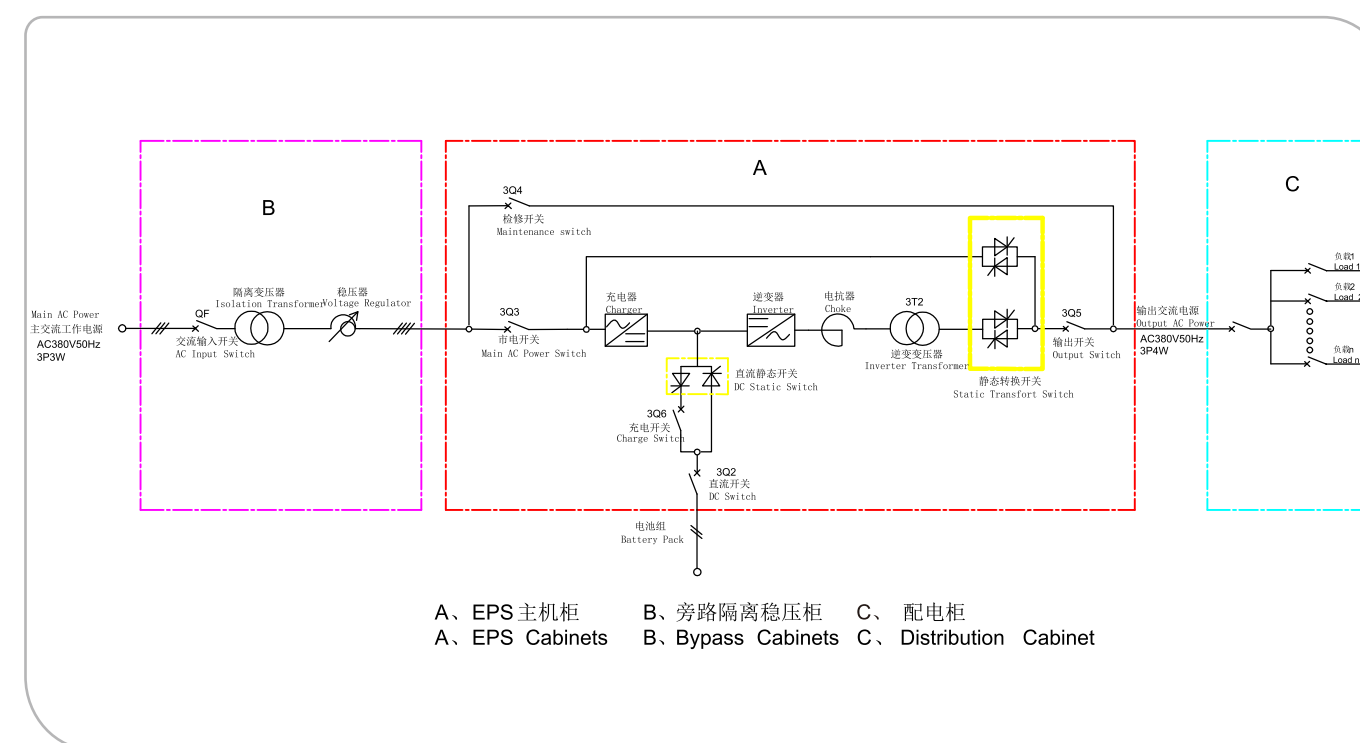
### 12. Intelligent communication interface

One RS232, four RS485, and standard communication protocol form an intelligent monitoring system. At the same time, it is connected to SNMP devices to realize remote network management. There are more than 20 pairs of passive dry contacts, which can be used at will.

Product parameter list

model		DEP series
Input	Mains voltage	AC187 ~ 242V/ AC310 ~ 450V
	Mains frequency	50Hz±10%
	Input Current	The maximum input current is 1.2 times the rated input current
	Two-way mutual investment	Optional
	Static switch	Optional
charger	Bridge rectifier	Three-phase 6-pulse controllable rectification
	Circuit structure and control strategy	DC output voltage closed loop control (PID), rectifier output current, battery charging current cut-off negative feedback regulation.
	Rated input voltage (VAC)	380V/400V/415V-25%+25%, Three-phase three-wire or three-phase four-wire
	Input frequency	50/60Hz±10%
	Charging voltage	Can be set according to battery capacity
	recharging current	Can be set according to battery capacity
battery	Maintenance-free sealed battery	
	battery voltage	110VDC/220VDC/360VDC
	Standby time	30 minutes (configurable according to user requirements)
Normal state output	The output voltage	Consistent with mains
	Output frequency	Consistent with mains
	efficiency	≥99%
Emergency state output	The output voltage	Single-phase 220V±1%, three-phase 380V±1%
	Output frequency	50/60Hz±0.1Hz
	Rated output power factor	0.8
	100% load regulation rate	< ± 1 %
	Voltage total harmonic distortion (rated load)	< 3 %
	Dynamic voltage transient and recovery time	0~5 ms, dynamic voltage transient ≤±30%; 5-20 ms, dynamic voltage transient drop to ≤±14%; 20-100 ms, dynamic voltage transient drop to ≤±5%; (GB7260.3 —The first-class dynamic performance of 5.3.1 is 20-100 ms, and the dynamic voltage transient drops to ≤±10% GB7260.3-6.3.7)
	efficiency	> 95% (at rated load)
	Number of output branches	4 channels (can be expanded according to user requirements)
	Output branch characteristics	Continuous type, non-continuous type, fire linkage type
	Overload characteristics	Normal output at 120%; ≥30 seconds at 150%

