

Important Safety Instructions

- Do not connect equipment that may overload the UPS or demand half-wave rectification, such as a laser printer.
- Connect the UPS only to an earthed / grounded socket that meets electrical safety guidelines.
- Locate the UPS near a wall socket. Do not use an extension cord between the UPS and the socket.
- Use CE-marked cables only for connections between mains, the UPS and equipment.
- The Liebert PSP has been designed for small office/home office use only; it is NOT recommended for use in lifesupport applications.
- In the event of an emergency, press the On/Off button and disconnect the power cord from the AC mains to properly disable the UPS.
- Do not attach power strips or surge suppressors to the UPS.
- Do not attempt to service any parts inside the UPS except when replacing the batteries. Failure to adhere to this could cause personal injury or equipment malfunction and void the warranty.
- This unit uses components that are dangerous for the environment, such as electronic cards and other electronic components. Any component that is removed must be taken to specialized collection and

Liebert® PSP UPS



disposal centers. If this unit must be dismantled, this must be done by specialized personnel who are properly trained and qualified. The unit must be taken to a center specialized in collection and disposal of dangerous substances.

For technical support: visit www.vertiv.com

Setup

1. Inspecting the package

Inspect the package and the UPS upon receipt.

Notify the carrier and dealer of visible damage.

The package includes:

- Liebert PSP
- USB cable
- Quick-start guide
- 2 IEC output cables

2. Decide Where to Place the UPS



The UPS must be placed indoors, protected from water, direct sunlight and excessive heat.

Provide at least 100mm (4") of clearance on all sides of the unit for proper ventilation.

3. Charging the UPS Battery before use

The UPS battery is not charged before shipping. It must be charged before use.

- Use the input power cord from computer equipment as the input power cord of UPS. Connect a user-supplied power cord from the UPS to a wall socket and charge for at least eight hours. Unit can be charged in the on or off state.

NOTE: If battery is placed in storage, charge the battery every six months if kept at -15°C to $+29^{\circ}\text{C}$ (5°F to 85°F)—or every three months

4. Starting the UPS

After the battery is fully charged:

- Turn on the UPS by pressing the On/Off button (see Figure 1). LED 1 should be illuminated (green), indicating the UPS is operating in Normal Mode.

5. Connecting the loads

The UPS has three battery backup sockets that provide power when the UPS operates on battery.

There is also one surge-only socket (see Figure 2).

- Plug the loads into the battery backup sockets on the rear of the UPS.

CAUTION: Do not connect a laser printer to the UPS.

6. Connecting the network surge protection

The UPS has two network cable jacks for network line (see Figure 2 below).

- Connect a single-line network cable into the network surge protection IN jack on the rear of the UPS.
- Connect a network cable from the OUT jack on the rear of the UPS to a port on a PC or network device such as a router.

UPS Controls and Connections

Figure 1 - Front Panel LEDs

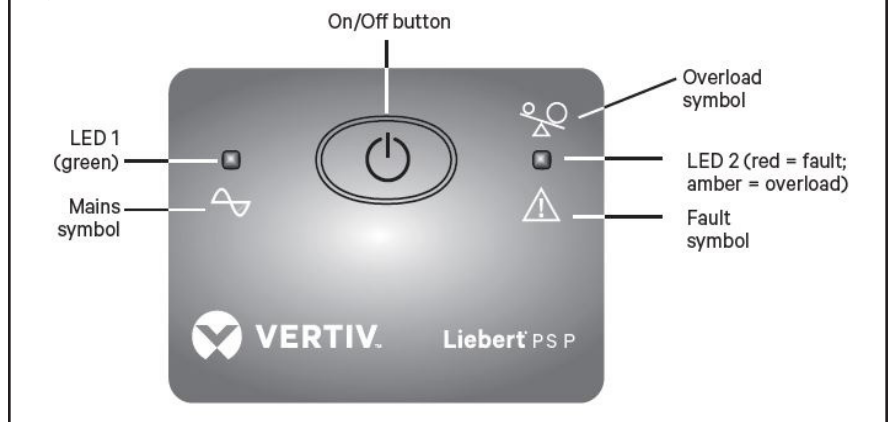
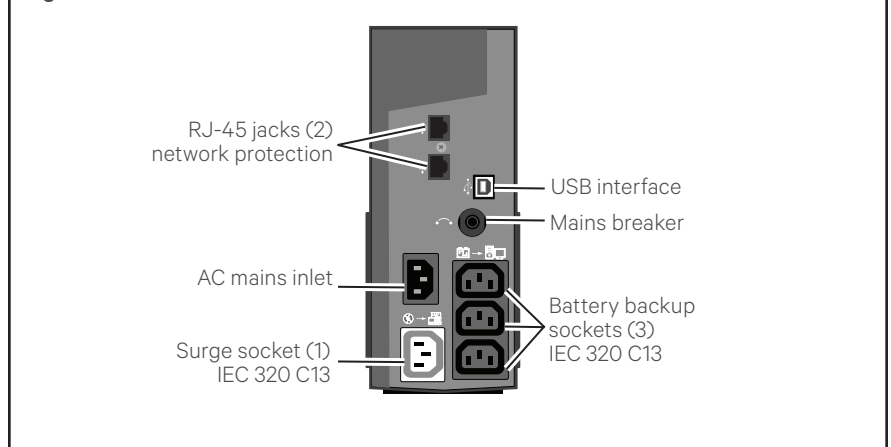


Figure 2 - Rear Panel



UPS Status, Alarm Conditions and Alerts

CONDITION	LED1	COLOR	SOLID/FLASHING	AUDIBLE ALARM
Normal Mode	LED1	Green	Solid (steady glow)	(None)
Battery Mode	LED1	Green	Flashes every 3 seconds	Every 3 seconds
Battery Low	LED1	Green	Flashes every 1 second until end of discharge (EOD)	Every 1 seconds
Overload	LED1	Amber	Solid (steady glow) until load drops or breaker trips	Continuous
Battery Replacement	LED1	Red	Flashes every 1 second for 5 seconds only	Every 1 second for 5 seconds only
Fault	LED2	Red	Solid (steady glow) until UPS shuts down after 5 seconds	Continuous until UPS shuts down

Replacing the Battery

Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and required precautions. When replacing batteries, replace with the same type and size battery.

