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EA890 3/3 UPS Introduction 10KVA-120KVA

GUANGDONG EAST POWER CO., LTD

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01 Product Description

EA8910-120kVA (3/3) series UPS is an intelligent three inputs and three outputs online double conversion UPS, which is designed and manufactured by EAST with the newest R&D achievement and application experience. This series of UPS is adopts the device design of word's top brand, advanced DSP digital control technology, intelligent man-machine interface and powerful network management system. It can provide safe and reliable power supply for the centralized server room, network management center, computer center and industrial automation equipment.

Applications

It is applicable for finance, communication, insurance, transport, taxation, military, securities, energy, education, government, enterprise etc., which provides a strong power supply protection for loads.



Highlights

1

**High
reliability**

3

**High
availability**

5

**High
intelligence**



2

High usability

4

**Options and
accessories**

6

**Energy
conservation and
environmental
protection**

① High Reliability

Digital control	It adopts advanced DSP control technology that effectively improves the product performance and system reliability.
Rear air draft radiating	Rear air draft can be used to effectively reduce the corrosion from the dust, water and other impurities on power lines and internal components and improve the reliability of UPS in harsh environment.
Intelligent fan speed control	The fan speed can be controlled intelligently according to load, which can reduce the noise around the device and extend the service life of the fan.
Perfect hardware and software protection	Integrating a variety of functions, such as AC input over/undervoltage, overload, short circuit, over temperature, IGBT current-limiting protection, battery undervoltage alarm and battery overcharge protection. This securely guarantees stability and reliability of system operation.

② High Usability

<p>Big LCD display</p>	<p>View via LCD: operating mode, input voltage/frequency, battery voltage capacity, output voltage/frequency, load, internal temperature, alarm code, mute status, fan status, fault display etc.</p> <p>Operate via keys: startup, shutdown, setting, query, mute, battery self-inspecting.</p>
<p>Multi-function setting</p>	<p>Operating mode: UPS mode, ECO mode, EPS mode, voltage regulation mode, frequency conversion mode.</p>
	<p>The function of the rectifier delaying start: the delaying time: 0-300 s (settable), 10 s (default).</p>
	<p>The input current-limiting function: 0.1-1.25 times of rate full-load input current, 1.25 (default).</p>
	<p>Charging current (settable): charging current = charging rate* battery capacity * the number of battery pack.</p>
<p>Miniaturization design</p>	<p>Adopting full digital control technology; realizing device miniaturization and reducing the occupied area via optimizing circuit structure and duct.</p>

③ High Availability

Wide input voltage range	Input voltage 165V~275VAC, frequency 45Hz ~55Hz. It is suitable for harsh grid environment, greatly reduce the number of battery discharge, extend the service life of the battery and match the small capacity generator easily.
High output power factor	The output power factor is 0.9, which can take more 12.5% loads than the conventional products.
Fast and stable charging	Optimized charging mode makes the charging speed doubled. Floating charge and equalizing charge voltage are settable, which can match more battery brands and extend the service life of battery.
Cold start function	When mains power is not available, the inverter can be started by battery to meet the requirement of emergency application.
Zero transfer	Online double-conversion design; the transfer time of UPS power supply mode is zero when the mains power is instable, which effectively ensures the safety and reliability of load operation.

④ Options and Accessories

Optional accessories

① SNMP card ② SMS alarm ③ Filter ④ Battery temperature compensator

⑤ High Intelligence

Communication management

Intelligent slots can provide various communication functions; RS232, RS485, SNMP card and dry contact card and SMS alarm are selectable.

Battery management

Intelligent battery management, automatic floating/equalizing charge control, extending battery service life. Regular battery self-inspecting function.

⑥ Energy Conservation and Environmental Protection

ECO mode	Under the good grid condition, it will start the ECO mode and the device operating efficiency is closed to 97%, energy-efficient.
Mode optional	ECO mode can be set on the panel directly, convenient and quick.