Conversion time	It is 0 milliseconds to switch from grid power supply to emergency state power supply
	It is 0 milliseconds to switch from grid power supply to emergency state power supply
display	LED+LCD
Operating environment temperature	-30°C~+55°C
Relative humidity	0~90%
Altitude	≤2500 meters; when 2500 ~ 5000 meters, add system ventilation device or use derating
Adapt to the load	Various lighting loads or other capacitive and inductive motor loads
noise	Mute and no noise when the power grid is powered, and the noise is less than 60dB during emergency power supply
size and weight	See the size/weight list
Door opening method	Main cabinet: front door; battery cabinet: front and rear doors
Way in and out	Bottom inlet and outlet (standard type) according to user requirements



Industrial Special three-in single-out, three-in three-out system schematic diagram

## High reliability industrial rectifier

### Designed for the worst application environment.

1. It can ensure the continuous availability of power demand for nuclear power plants, power generation, oil and gas transportation and other heavy industries with high-level safety requirements.
2. Solid cabinet (4mm thick heavy steel structure)
3. Class I seismic design meets the requirements of nuclear safety facilities.
4. Ultra-high altitude 4500m design, no derating.
5. Standard IP32 protection level, optional easily replaceable dust filter and dust-proof and splash-proof casing (Ip52).
6. The ambient temperature for normal operation is  $-10^{\circ}\text{C}\sim+40^{\circ}\text{C}$ , and the ambient temperature for accident operation is  $-10^{\circ}\text{C}\sim+50^{\circ}\text{C}$ .
7. Wide input voltage range, allowing -15% to 10% tolerance.
8. Ultra-wide DC voltage range, which can flexibly meet special requirements and ultra-wide applicability.
9. The software architecture based on NBT 20054/IEC60880 can be applied to nuclear power industry.
10. All-metal shielded control line and control unit are adopted to improve EMC performance.
11. Highly dustproof design, which can be applied to harsh environment.
12. Use low temperature resistant and flame retardant power cable.

### Product description

This series of products are designed according to nuclear safety standards; Adopt "plug and play" modular design; Based on the patented technology of LDC's independent intellectual property rights, infinite parallel redundant operation is realized; Selecting and configuring the life cycle management system of power supply equipment can realize fault detection, automatic fault maintenance and life prediction of equipment.

This series of products is divided into two types: no software type and software control type.

