

EP-T 1-3kVA Online Double Conversion AC UPS

User Manual

Version 2.2



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Publish statement

Thank you for purchasing this UPS series.

This UPS is an intelligent, single-phase in/single-phase out, high-frequency online model, designed by our experienced R&D team with years of expertise in UPS technology. With excellent electrical performance, advanced intelligent monitoring, network functionality, and a sleek design, this UPS meets global industry standards. Please read this manual carefully before installation. It provides essential technical support for operators of this equipment.

For proper disposal of the product or its components, please contact your nearest hazardous waste disposal facility.

Contact the nearest hazardous waste disposal station when the products or components are discarded

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1. Important Safety Warning

Important safety instructions – Save these instructions

Please strictly follow all warnings and operating instructions in this manual. Keep this manual in a safe place and carefully read the following instructions before installing the unit. Do not operate the UPS without thoroughly reading all safety information and operating instructions.

There are dangerous voltages and high temperatures inside the UPS. During installation, operation, and maintenance, follow local safety regulations and laws to avoid personal injury or equipment damage. The safety instructions in this manual are supplementary to local safety regulations. The company will not be held liable for any damage or injury resulting from failure to follow these safety instructions.

1-1 Transportation

- Always transport the UPS system in its original packaging to protect it from shock and impact.

1-2 Preparation

- Condensation may occur if the UPS is moved from a cold to a warm environment. Ensure the UPS is completely dry before installation. Allow at least two hours for the system to acclimate to the environment.
- Do not install the UPS near water or in moist environments.
- Avoid installing the UPS in direct sunlight or near heat sources.
- Ensure that the ventilation holes on the UPS housing are not blocked.

1-3 Installation

- Do not connect appliances or devices that could overload the UPS system (e.g., laser printers) to the UPS output sockets.
- Arrange cables to prevent tripping hazards.
- Do not connect household appliances, such as hair dryers, to the UPS output sockets.
- The UPS should only be operated by individuals with appropriate experience.
- Connect the UPS only to an earthed, shockproof outlet that is easily accessible and close to the UPS system.
- Use only VDE-tested, CE-marked mains cables (e.g., your computer's mains cable) to connect the UPS to the building wiring outlet (shockproof outlet).
- Use only VDE-tested, CE-marked power cables to connect loads to the UPS.
- When installing the equipment, ensure that the total leakage current of the UPS and connected devices does not exceed 3.5mA.

- Before installing the UPS, consider the environmental conditions and avoid installation in areas with high temperature, humidity, or dust.

1-4 Operation

- Do not disconnect the mains cable from the UPS system or the building wiring outlet (shockproof socket) during operation. This would disable the protective grounding of the UPS system and all connected loads.
- The UPS system features its own internal current source (batteries). The UPS output sockets or terminal blocks may still carry electrical charge even if the system is not connected to the mains.
- To fully disconnect the UPS system, press the OFF/Enter button to disconnect it from the mains.
- Prevent liquids or other foreign objects from entering the UPS system.

1-5 Maintenance, service and faults

- The UPS system operates with hazardous voltages. Only qualified maintenance personnel should perform repairs.
- Caution – Risk of electric shock: Even after disconnecting the UPS from the mains, components inside the system remain connected to the battery and may still carry live, dangerous voltage.
- Before performing any service or maintenance, disconnect the batteries and verify that no current or hazardous voltage is present at high-capacity components, such as BUS capacitors.
- Only individuals familiar with batteries and the necessary safety precautions should replace or handle batteries. Unauthorized persons must be kept away from the batteries.
- • Caution – Risk of electric shock: The battery circuit is not isolated from the input voltage, and hazardous voltages may exist between the battery terminals and ground. Always verify that no voltage is present before touching.
- Batteries can cause electric shock and have a high short-circuit current. Please take the following safety precautions when working with batteries:
 - Remove wristwatches, rings, and other metal objects.
 - Use only tools with insulated grips and handles.
- When replacing batteries, ensure that the same number and type of batteries are installed.
- Do not dispose of batteries by burning them. This could result in a battery explosion.
- Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes and may be toxic.

- Replace the fuse only with the same type and amperage to avoid fire hazards.
- Do not dismantle the UPS system.

1-6 Symbols used in this guide



WARNING!

Risk of electric shock



CAUTION!

Read this information to avoid equipment damage

2. Installation and setup

NOTE: Before installation, inspect the unit carefully. Ensure that nothing inside the package is damaged. Keep the original packaging in a safe place for future use.

2-1 Unpack checking

- Do not lean the UPS when moving it out of the packaging.
- Check the UPS's appearance for any visible damage from transportation. If any damage is found, do not switch on the UPS. Contact the dealer immediately.
- Verify the accessories against the packing list, and if any parts are missing, contact the dealer.