02 Product Overview

02 Product Overview

Front panel



Dimensions (W×D×H)
400×800×1100mm

10kVA~40kVA



Dimensions (W×D×H)
600×700×1500mm

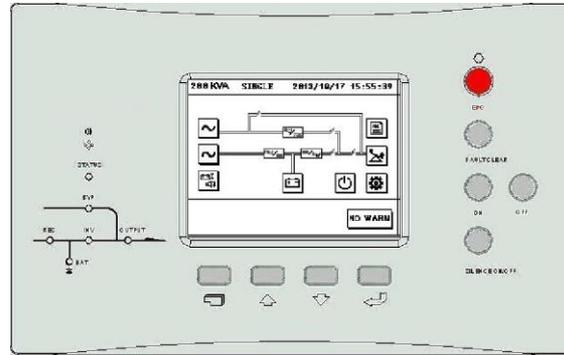
60kVA



Dimensions (W×D×H)
700×800×1700mm

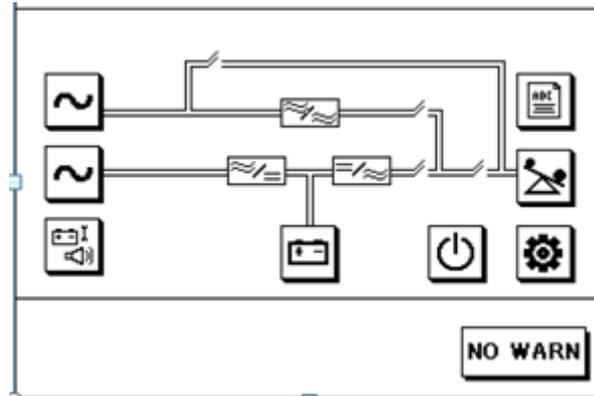
80kVA~120kVA

① LCD Panel Features



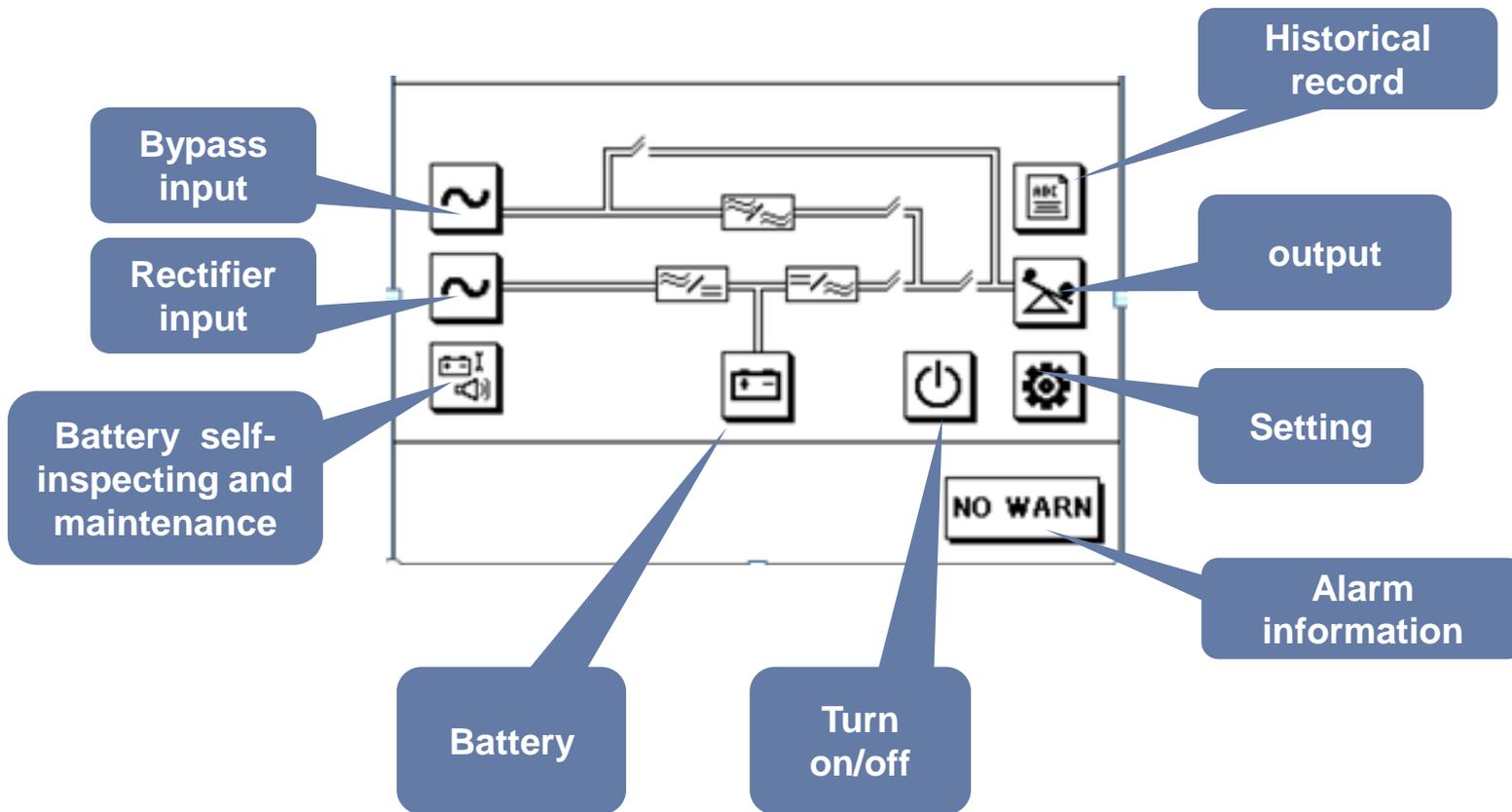
Button	Description
	Switching
	Page up
	Page down
	confirm
EPO	Terminate the output
ON	Startup
OFF	Shutdown
FAULT CLEAR	It needs manually clearing fault information after troubleshooting.
SILENCE ON/OFF	Turn on/off the alarm