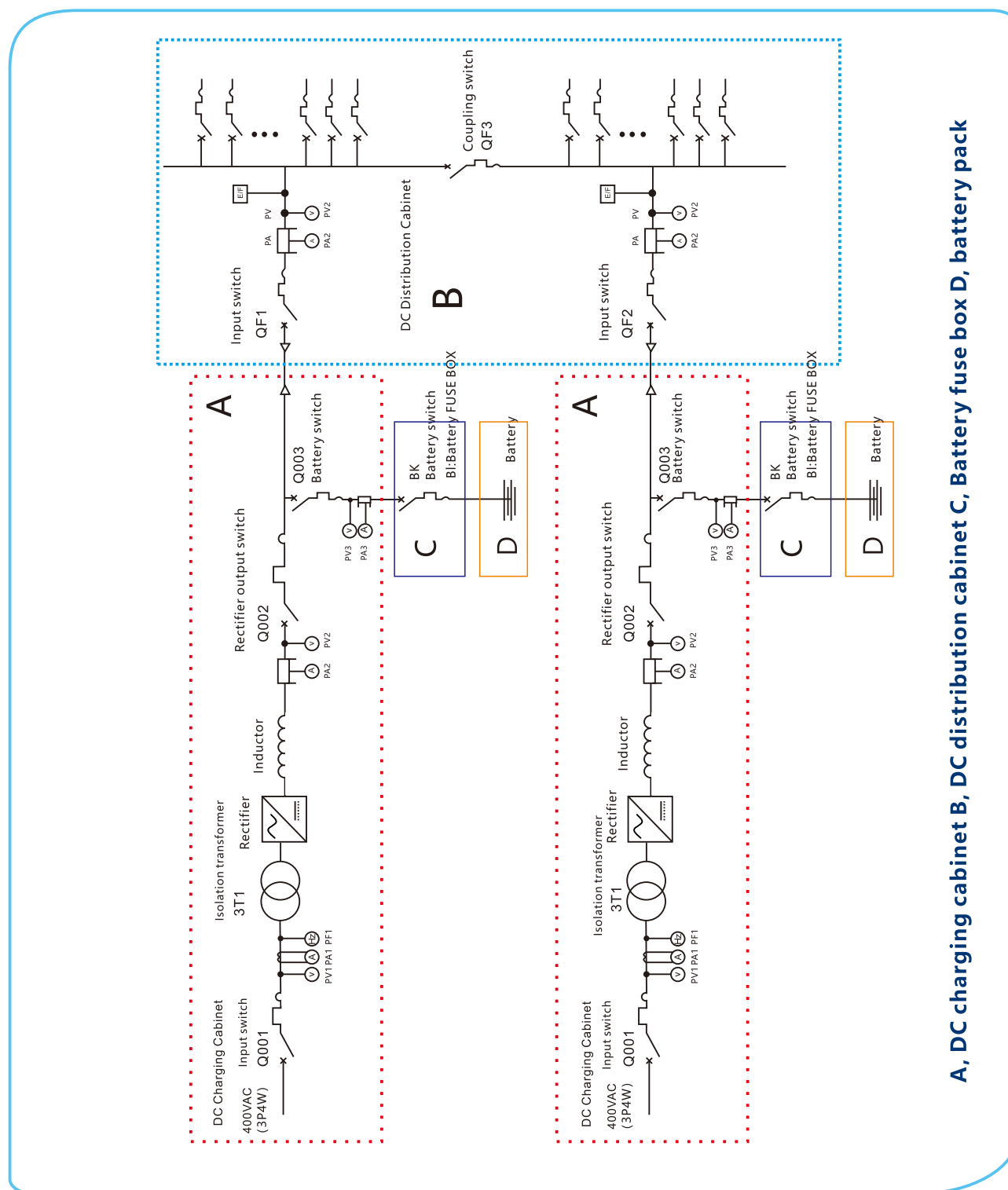
Rated output voltage: 24V, 48V, 60V, 110V, 220V,

Rated output current: 63A, 125A, 200A, 400A, 630A, 800A, 1250A, 1600A, 2500A, 3200A, 4000A.

### Performance characteristics

1. Fully modular design  
Plug-and-play modular design, rectifier unit, isolation diode and step-down silicon chain (optional) are integrated in one unit, which is convenient for disassembly and assembly and can greatly shorten maintenance time.
2. Full redundancy design  
A plurality of power modules run in parallel to form N+1 redundancy; Control power supply, main control board, microprocessor board (optional), and cooling fan all adopt double sets of redundant design, and single point failure will not affect the operation of the whole machine; The output voltage is controlled by 1+1 redundant closed-loop control, which ensures that even if one feedback fails, it will not produce high-voltage output and burn the load.
3. Indicator light and high-precision instrument display, rich man-machine interface.  
Large-screen LCD display, monitoring software and multi-language display (Chinese, English, Russian and Spanish) can be selected. The operation is simple and clear, and there is no language barrier in operation. You will learn it as soon as you learn it.
4. Optional digital control  
Using DSP control, the system control accuracy and conversion efficiency are higher.
5. No software control The circuit with independent intellectual property rights has higher reliability and stability.
6. Intelligent parallel hot backup  
Without parallel board, multiple hosts can run redundantly in parallel with only one communication line. The communication lines between multiple parallel hosts are designed in a ring shape to form a closed loop, even if one of them is disconnected, it will not affect the multi-level parallel operation.
7. Humanized control design  
There is no procedural control restriction, and the operation is simple, which is different from other brands of rectifiers with strict operating procedure restrictions.
8. ultra-wide input voltage  
Under full load condition, the output does not degrade.
9. The cooling fan intelligently detects and controls the rotating speed.  
For forced air-cooled models, any fan failure can be monitored, and the fan speed can be automatically adjusted according to the load condition, thus prolonging the service life of the fan and reducing noise.
10. Data recording ability  
For digitally controlled models, every abnormal information will be stored, and the information will not disappear when the rectifier loses power.
11. Intelligent communication interface  
Optional intelligent communication interface, using standard communication protocol.
12. instructions and alarm  
Charger on, fast charging on, fan failure, DC current overload, DC out of tolerance, battery discharge, DC grounding failure, battery disconnection, overheating, DC fuse blown, battery operation.
13. Operation and instruction Digitally controlled models can be equipped with operating parameters such as automatic start, charging mode (floating/boosting/initial), automatic boosting (balanced) charging, battery capacity test, advanced battery monitoring test and setting date/time.
14. Indication and measurement Operation mode (floating/boosting/initial), total DC current, battery voltage and current, input voltage and current of AC rectifier, battery temperature (with optional sensor), remaining battery standby time, etc.
15. Other options: temperature sensor, compensation battery charging, battery asymmetry monitoring, relay board, monitoring, Modbus protocol on RS-485 or TCP/IP, IEC61850, etc.