Included Accessories:

- (1) UPS User's Guide
- (2) USB Cable
- (3) Power Cord (Input or output)

2-2 Real panel view

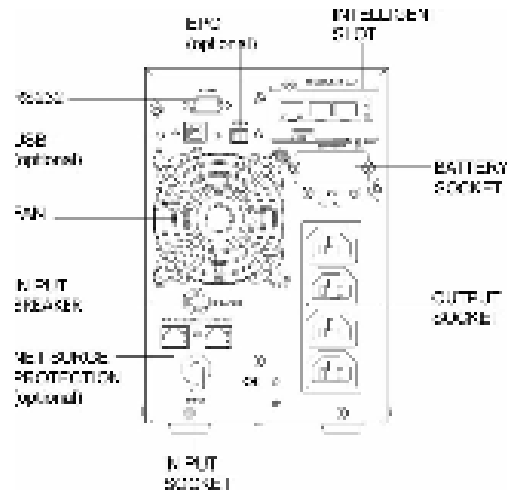


Fig.1 1KVA/1.5KVA Rear Panel View

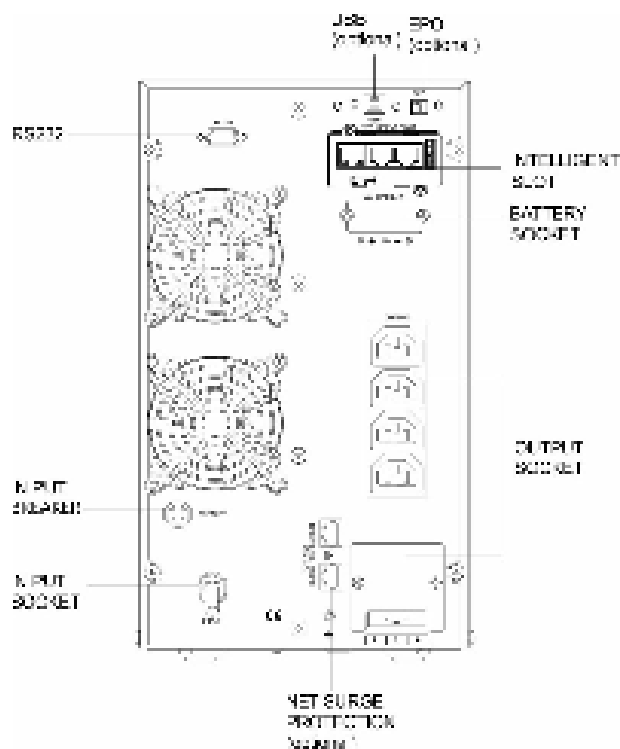


Fig.2 2KVA/3KVA Rear Panel View

2-3 Setup the UPS

Step 1: UPS Input Connection

- Plug the UPS into a two-pole, three-wire, grounded receptacle only. Avoid using extension cords.
- For 200/208/220/230/240 VAC models: The power cord is supplied in the UPS package.

Step 2: UPS Output Connection

- For socket-type outputs: Simply connect your devices to the outlets.
- For terminal-type inputs or outputs: Follow these steps for wiring configuration:
 - a) Remove the small cover of the terminal block.
 - b) It is recommended to use AWG14 or 2.1 mm² power cords for 3KVA (230/240 VAC models).
 - c) After completing the wiring configuration, ensure that the wires are securely affixed.
 - d) Replace the small cover on the rear panel.

Step 3 Communication Connection

Communication Port:



- To enable unattended UPS shutdown/start-up and status monitoring, connect one end of the communication cable to the USB/RS-232 port and the other end to the communication port on your PC. With the monitoring software installed, you can schedule UPS shutdown/start-up and monitor UPS status via your PC.
- The UPS is equipped with an intelligent slot that supports either an SNMP or Relay card. Installing one of these cards will provide advanced communication and monitoring options.

NOTE: The USB port and RS-232 port cannot work simultaneously.

Step 4: Turn On the UPS

Press the ON button on the front panel for two seconds to power on the UPS.

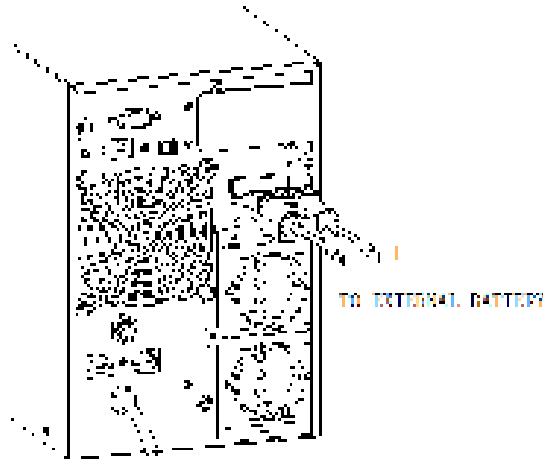
Note: The battery will charge fully during the first five hours of normal operation. Do not expect full battery runtime during this initial charging period.

Step 5: Install Software

Find the download link in the software installation guide included in the packaging box. Download the appropriate software package and install it on your system.

Step 6: External Battery Connection

If your UPS does not include internal batteries, please refer to the chart in the manual to properly connect external batteries.



2-4 UPS Startup and Turn off

● Startup Operation

(1) Turn On the UPS in Line Mode

NOTE Verify that the total equipment ratings do not exceed the UPS capacity to prevent an overload alarm.