② LCD Panel Features

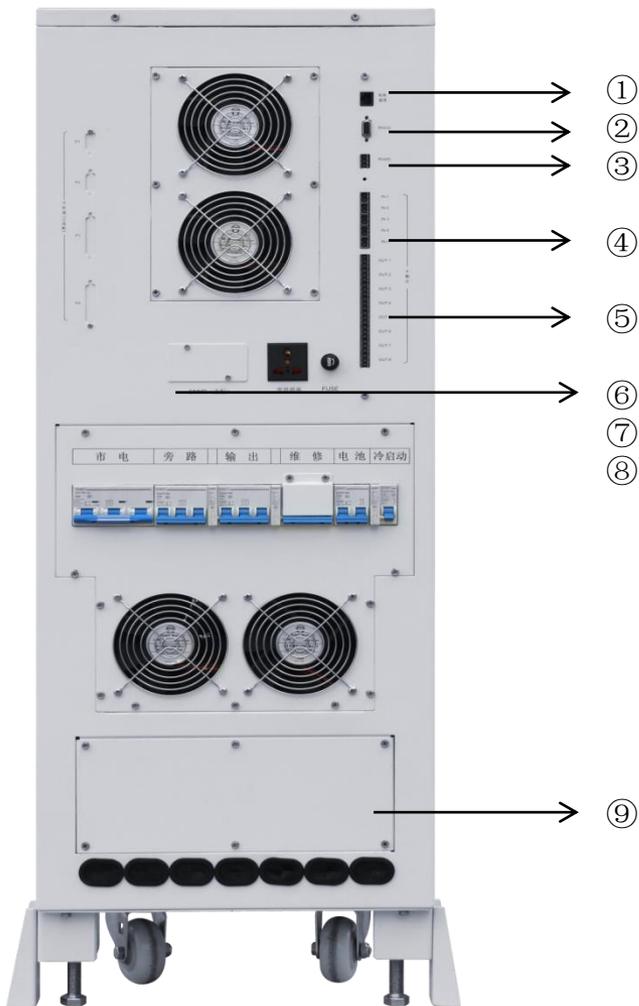


Button	Description	Button	Description
	Setting		Return to the previous menu
	Battery		Page up
	On/off		Page down
	Input		The left page
	Output		The right page
	Battery self-inspecting		Switching
	Historical record		Confirm
	Back to the main interface		Delete

③ Display Interface



④ Back Panel Features

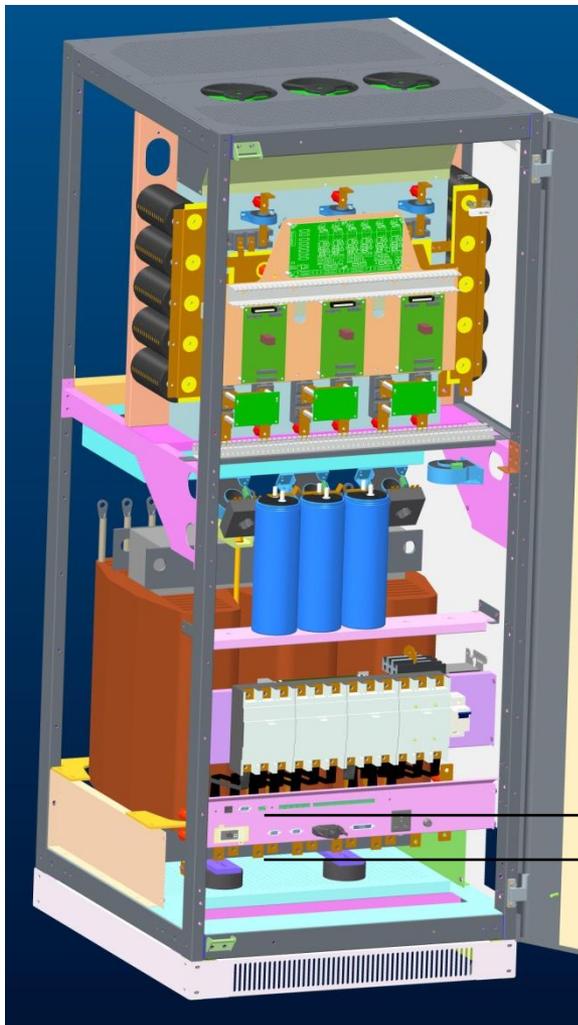


10kVA~40kVA

Rear panel

① Battery temperature collection	⑥ SNMP
② RS232 communication interface	⑦ Maintenance socket
③ RS485 communication interface	⑧ Maintenance socket fuse
④ Input dry contact	⑨ Wiring terminal
⑤ Output dry contact	