### Product Principle Block Diagram



A, DC charging cabinet B, DC distribution cabinet C, Battery fuse box D, battery pack

### Product parameter list

Rectifier Input	
Voltage	3x380 / 400 / 415V
Input voltage tolerance:	
DC in tolerance	+/-10%
for function	+15%/-25%(below -15 % the battery might begin to discharge)
Frequency	50 / 60 Hz
Frequency tolerance	+/- 8 %
Power factor:	
at nominal line power and float voltage	~ 0.83
at -10 % line power and float voltage	~ 0.90
at +10 % line power and float voltage	~ 0.75
DC Output	
Voltage	24 / 48 / 110/125/220/360/380VDC
Setting range:	
Float voltage at -10 / +10 % line power voltage	100 –120 %
Float voltage at 0 / +10 % line power voltage	100 –130 %
Boost voltage at nominal line power voltage	100 –130 %
Initial charge voltage up to maximum	150 %
DC voltage tolerance	+/-1 %
Dynamic behavior:	
10 –100 % and 100 –10 % load step	maximum+/-10 %Vrms
regulation time	< 100 ms +/-2 %
DC ripple voltage	
Standard with parallel battery capacity of 3x nominal current:	
Optional without battery	≤ 2 % rms
Optional without battery	≤ 1 % rms
Optional without battery (24 / 48V)	≤ 2mV (at 800 Hz, psophometric)
DC current	according to type range
Setting range	
Total output current limitation	50 –100 %
Battery current limitation	0 –100 %
DC current tolerance	+/-2 %
Characteristic	IU according to DIN 41773
DC overcurrent capability	150 % for 2s

## Rectifier/Charger/DC UPS

## Rectifier/Charger/DC UPS

General Data		
Ambient conditions		Rated Power
Storage temperature range	from -20 to +70 °C	
Operating temperature range	from -10 to +40 °C	100%
	from -10 to +45 °C	94%
	from -10 to +50 °C	88%
	from -10 to +55 °C	80%
Altitude above sea level	4500 m	100%
Allowable air humidity	<95 % (non condensing)	
Noise level standard n+1 fans	55 – 65 dBA	
Noise level 100 % redundant fans	65 – 70 dBA	
Degree of protection	IP20 according to IEC 60529	
Paint	Pebble gray, RAL 7032 structured	
Standards		
Safety	IEC / EN 62040-1-2	
EMC	IEC 62040-2, EN 50091-2	
Performance	IEC / EN 62040-3, IEC 60146-1-1	
Conformity	CE-Label	
Efficiency	up to 94 % depending on type	
Cooling	Natural convection up to 100A / 220V and Top forced-air ventilation with redundant n+1 monitored fans	
Data subject to change		