- Once the mains power is connected, the UPS will enter standby mode with bypass but no output. All indicator lights will be off, and battery charging will begin. If you wish to switch to inverter output mode, press the "ON" key.
- Press and hold the ON key for more than three seconds to start the UPS, which will then activate the inverter.
- Once started, the UPS will perform a self-test. The LEDs will light up and go off in a circular and orderly manner. When the self-test is complete, the UPS will switch to line mode, and the corresponding LEDs will indicate that the UPS is operating in line mode.

(2) Turn On the UPS by DC (Without Mains Power)

- When mains power is disconnected, press and hold the ON key for more than half a second to start the UPS.
- The startup process will be similar to that when mains power is available. After the self-test is complete, the corresponding LED lights will indicate that the UPS is operating in battery mode.

● Turn Off Operation

(1) Turn Off the UPS in Line Mode

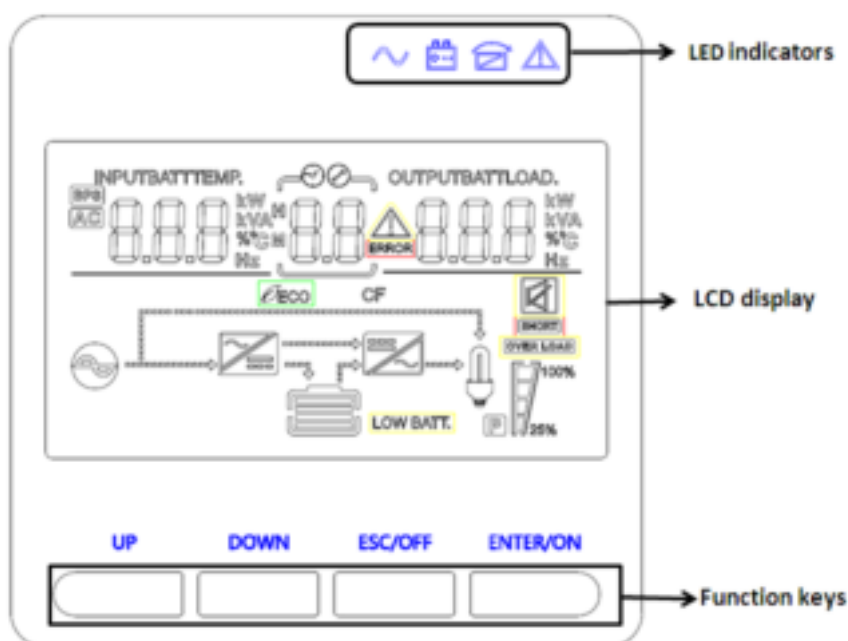
- Press and hold the OFF key for more than half a second to turn off both the UPS and the inverter.
- After the UPS shuts down, the LEDs will go out, and there will be no output. If output is needed, you can set bypass mode to "ON" in the LCD settings menu.

- (2) Turn Off the UPS by DC (Without Mains Power)
 - a) Press and hold the OFF key for more than half a second to turn off the UPS.
 - b) When turning off the UPS, it will do self-testing firstly. The LEDs light and go out circularly and orderly until there is no display on the cover.

● Operation and Display Panel

The operation and display panel, illustrated in the diagram below, is located on the front panel of the UPS. It includes four indicators, four function keys, and an LCD display that conveys the operating status and input/output power information.

LCD Control Panel Introduction



- (1) LED Indicators (from right to left: "Alarm" , "Bypass" , "Battery" , "Inverter");
- (2) On-Line UPS LCD Display;
- (3) Function Keys

LED Indicator

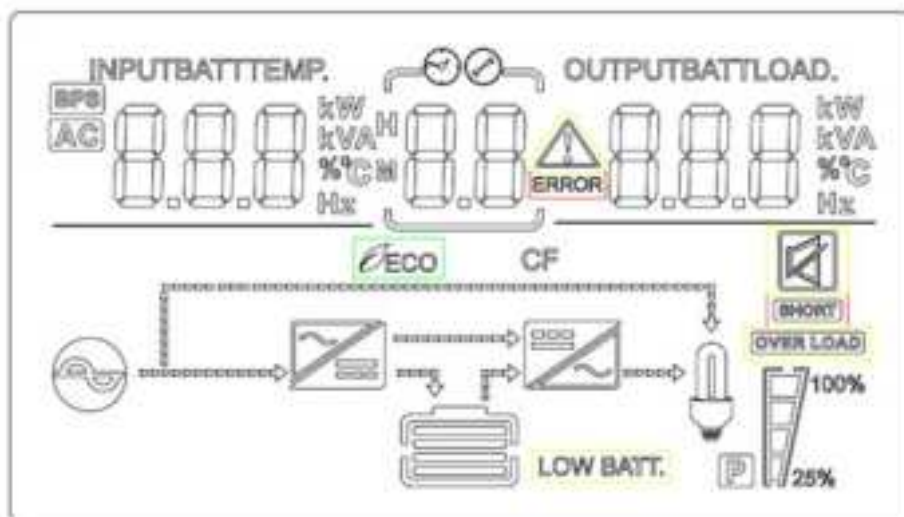
Indicator	Status	Description
 Red	On	The UPS has an active alarm or fault.
 Yellow	On	The UPS is in Bypass mode. The UPS is operating normally on bypass during high-efficiency operation.