⑤ UPS internal Features



→ ①~⑤ From left to right
 → ⑥~⑨
 ⑩Copper bar

60kVA~120kVA

Internal view

① Battery temperature collection	⑥ SNMP
② RS232 communication interface	⑦ Parallel interface P1-P4
③ RS485 communication interface	⑧ Maintenance socket
④ Input dry contact	⑨ Maintenance socket fuse
⑤ Output dry contact	⑩ Wiring terminal

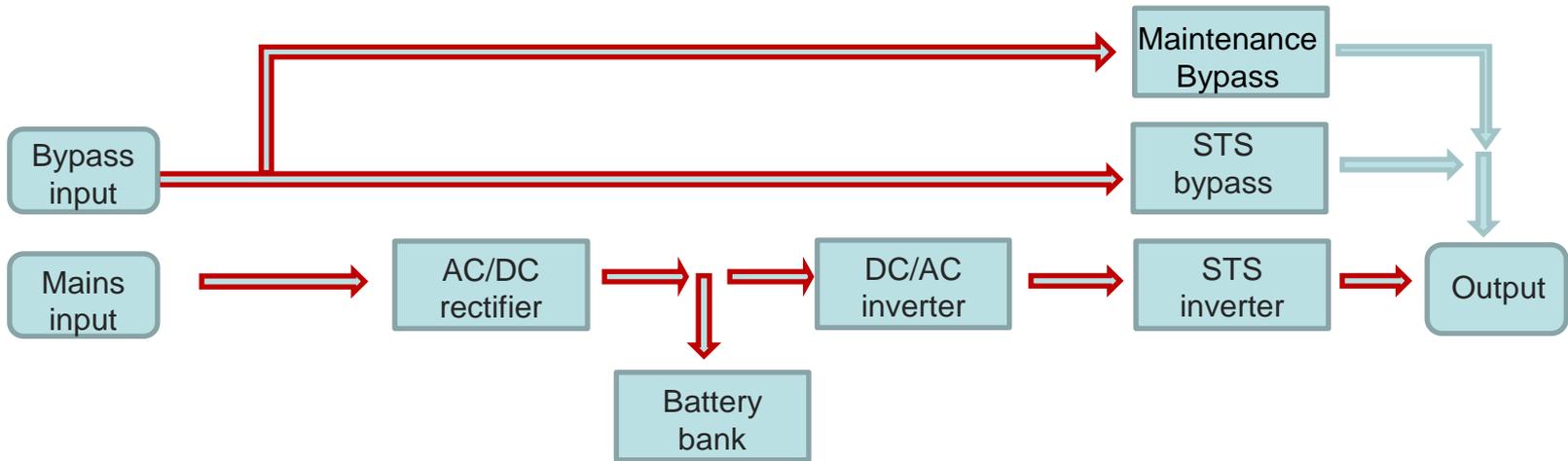
03 Working principle introduction

Working principle introduction

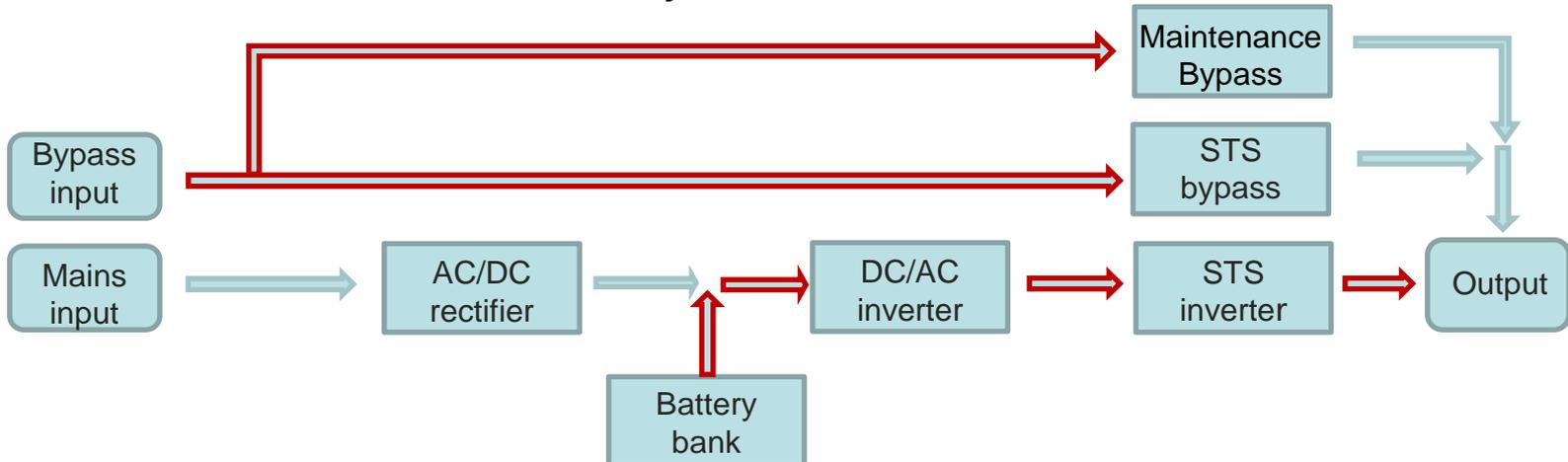
Operating mode	LCD display	Description
UPS mode	UPS	It is default operating mode; mains power provides reliable sine wave output for load via rectifier and inverter and charges the battery.
ECO mode	ECO	It is energy conservation mode with high efficiency; the output will vary with the input within the voltage range. It is available for the load that has not high requirement for voltage accuracy.
EPS mode	EPS	It is emergency working mode. If the mains power is normal, it provides power supply for load; if the mains power is abnormal, the battery and inverter provide power supply for load.
Frequency conversion mode	CUCF	It can operate under the situation that input is 50Hz and output is 60Hz or input is 60Hz and output is 50Hz.
Voltage regulation mode	RPS	When the battery is not available, the output will track the bypass frequency and rated output voltage.