R.C.	Type	Rectifier Input Parameters		Loss (Kw)	Wt.	Dim.		
		Current	kVA			W(mm)	D(mm)	H(mm)
Rated Voltage: 24V								
63	SRE31-400/24-63A	4.0	2.8	0.4	200	600	800	2200
125	SRE31-400/24-125A	8.0	5.6	0.6	250	600	800	2200
200	SRE31-400/24-200A	13	9	1.0	300	600	800	2200
400	SRE31-400/24-400A	27	18.6	2.0	500	1200	800	2200
630	SRE31-400/24-630A	42	29.0	3.2	600	1200	800	2200
800	SRE31-400/24-800A	52	36	3.8	800	1200	800	2200
1250	SRE31-400/24-1250A	80	55	5.9	1000	1200	800	2200
1600	SRE31-400/24-1600A	104	72	7.6	1200	1200	800	2200
2500	SRE31-400/24-2500A	163	112	11.9	1800	1800	800	2200
Rated Voltage: 48V/60V								
63	SRE31-400/48(60)-63A	8.8	6.1	0.6	300	600	800	2200
125	SRE31-400/48(60)-125A	17	11.7	1.2	400	600	800	2200
200	SRE31-400/48(60)-200A	27.5	19.0	1.9	500	600	800	2200
400	SRE31-400/48(60)-400A	55	38.0	3.8	800	1200	800	2200
630	SRE31-400/48(60)-630A	87	60.0	6.0	1100	1200	800	2200
800	SRE31-400/48(60)-800A	112	77.7	9.3	1200	1200	800	2200
1250	SRE31-400/48(60)-1250A	175	121.5	14.6	1800	1800	800	2200
Rated Voltage: 110V								
63	SRE31-400/110-63A	15.7	10.8	0.8	400	600	800	2200
125	SRE31-400/110-125A	31	21.4	1.6	500	600	800	2200
200	SRE31-400/110-200A	50	34.5	2.5	800	1200	800	2200
400	SRE31-400/110-400A	100	69.0	4.9	1150	1200	800	2200
630	SRE31-400/110-630A	155	107	7.9	1500	1200	800	2200
800	SRE31-400/110-800A	199	137.8	12.4	1600	1200	800	2200
1250	SRE31-400/110-1250A	300	207.5	20.7	2000	1800	800	2200
1600	SRE31-400/110-1600A	383	265.4	26.5	2100	3000	1000	2200
2500	SRE31-400/110-2500A	599	414.7	41.4	2400	3600	1000	2200
3200	SRE31-400/110-3200A	766	530.8	53	4200	4200	1000	2200
4000	SRE31-400/110-4000A	958	663.5	66	4300	4200	1000	2200
Rated Voltage: 220V								
63	SRE31-400/220-63A	31	21.4	1.1	400	600	800	2200
125	SRE31-400/220-125A	61	42.1	2.3	800	1200	800	2200
200	SRE31-400/220-200A	98	67.6	3.6	1100	1200	800	2200
400	SRE31-400/220-400A	195	135	7.2	1300	1200	800	2200
630	SRE31-400/220-630A	308	213	11.4	1600	1200	800	2200
800	SRE31-400/220-800A	390	269	14.5	2600	1800	800	2200
1250	SRE31-400/220-1250A	599	414.7	41.4	2800	1800	800	2200
1600	SRE31-400/220-1600A	766	530.8	53	3600	3000	1000	2200
2500	SRE31-400/220-2500A	1197	829.4	82	4000	3600	1000	2200
3200	SRE31-400/220-3200A	1532	1061.6	105	4400	3600	1000	2200
4000	SRE31-400/220-4000A	1915.5	1327	130	4800	3600	1000	2200

## HRE series

### Industrial Grade DC power supply

## HRE series DC power supply

### Dynamic adaptive monitoring technology

- |   |  |
|---|--|
| 1. Customize monitoring content according to user needs;  | 4. Dynamically generate IEC61850 protocol model files according to the system configuration;         |
| 2. Configuration table import configuration mode, support multiple configuration modes offline and online;              | 5. Integrated power supply system monitoring and subsystem monitoring are mutually redundant backup; |
| 3. Automatically generate human-machine interfaces such as real-time system diagrams according to system configuration; | 6. The system can be freely tailored and expanded wirelessly;  |

### Communication technology

- |  |  |
|--|--|
| 1. Built-in IEC61850 communication protocol;                               | 3. Multi-mode network time synchronization;                        |
| 2. The communication logic model fully complies with the DL/T329 standard; | 4. Optical fiber communication and dual network redundancy design; |

### ★★ Description ★★

- |   |   |
|---|---|
| 1. When configuring subsystem monitoring, it can be mutually redundant configuration with subsystem monitoring;                         | 5. The display interface size can provide a variety of options according to the substation level;           |
| 2. Without subsystem monitoring, it can independently complete the full parameter monitoring of 10-750kv substations of various levels; | 6. High-resolution, high-brightness true color industrial-grade TFT touch screen;                           |
| 3. Modular configuration technology;  | 7. Equipped with multiple communication interfaces such as USB port, Ethernet port, RS232/485 port and CAN; |
| 4. A customized man-machine interface that fully corresponds to the system configuration;   | 8. Bottom CAN bus communication.  |