 Yellow	On	The UPS is in Battery mode.
 Green	On	The UPS inverter is operating normally in Online mode and Battery mode.
NOTE When power on or startup, these indicators will turn on and off sequentially. NOTE On different operation modes, these indicators will indicate differently.		

Function Keys

Function Key	Description
ESC/OFF	To turn off the UPS or exit the setting mode without saving changes.
UP	To navigate to the previous selection.
DOWN	To navigate to the next selection.
ENTER/ON	To turn on the UPS or confirm the selection in setting mode.

LCD Display Icons



Icon	Function description												
Input Source Information													
	Indicates the AC input.												
	Indicates input voltage, input frequency, battery voltage and Temperature.												
Configuration Program and Fault Information													
	Indicates the setting programs.												
	Indicates the warning and fault codes. Warning:  flashing with warning code. Fault:  lighting with fault code												
Output Information													
	Indicate output voltage, output frequency, load percent, load in VA, load in Watt												
Battery Information													
	Indicates battery level by 0-24%, 25-49%, 50-74% and 75-100% in battery mode and charging status in line mode.												
In AC mode, it will present battery charging status.													
<table><tr><th>Status</th><th>Battery capacity</th><th>LCD Display</th></tr><tr><td rowspan="4">Floating mode</td><td>0-24%</td><td>4 bars will flash in turns</td></tr><tr><td>25-49%</td><td>Bottom bar will be on and the other three bars will flash in turns</td></tr><tr><td>50-74%</td><td>Bottom two bars will be on and the other two bars will flash in turns</td></tr><tr><td>75-100%</td><td>Bottom three bars will be on and the top bars will flash</td></tr></table>		Status	Battery capacity	LCD Display	Floating mode	0-24%	4 bars will flash in turns	25-49%	Bottom bar will be on and the other three bars will flash in turns	50-74%	Bottom two bars will be on and the other two bars will flash in turns	75-100%	Bottom three bars will be on and the top bars will flash
Status	Battery capacity	LCD Display											
Floating mode	0-24%	4 bars will flash in turns											
	25-49%	Bottom bar will be on and the other three bars will flash in turns											
	50-74%	Bottom two bars will be on and the other two bars will flash in turns											
	75-100%	Bottom three bars will be on and the top bars will flash											
Load Information													
	Indicates overload.												
	Indicates the load level by 0-24%, 25-49%, 50-74% and 75-100%.												

	0%~24%	25%~49%	50%~74%	75%~100%
				
Mode Operation Information				
	Indicates unit connects to the mains.			
	Indicates load is supplied by utility power.			
	Indicates the utility charger circuit is working.			
	Indicates the DC/AC inverter circuit is working.			
Mute Operation				
	Indicates unit alarm is disabled.			

3. Operations

3-1 Button Operation

Button	Function
ON /ENTER	➤ Turn on the UPS: Press and hold the ON button for at least 2 seconds to turn on the UPS . ➤ Confirm current settings: In setting mode, press this button to confirm your desired setting. Use the UP/DOWN buttons to change the setting values ➤ Exit bypass mode: If the UPS is in bypass mode, press and hold this button to switch back to normal mode. ➤ Switch to UPS self-test mode: Press and hold this button for 2 seconds to enter the UPS self-test mode while in AC mode.
OFF/ESC	➤ Turn off the UPS: Press and hold this button for at least 2 seconds to turn off the UPS in battery mode. The UPS will either switch to standby mode under normal power conditions or transfer to bypass mode.

	➤ Turn off the UPS: Press and hold this button for at least 2 seconds to turn off the UPS in battery mode. The UPS will either go to standby mode under normal power conditions or transfer to bypass mode if the bypass is enabled. ➤ Exit setting mode: Press this button to exit the setting mode without saving any changes.
UP	➤ Navigate Up: Press this button to display the previous selection in the UPS setting mode.
DOWN	➤ Navigate Down: Press this button to display the next selection in the UPS setting mode. ➤ Confirm Selection & Exit : Press this button to confirm a selection and exit the setting mode when the last selection is displayed on the LCD.
UP + DOWN	➤ Enter Setting Mode: Press and hold both buttons for 5 seconds to enter the UPS setting mode.

3-2 LCD Display

Part one: Rack display

The LCD display offers 8 interfaces that provide essential information about the UPS's status and operation.

Item	Interface Description	Content Displayed
01	Input voltage& Output voltage	

02	Input frequency& Output frequency	
03	Battery voltage& Battery capacity	
04	Load	
05	Environment Temperature	
06	UPS model	

07	Firmware Version	
08	Alarm Code(Warning Message) All alarm codes are present when abnormal behavior(s) occur(s)	

3-3 UPS Setting

The UPS has several customizable settings that can be adjusted in any operating mode. These settings will take effect under specific conditions. The table below provides an overview of how to configure the UPS settings.