Working principle introduction

Mains mode

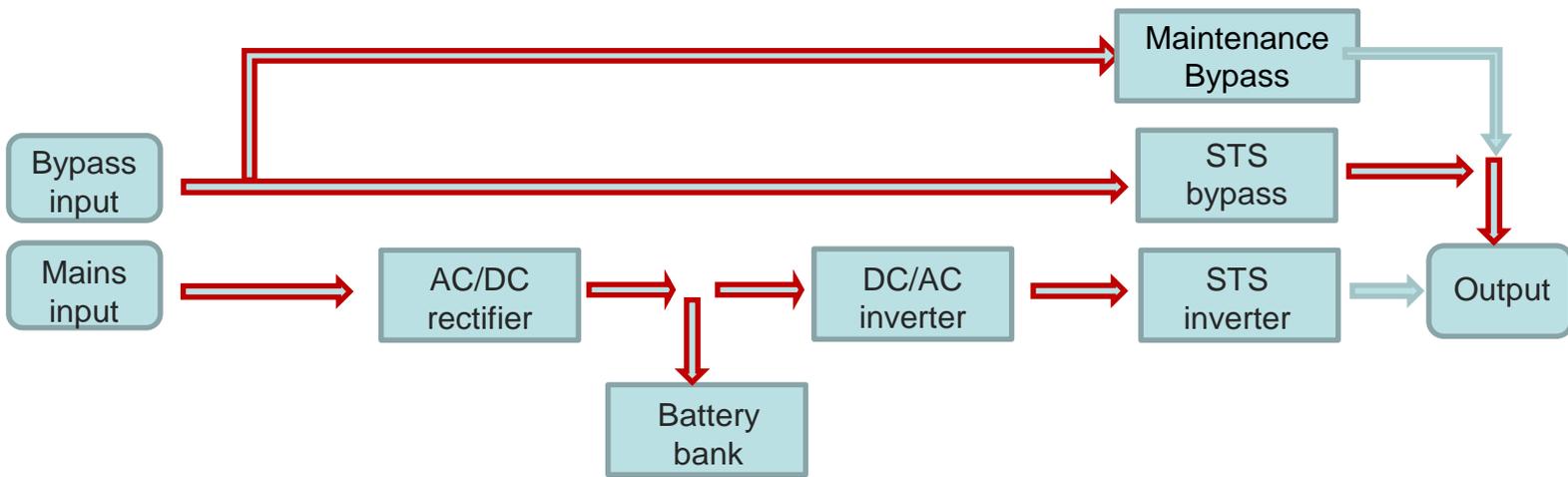


Battery mode

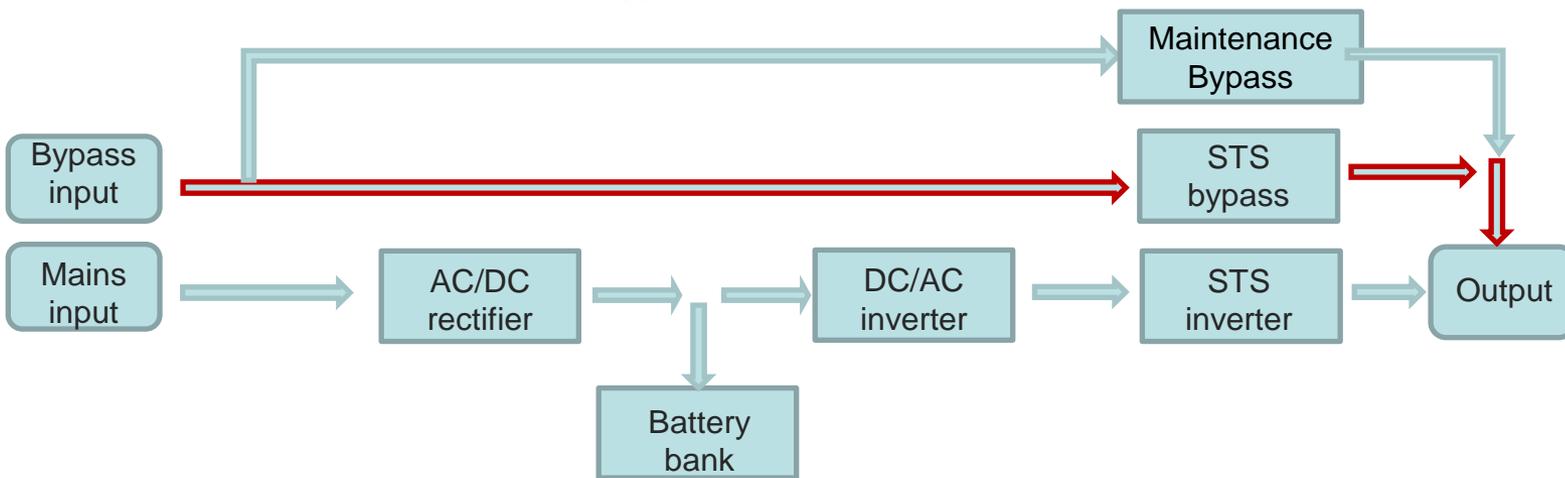


Working principle introduction

ECO mode

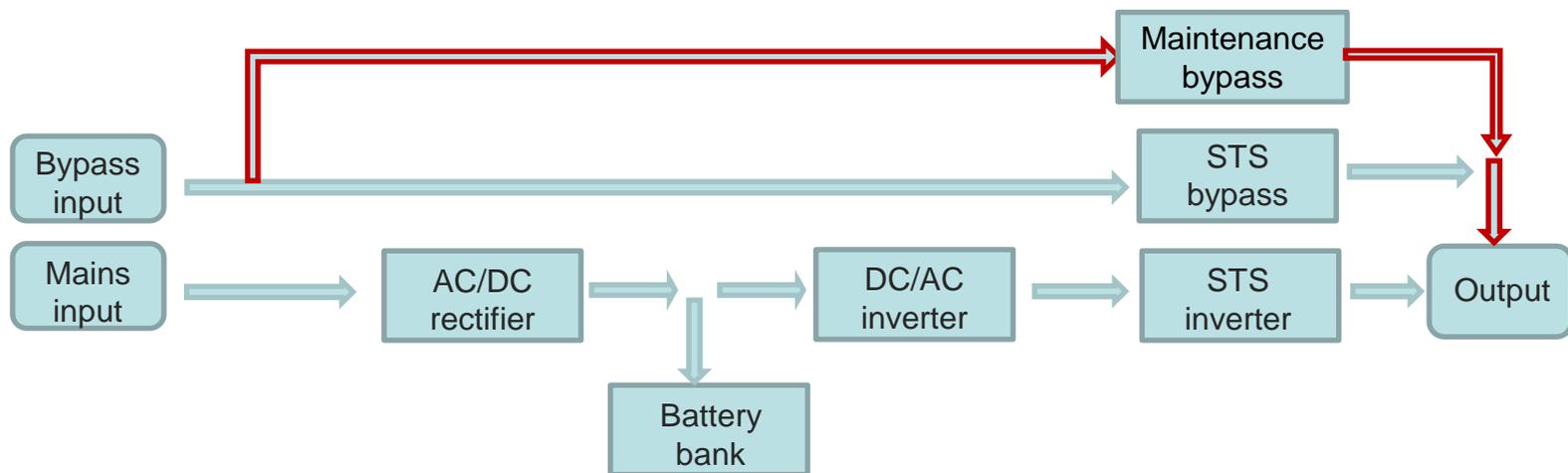


Bypass mode



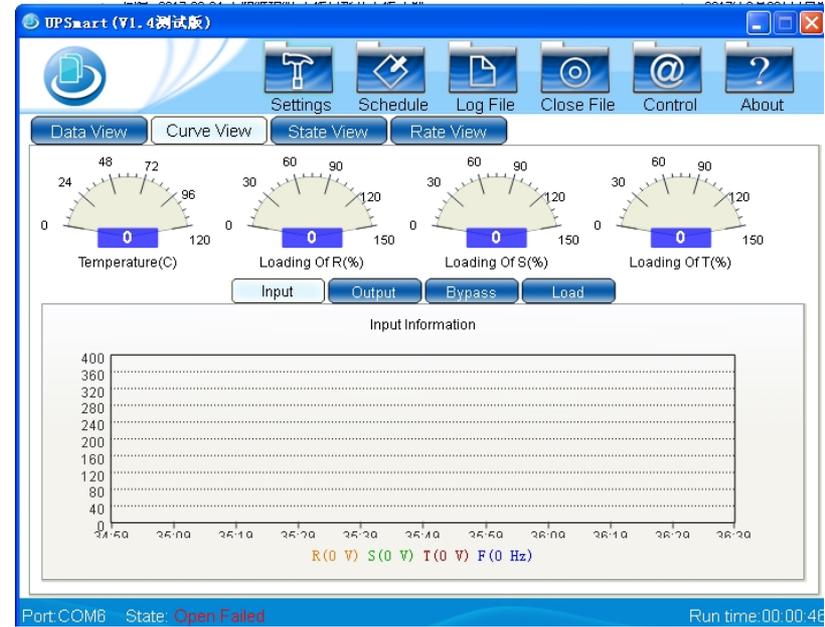
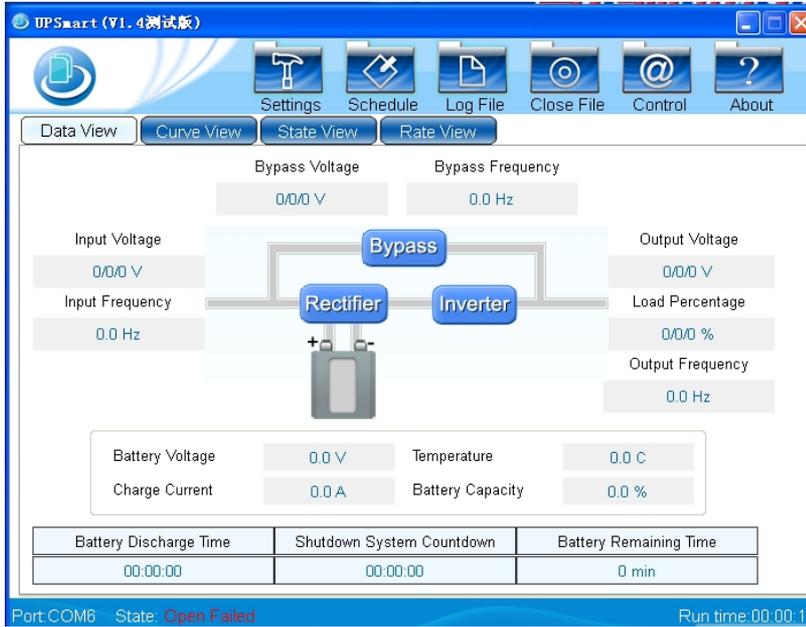
Working principle introduction

Maintenance Bypass mode



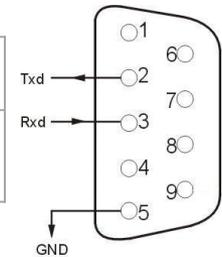
04 Monitoring Interface

① RS232/USB Monitoring Interface



RS232 port

Pin	1	2	3	4	5	6	7	8	9
Indication	Empty	Transmit	Receive	Empty	Ground	Empty	Empty	Empty	Empty



② SNMP Monitoring Interface

The screenshot shows the iStars web interface for SNMP monitoring. The browser address bar displays '192.168.163.6/User_2'. The page title is 'iStars' and the current location is 'UPS Status Info > Real-time Data'. The main content area is titled 'Real-time Data' and contains a table with the following data:

Real-time Data		
Battery Information	Battery Discharge Time(s)	0
	Remaining Time of Battery(%)	0
	Remaining Capacity of Battery(%)	0
	Battery Voltage(V)	2.0
	Battery Current(A)	0.0
Input Information	Input Voltage A/S/T(V)	0/0/0
	Input Frequency A/S/T(Hz)	0/0/0/0/0
Output Information	Output Frequency(Hz)	0.0
	Output Voltage A/S/T(V)	0/0/0
	Output Load A/S/T(%)	0/0/0
Bypass Information	Bypass Frequency(Hz)	0.0
	Bypass Voltage A/S/T(V)	0/0/0
Other Information	Temperature(°C)	25

The screenshot shows the iStars web interface for SNMP monitoring. The browser address bar displays '192.168.163.6/User_2'. The page title is 'iStars' and the current location is 'UPS Status Info > Real-time Status'. The main content area is titled 'Real-time Status' and contains a table with the following data:

Real-time Status		
Battery Information	Battery Voltage Low	Ok
	Battery End of Discharge	Ok
	Battery Testing	Ok
	Battery Fused	Ok
	Battery Boost Charge	Ok
Input Information	Input Fault	Yes
	Power Supply Mode	Bypass
Output Information	Output Fault	Ok
	Output Overload	Ok
Bypass Information	Bypass Fault	Yes
	UPS Type	On-Line
System Information	OverTemperature	Ok
	Charger Fault	Ok
	UPS Fault Shutdown	Ok
	Fan Failure	Ok
	Fire Failure	Ok

SNMP network monitoring is compatible with the software and hardware that are popular on the internet and network operating system, so that UPS has direct web-surfing capability, providing instant UPS data and power messages. Moreover, it can realize communication and management via various network management system and the network communication of multiple UPS, which is convenient for centralized monitoring and management of each UPS.

Online access software

05 Specifications

Specifications

Model	EA8910	EA8915	EA8920	EA8930	EA8940	EA8960	EA8980	EA89100	EA89120
Capacity	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA
INPUT									
Input phase	Three-phase five-wire(3Φ+N+PE)								
Rated voltage	220VAC/230VAC /240VAC								
Voltage range	±25% of mains rated voltage, ±20 of bypass (settable)								
Frequency range	Rated frequency±5HZ								
Power factor	≥0.95 (filter)								

Specifications

Model	EA8910	EA8915	EA8920	EA8930	EA8940	EA8960	EA8980	EA89100	EA89120
Capacity	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA
OUTPUT									
Output phase	Three-phase five-wire(3Φ+N+PE)								
Rated voltage	220VAC/230VAC/240VAC								
Voltage regulation accuracy	≤1%								
Frequency accuracy	±0.01Hz (Battery mode)								
Power factor	0.9								
Total harmonic distortion (THDV)	Resistive load≤2%; non-resistive load≤5%								
Crest factor ratio	≥3:1								
Inverter overload capability	Load ≤105%: long time working; 105% < load ≤125%: transfer to bypass output in 10min; 125% < load ≤150%: transfer to bypass output in 1min; 150% < load ≤ 200%: transfer to bypass output in 200ms; Load >200%: transfer to bypass output in 100ms.								

Specifications

Model	EA8910	EA8915	EA8920	EA8930	EA8940	EA8960	EA8980	EA89100	EA89120
BATTERIES									
Battery voltage	348V ~ 384V								
Battery type	Lead-acid								
Number of battery	28 ~ 32								
Charging current	Charging current = the charging rate* battery capacity * the number of battery pack								
SYSTEM									
Transfer time	Mains mode to battery mode: 0 ms; Battery mode to bypass mode: 0 ms								
Protection	Over temperature protection, fan fault protection, output short circuit protection, output overload protection, battery low voltage protection, output overvoltage/undervoltage protection etc.								
Communications	Standard configuration; RS232, dry contact card, RS485 card. Optional configuration: SNMP card, SMS alarm, filter.								
Display	LED+LCD								

Specifications

Model	EA8910	EA8915	EA8920	EA8930	EA8940	EA8960	EA8980	EA89100	EA89120
OTHERS									
Operating temperature	0~40°C								
Storage temperature	-25°C~55°C								
Relative humidity	0%~95% (non-condensing)								
Altitude	Altitude ≥ 1000m, derating 1% for each additional 100 m.								
Protection grade	IP20								
Noise level	≤ 65dBA (1m)								
PHYSICAL FEATURES									
Packaged dimensions (W×D×H) (mm)	400*800*1100					600*700*1500	700*800*1700		
Net weight (kg)	158	165	175	210	260	460	590	630	690

06 Applications

Applications in hospitals





Application Television station



Applications in Metra way



Application in ICBC bank



Applications in Hospital