Dynamic adaptation, easy to cut, highly self-healing

Monitoring content is automatically generated according to the monitored object

Support multiple bus options such as CAN bus

## Technical parameter

SER-M-10 System monitoring	
Supply voltage	DC24V
Supply current	≤1.5A
Product configuration	The main frequency is 400MHZ
	RAM 64M
	RAM 128M
	10.4-inch screen
The interface	2 RS485 ports, 1 CAN port, 1 100M Ethernet port, 1 USB master port, 1 USB slave port
The interface	315×239×56mm



## HRE series

### Incoming line monitoring unit



1. It can measure the voltage of two incoming lines, bus voltage and current, input circuit breaker status, bus connection status, ATS status, lightning protection status, etc.;
2. It can detect 16 feeder status signals;
3. It can be connected to a three-phase electric energy meter to collect bus input power, power factor, frequency, various electrical energy, etc.;
4. Support 6 working modes, automatic or manual control of ATS operation;
5. With multiple protection functions, such as overload, grounding protection, etc.;
6. Built-in real-time clock with a resolution of 1ms to record event occurrence time;
7. Locked switching prevents the spread of faults;

SER-ATS-10 Incoming line monitoring unit	
Supply current	≤0.1A
Detection amount	Two-way incoming line voltage, bus voltage and current, zero sequence current, 32-way switch input, 21-way relay output, 8-way DIP switch, power meter interface
Communication Port	2-way RS485 interface 1 CAN bus interface
size	424×200×55mm

### Feeder monitoring unit



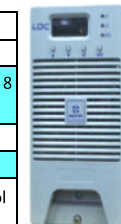
1. Comprehensive feed parameter management
2. A single module completes the functions of switching detection, insulation monitoring and current detection
3. Simultaneous detection of 16 feeder trip status, switch status, current/leakage current
4. Compatible with operation power supply, communication power supply and inverter power feeder detection
5. Support parallel use, unlimited expansion

SRE-K-10 Feeder monitoring unit	
Supply voltage	DC80-320V AC80-264V
Supply current	≤0.1A
Detection amount	32 switch inputs, 16 analog inputs, 8 dial switches
Communication port	1 RS485 interface 1 CAN bus interface
Size	299×138×55mm

### DC Monitoring



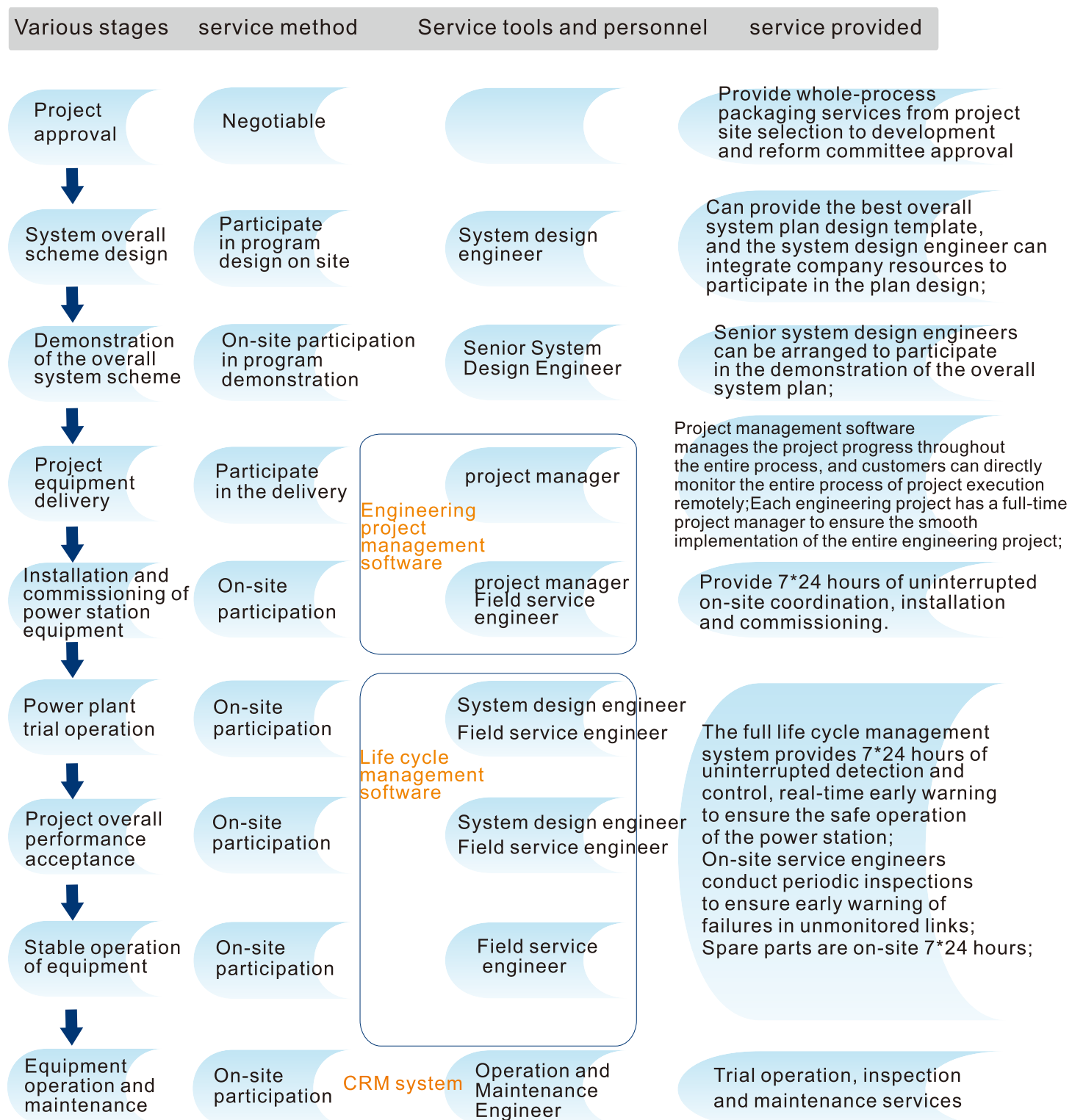
SER-DC-10 DC monitoring unit	
Supply voltage	DC80-320V AC80-264V
Detection amount	8 switch inputs, 8 relay outputs, 8 analog inputs, 8 dial switches, 1 temperature signal
Communication port	1 RS485 interface 1 CAN bus interface
Technical characteristics	It can detect the status of 8 switches and control the output of 8 relay contacts
	It can detect the voltage and current of a section of busbar, control bus and battery, and can detect the insulation status of the busbar
	Can detect the temperature status of one way