Setting Function Controls:

Up ▲ +OFF/Down ▼ --- Enters the settings page

ON/Enter ---- Confirms the selected setting option

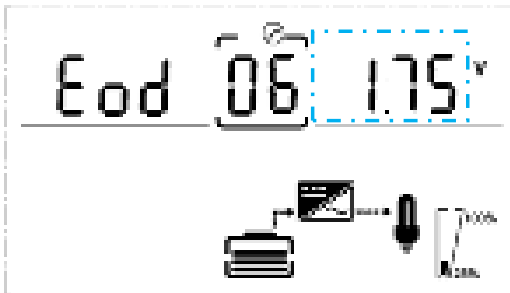
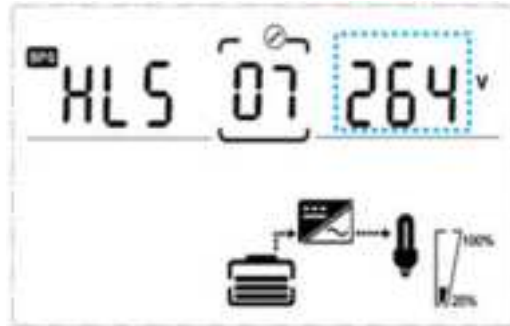
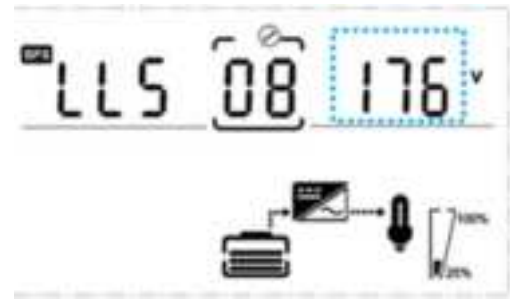
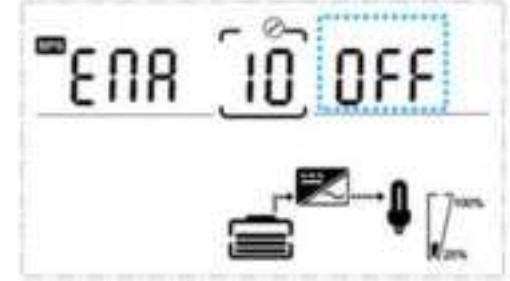
Up ▲ & Down ▼ --- Adjusts the value or navigates through different pages.

Entering the Setting Interface:

After turning on the UPS, press and hold the Up ▲ and Down ▼ buttons simultaneously for 5 seconds to enter the settings interface.

Note: To confirm the selection and exit the setting mode, press the Down ▼ button when the last selection is displayed on the LCD.

Item	Settings	Content display
01	Mode setting Press Enter button to change the setting (ECO or NOR or CF or GEN). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	
02	Output voltage setting Press Enter button to change the setting(200, 208, 220, 230, 240). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	
03	Frequency setting Press Enter button to change the setting (50 or 60Hz). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	
04	Battery capacity setting Press Enter button to change the setting (Battery capacity range is 1-200Ah). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	
05	Battery EOD voltage setting (Segment 1) Press Enter button to change the setting (1.75/1.84/1.92). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	

06	Battery EOD voltage setting (Segment 2) Press Enter button to change the setting (1.60/1.70/1.75/1.80). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	
07	Bypass voltage upper limit setting Press Enter button to change the setting (The bypass voltage upper limit range is 230-264Vac). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	
08	Bypass voltage lower limit setting Press Enter button to change the setting (The bypass voltage lower limit range is 176-220Vac). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to select the next setting.	
09	Mute setting Press Enter button to change the setting (ON or OFF). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to save and exit the setup.	
10	BYPASS enable/disable setting Press Enter button to change the setting (ON or OFF). Press UP button ▲ to select the previous setting. Press DOWN button ▼ to save and exit the setup.	

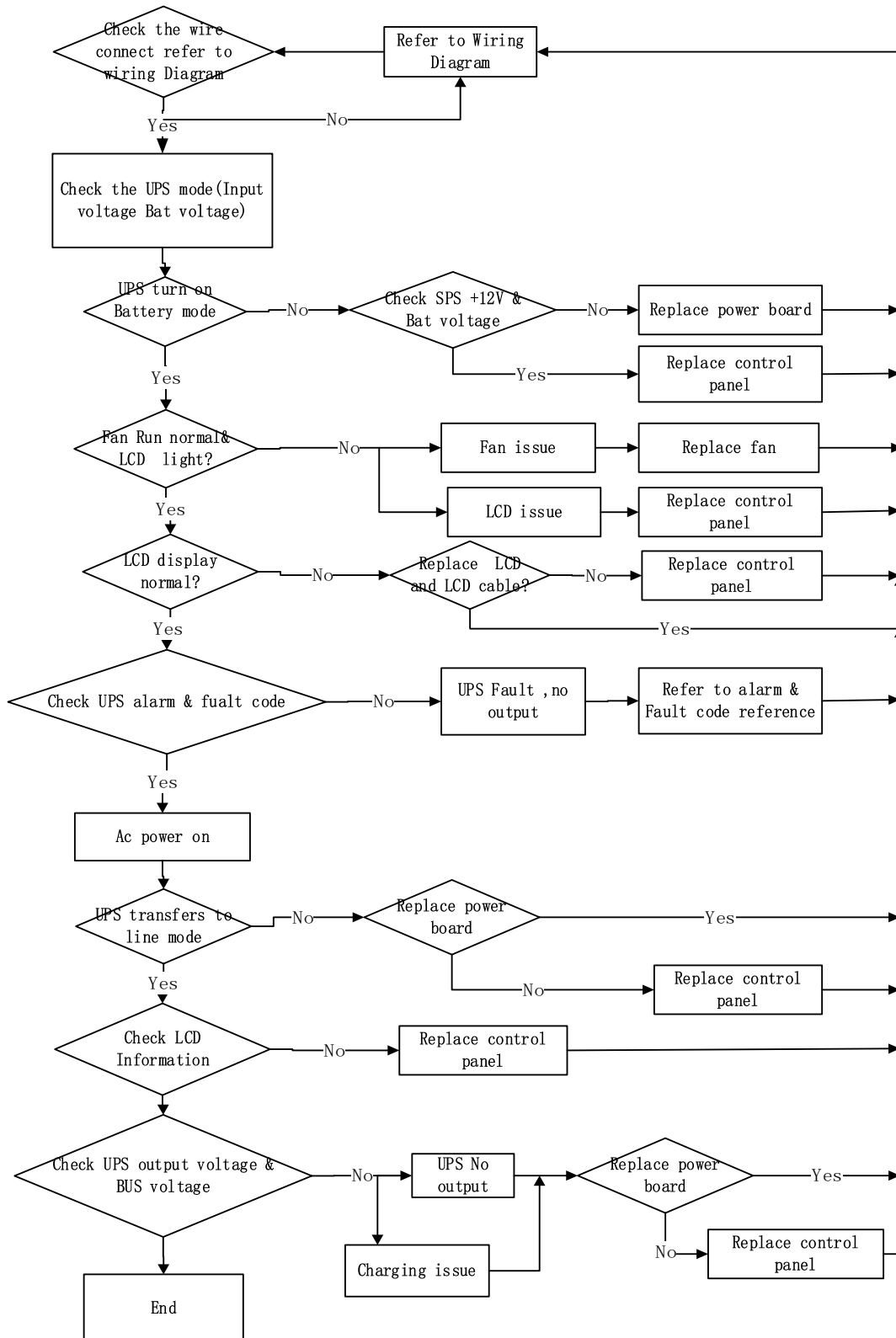
3-4 Alarm or Fault reference code

Event log	UPS Alarm Warning	Buzzer	LED
1	Rectifier Fault	Beep continuously	Fault LED lit
2	Inverter fault (Including Inverter bridge is shorted)	Beep continuously	Fault LED lit
9	Fan fault	Beep continuously	Fault LED lit
12	Self-test fault	Beep continuously	Fault LED lit
13	Battery Charger fault	Beep continuously	Fault LED lit
15	DC Bus over voltage	Beep continuously	Fault LED lit
16	DC Bus below voltage	Beep continuously	Fault LED lit
17	DC bus unbalance	Beep continuously	Fault LED lit
18	Soft start failed	Beep continuously	Fault LED lit
19	Environment temperature Over Temperature	Twice per second	Fault LED blinking
20	Inverter model Over Temperature	Twice per second	Fault LED blinking
26	Battery over voltage	Twice per second	Fault LED blinking
27	Mains Input reverse	Once per second	Fault LED blinking
28	Bypass Input reverse	Once per second	Fault LED blinking
29	Output Short-circuit	Beep continuously	Fault LED lit
30	Input current limit	Once per second	Fault LED blinking
31	Bypass over current	Once per second	BPS LED blinking
32	Overload	Once per second	INV or BPS LED blinking
33	No battery	Once per second	Battery LED blinking
34	Battery under voltage	Once per second	Battery LED blinking
35	Battery low pre-warning	Once per 2 seconds	Battery LED blinking
36	Over load time out	Once per 2 seconds	Fault LED blinking
37	DC component over limit.	Once per 2 seconds	INV LED blinking
39	Mains volt. Abnormal	Once per 2 seconds	BPS LED blinking
40	Mains freq. abnormal	Once per 2 seconds	BPS LED blinking
41	Bypass Not Available	None	BPS LED blinking
42	Bypass out of tracking range	None	BPS LED blinking
45	EPO Enable	Beep continuously	Fault LED lit

4. Troubleshooting

If the UPS system is not operating correctly, refer to the table below and the Troubleshooting Chart to resolve common issues.

Symptom	Possible cause	Remedy
No indication or alarm, even though the mains is normal.	AC input power is not connected properly.	Check if the input power cord is firmly connected to the mains.
	AC input is connected to the UPS output.	Plug the AC input power cord correctly into the AC input.
Alarm code “33” and battery LED blinking	External or internal battery is incorrectly connected.	Check if all batteries are properly connected.
Alarm code “26” and battery LED blinking	Battery voltage is too high or charger is faulty	Contact your dealer.
Alarm code “34” and battery LED blinking	Battery voltage is too low or charger is faulty.	Contact your dealer.
Alarm code “32” and INV or BYPASS LED blinking	UPS is overloaded.	Remove excess loads from the UPS output.
Alarm code “27 & 28” and FAULT LED lit	Mains input and/or bypass input is reversed.	Check the input L/N wiring for reverse connections.
Alarm code “29” and FAULT LED lit	UPS shut down due to a short circuit on the output.	Check output wiring and connected devices for short circuit conditions.
Alarm code “9” and FAULT LED lit	Fan fault.	Contact your dealer.
Alarm codes “01, 02, 15, 16, 17, 18”	UPS internal fault.	Contact your dealer.
Battery backup time is shorter than expected	Batteries are not fully charged.	Charge the batteries for at least 5 hours and check the capacity. If the issue persists, contact your dealer.
	Battery defect.	Contact your dealer.