### Rectifier module

R22010F/20F/30F Rectifier module				
Technical parameter	Stabilization accuracy	≤0.5%	Steady flow accuracy	≤0.5%
	Conversion efficiency	≥94%	Audible noise	≤55db
	Ripple factor	≤0.1%	Fluidity	≤3%
Technical characteristics	Features	CAN bus communication technology, full soft switch technology		
	Enter	380V±15% , 50HZ±10%		
	Output	10A-30A/230V(180V-286V)		
	Cooling method	Smart air cooling		

## End-to-end full process service



## Project consultancy

LDC's project engineers are committed to tailor-made solutions for each individual customer's specific needs. In the development of the solution, they work closely with customers to understand the specific project requirements in depth, and propose the most effective design to meet the performance requirements.

Our team can provide expert advice and assistance to help you develop reliable and sustainable solutions. LDC provides you with lifelong service and support to ensure that your critical power protection system is kept in its best condition at all times.

## Trial operation, inspection and

- For full-time safe power supply

For UPS, service quality and product quality are equally important. Our CIM department has more than 50 professional maintenance engineers who provide services to users all over the world, including:

1. Trial operation, testing and maintenance of equipment
2. Preventive maintenance
3. Regular maintenance during the warranty period
4. Remote control and technical support
5. Keep the connection with the CIM center open
6. Correction update of equipment and update of UPS software

## Within reach

- Quick Service

We have CIM engineers all over the world. In order to solve problems for customers faster. Guarantee to:

1. Quick response
2. Sufficient inventory at the manufacturer
3. Expert Service

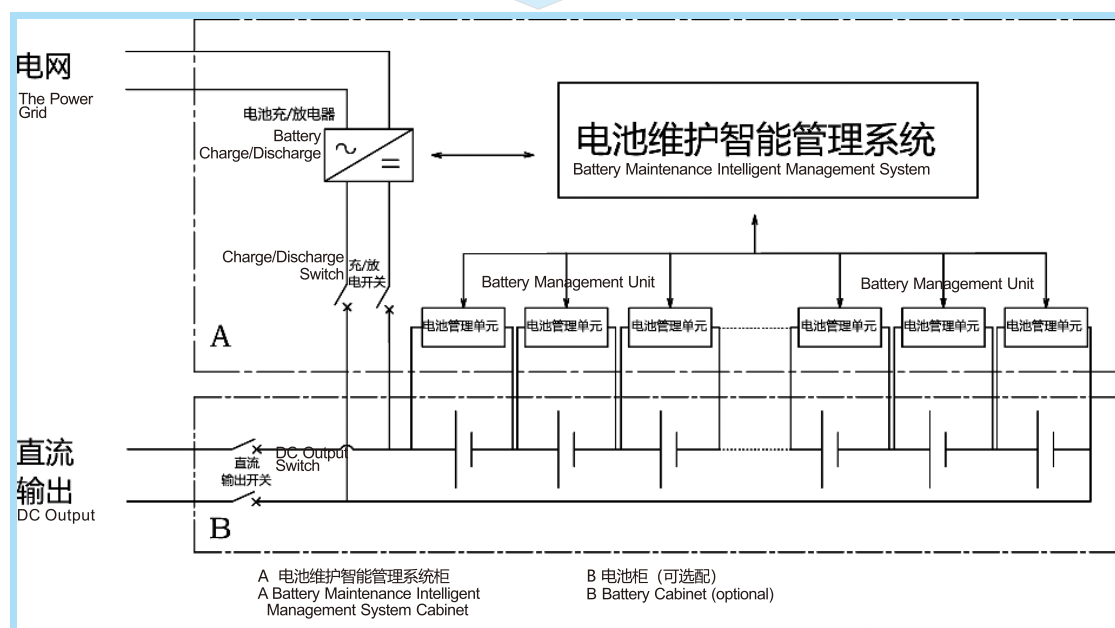
## Training

- The best UPS management method

LDC UPS provides users with training on operation, maintenance and usage methods. The location can be the manufacturer or the user site.

## Battery Life Cycle Management System

### Block diagram



### Implemented function

#### 1. Realize maintenance-free during the life cycle of battery pack:

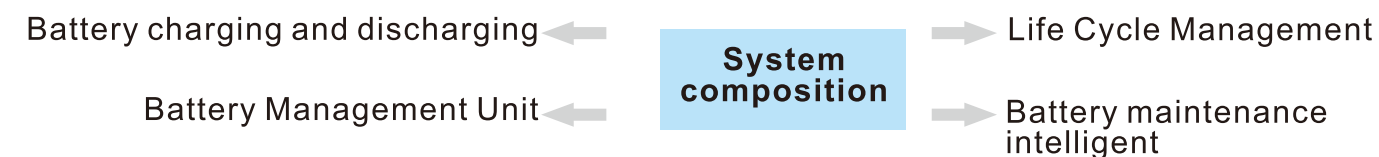
On the one hand, the battery maintenance intelligent management system can manage each battery through the management unit of each battery pack. When the energy between the battery packs is unbalanced, the energy is transferred from high to low, so as to realize each battery in the series. The resistance and battery voltage are exactly the same. On the other hand, the entire battery system is controlled by the battery maintenance intelligent management system to charge and discharge the battery through the power grid. This eliminates the need for artificial periodic charging and discharging of the battery, and truly realizes the maintenance-free life of the battery.

#### 2. Realize automatic maintenance during the life cycle of battery pack:

All "actions" for battery maintenance are all set in the system; the system automatically performs according to the settings.

#### 3. Self-management:

It is equipped with an intelligent management chip and has self-recovery ability. It can self-maintain the battery without connecting to external power to reach the standard internal resistance value; it can also detect battery voltage, battery internal resistance, battery temperature, remaining capacity, etc. ;



### Introduction to each component

1 Life cycle management platform (previously introduced)

2 Battery maintenance intelligent management system

This part is the management and coordination center of the entire system, regulating and controlling the operation of other parts of the system. The key parameters of the key components affecting the performance and reliability of the equipment are all collected in the database, updated and calculated at any time, and then compared with the standard values and critical values of the key parameters of the key components preset in the system to monitor the key in real time Real-time warning of parameter status. Make the reliability of the equipment completely under your control!

3 Battery charging and discharging device

This part contains two parts: the charger and the discharge meter. When the battery loses power, the power grid charges the battery through the charger. Each battery in the series is assigned a different charging current according to the difference of the battery, and the battery "lags behind" The charging current is large, and the charging current of the "leading" battery is small, so that each battery in the series is completely "charged" and completely consistent. When the battery needs to be discharged, the battery pack can either discharge to the load equipment or discharge to the grid through the discharge meter.

3 Battery management unit

This part of the maintenance system adopts automatic equalization technology, which can convert energy between batteries. High-energy batteries transfer excess energy to low-energy batteries to charge low-energy batteries; thus reaching each in the series. The internal resistance of the battery and the battery voltage are exactly the same; it can make the control of each part more accurate and more efficient. Each group of batteries in this system is equipped with its own independent management unit, so that the parameters of each group of batteries can be obtained more accurately, making the entire system more stable and healthy.