Trouble Shooting Chart

5. Storage and Maintenance

Operation

- The UPS system contains no user-serviceable parts.
- The batteries have a service life of approximately 3 to 5 years at an ambient temperature of 25°C. After this period, the batteries must be replaced. Contact your dealer for battery replacement recommendations.



Be sure to deliver the spent battery to a recycling facility or ship it to your dealer in the replacement battery packing material.

Storage

- Before storing the UPS, charge it for 5 hours.
- Store the UPS covered, upright, and in a cool, dry location.
- Recharge the battery according to the storage temperature and frequency listed below.

Storage Temperature	Recharge Frequency	Charging Duration
-25°C to 40°C	Every 3 months	1-2 hours
40°C to 45°C	Every 2 months	1-2 hours

Proper maintenance and storage will help ensure the long-term reliability of the UPS system.

6. Optional

SNMP card: Internal SNMP (Optional)

- **Installation Steps:**
 1. Loosen the **two torque screws** located on each side of the card slot.
 2. Carefully insert the **SNMP card** into the slot.
 3. Secure the card by tightening the screws.

The **KPM220** is a built-in network SNMP card that provides independent management capabilities for the UPS. It supports **SNMPv1/v2/v3** protocols and includes features such as:

- **Email alarm notifications** for UPS status changes or faults.
- **Historical event logs** to track UPS activity.
- **Historical data storage** for performance monitoring.

The SNMP card allows for advanced UPS monitoring and management over a network.



Download installation files from <http://download.ksdatacloud.com>,

For specific operation and function description refer to the KPM220 User Manual V2.2

Relay Card (Optional)

The **Mini Dry Contact Card** provides an interface for peripheral monitoring of the UPS system. It communicates the UPS's real-time status through contact signals and allows timely feedback to monitoring systems when abnormal situations arise, such as UPS failure, mains interruption, or bypass activation.

This card is installed in the **intelligent slot** of the UPS and is connected to peripheral monitoring devices via a **terminal board**. It includes **6 output ports** and **1 input port** for effective monitoring.



Pins Definition of Connecting Terminal on the Board

Terminal No.	Terminal function	Terminal No.	Terminal function
1	Common source	9	Bypass enable NO
2	UPS on NC	10	Bypass enable NC
3	AC fail NO	11	UPS fail NO
4	AC fail NC	12	UPS fail NC
5	Batt low NO	CN4-1	Remote shutdown
6	Batt low NC	CN4-2	GND
7	UPS alarm NO		
8	UPS alarm NC		

Relay Card Electrical Parameters

	max	Type
Relay card contact	(Max Switched Voltage) AC:120V DC:24V	AC:120V
		DC:5~12V
	(Max Switched Current) AC:1A DC:1A	AC:1A
		DC:1A

Emergency Power-off (EPO) (Optional)

The Emergency Power-off (EPO) function is designed for situations where it is necessary to shut down the UPS and its load from a remote location. This feature can be used to shut down both the load and the UPS during emergencies, such as overheating. When the EPO is activated, the UPS will:

- Shut down the output: All power to the connected devices is immediately cut off.
- Shut down power converters: Stops all internal power conversion processes within the UPS.
- Remain on: The UPS will continue to stay powered, but in an alarm state to signal the fault condition.



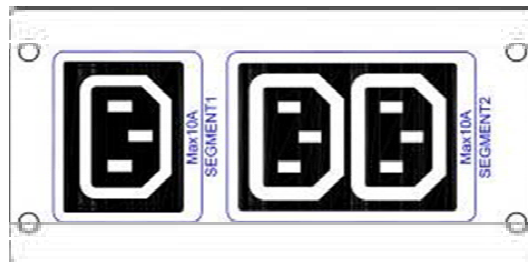
EPO Connections

- **EPO Activation:** Depending on the configuration, the UPS will either run or shut down when the EPO connector pins are either shorted or opened.
- **To Restart:** Reconnect (or re-open) the EPO connector pins and manually turn the UPS back on.

- **Test EPO Function:** It is recommended to test the EPO functionality before applying critical loads to the UPS to avoid accidental shutdowns.
- **Connector Installation:** Even if the EPO function is not needed, leave the EPO connector in place on the EPO port to prevent accidental activation.

Load Segments (Optional)

Load segments refer to groups of UPS output receptacles that can be controlled separately through power management software or the UPS display. These segments allow for the controlled shutdown and startup of equipment, which is particularly useful during power outages to conserve battery power.:



Segment 1:

- **Customizable Power Shedding:** The battery voltage at which Segment 1 shuts down can be set using the UPS's LCD interface. This enables users to manage when to cut power to certain non-essential devices based on the battery's remaining charge.
- **Reference:** Check the Battery EOD (End of Discharge) voltage setting for Segment 1 through the UPS's LCD display to adjust this configuration.

Segment 2:

- **Pre-set Power Shedding:** Segment 2 automatically shuts down when the battery reaches the end of its discharge cycle (EOD). This setting is not customizable, but it ensures non-critical devices are powered off as the battery approaches full depletion, preserving energy for essential equipment.

This feature allows for efficient battery management, ensuring that critical systems remain powered while less important devices are safely powered down during outages.

7. Specification

MODEL		1KVA(S)		1KVA(H)		1.5KVA(S)		1.5KVA(H)		2KVA(S)		2KVA(H)		3KVA(S)		3KVA(H)	
PHASE		Single phase with ground															
Capacity (VA/Watts)		1000VA / 800W/900W/1000W				1500VA / 1200W/1350W/1500W				2000VA / 1600W/1800W/2000W				3000VA / 2400W/2700W/3000W			
INPUT																	
Nominal voltage		200/208/220/230/240VAC															
Operating voltage range (Ambient Temp. <40°C)	Low line transfer	176Vac±5% @100%-50% load; 110Vac±5% @50%-0% load;															
	Low line comeback	186Vac±5% @100%-50% load; 120Vac±5% @50%-0% load;															
	High line transfer	264Vac±5% @100%-50% load; 300Vac±5% @50%-0% load;															
	High line comeback	254Vac±5% @100%-50% load; 290Vac±5% @50%-0% load;															
Operating frequency range**		40-70Hz															
Power factor		0.99@100% load(Nominal Input Voltage)															
Bypass voltage range		Bypass high voltage point 230-264: setting the high voltage point in LCD from 230Vac to 264Vac. (Default: 264Vac) Bypass low voltage point 176-220: setting the low voltage point in LCD from 176Vac to 220Vac. (Default: 176Vac)															
Generator input		Support															
OUTPUT																	
Output voltage*		200/208/220/230/240Vac															
Power factor		0.8/0.9/1.0															
Voltage regulation		±1%															
Frequency	Line Mode (synchronized range)	46-54Hz or 56-64Hz															
	Bat. Mode	(50/60±0.1)Hz															
Crest factor		3:1															
Harmonic distortion (THDv)		≤3% THD with linear load ≤5% THD with non-linear load															
Waveform		Pure Sinewave															
Transfer time	AC mode <-> Batt. mode	Zero															
	Inverter <-> bypass	4ms(Typical)															
Efficiency(up to)		89% (AC mode)				89.5% (AC mode)				90% (AC mode)				91% (AC mode)			
BATTERY																	
Battery Type		12V9AH		depends on the capacity of external batteries		12V9AH		depends on the capacity of external batteries		12V9AH		depends on the capacity of external batteries		12V9AH		depends on the capacity of external batteries	
Numbers		2	3	2	3	3	3	4	6	4	6	6	8	6	8		

Backup time		Long run unit depends on the capacity of external batteries											
Typical recharge time (standard model)		4 hours recover to 90% capacity (typical)											
Charging voltage		27.4 ±1%		41.0 ±1%		54.7 ±1%	82.1 ±1%	54.7 ±1%	82.1 ±1%	82.1 ±1%	109.4±1 %	82.1 ±1%	109.4±1 %
Charge current(A)		1/2	6/12	1/2	6/12	1/2	6/12	1/2	1	6/12			
SYSTEM FEATURES													
Overload	Line Mode	105%~125%: UPS transfers to bypass after 1minute when the utility is normal; 125%~130%: UPS transfers to bypass after 30 seconds when the utility is normal; >130%: UPS transfers to bypass immediately when the utility is normal.											
	Batt. Mode	105%~125%: UPS shuts down after 1 minute; 125%~130%: UPS shuts down after 10 seconds; >130%: UPS shuts down immediately.											
Short Circuit		Hold Whole System											
Overheat		Line Mode: Switch to Bypass; Backup Mode: Shut down UPS immediately											
Low battery voltage		Alarm and Switch off											
EPO (optional)		Shut down UPS immediately											
Audible & Visual alarms		Line Failure, Battery Low, Overload, System Fault											
Communication interface		USB (or RS232), SNMP card (optional), Relay card (optional)											
ENVIRONMENTAL													
Operating temperature		0℃~40℃											
Storage temperature		-25℃~55℃											
Humidity range		20-90 % RH @ 0- 40℃ (non-condensing)											
Altitude		< 1500m											
Noise level		Less than 55 dBA at 1 Meter											
PHYSICAL													
Dimension W×D×H (mm)		144 * 293 * 209	144 * 399 * 209	144 * 293 * 209	144*399*209		191* 460* 337						
Net Weight (kg)		9.1	12.2	4.1	13.1	5.6	19.5	24.5	10.3	24.5	32.8	10.9	
STANDARDS													
Safety		IEC/EN62040-1,IEC/EN62477-1											
EMC		IEC/EN62040-2, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8											

* Derate to 80% of capacity when the output voltage is adjusted to 200/208VAC

** Derate to 75% of capacity when the Input voltage frequency out of range (50/60±4Hz)

*** Product specifications are subject to change without further notice.