CAUTION: Do not dispose of batteries in a fire. The batteries may explode.

CAUTION: Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It is toxic. This product is designed for IT power systems with 230V.

1. Opening the PSP outer case

Turn off all connected loads, then turn off the UPS and unplug the input power cord. (Batteries are NOT hot-swappable.)

Carefully lay the UPS on its left side, as shown in the illustration to the right. Wait for 5 minutes to ensure circuits are de-energized.

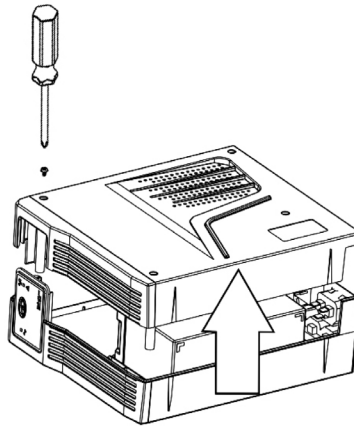
Use a #1 Phillips head screwdriver to remove the four screws from the right-side cover, then pull up the right-side cover and remove it.

2. Removing the old battery

CAUTION: Risk of electric shock.

Remove the black wire from the negative (-) terminal and the red wire from the positive (+) terminal.

Gently remove the battery from the UPS.



3. Connecting the replacement battery

Verify that the replacement battery matches the dimensions and battery specifications.

Connect the PSP battery leads to the new battery. Be sure to reconnect the red wire to the positive (+) terminal and the black wire to the negative (-) terminal.

NOTE: Small sparks may occur at the battery connectors during reconnection. Take care not to short-circuit the positive and negative battery terminals while replacing the battery.

Place the battery in the UPS.

4. Reassembling the PSP outer case

Ensure correct alignment of front panel, then reattach the right-side cover. Evenly tighten the four screws from Step 1. (DO NOT overtighten the screws.) Dispose of the old battery properly at an appropriate recycling facility.

Troubleshooting

If the UPS detects a fault, consult the table below for possible causes and solutions. For further assistance, please contact your local Vertiv representative.

FAULT	POSSIBLE CAUSES	SOLUTIONS
Mains is normal, but LED 1 is not illuminated.	The UPS may not be turned on. The power cord may not be connected properly. The upstream mains circuit breaker may be tripped.	<ul style="list-style-type: none"> Press the On/Off button to turn on the UPS. Connect the power cord securely into a wall socket. Reset the circuit breaker.
LED 1 flashes (green) every 3 seconds, but there is no output power.	Battery voltage may be too low.	<ul style="list-style-type: none"> Recharge the UPS for 8 hours.
Alarm buzzer beeps continuously although mains is normal.	The UPS may be overloaded (check LED 2).	<ul style="list-style-type: none"> Disconnect some equipment from the UPS.
UPS does not provide expected backup time.	The UPS battery reached end of life.	<ul style="list-style-type: none"> Replace the internal battery.
The UPS is on and connected to mains, but fails to operate properly.	Mains power may be outside the unit's operating range.	<ul style="list-style-type: none"> If mains is normal, try reconnecting mains and restarting the UPS.

Specifications

MODEL NUMBER	PSP500MT3-230U	PSP650MT3-230U
Capacity (VA/W)	500/300	650/390
Net Weight, kg (lb.)	3.9 (8.6)	
Shipping Weight, kg (lb.)	4.8 (10.6)	
Dimensions - W x D x H, mm (in.)	87 x 215 x 251 (3.4 x 8.5 x 9.9)	
Mains Voltage	160-287VAC	
Frequency	50/60Hz ±5Hz	
Output Voltage (Mains Normal)	Typical 160-287VAC	
Output Voltage (Battery Operation)	230VAC ±5%	
On-Battery Wave Form	Stepped sine-wave	
VRLA Battery Type - VDC x Ah x Quantity	12V x 7.2Ah x 1	12V x 7.2Ah x 1
Typical Recharge Time	6-8 hours to 90%	
Battery Run Time	See Load Autonomy table below	
Audible and Visual	Audible alarm / LED	
Backup Sockets	IEC 320 C13 (3)	
Surge Sockets	IEC 320 C13 (1)	
Operating Temperature, °C (°F)	0 to 40 (32 to 104)	
Storage Temperature, °C (°F)	-15 to 40 (5 to 104)	
Storage Temperature, °C (°F)	-15 to 40 (5 to 104)	
Operating / Storage Relative Humidity	0%-90%, non-condensing	
EMI Classification	Class B	

Agency

Safety	IEC/EN/AS 62040-1-1
EMC	EN 62040-2:2005 Class B IEC 61000-4-2 Electrostatic discharge IEC 61000-4-3 Radiated E-RFI fields IEC 61000-4-4 Fast E transients IEC 61000-4-5 Surges/Lightning IEC 61000-4-6 Conducted RFI
Transportation	ISTA Procedure 1A Certification

NOTE: The Liebert PSP is compliant with the Restriction of Hazardous Substances Directive (ROHS), prohibiting use of hazardous materials manufacturing electronics, including lead-free solder.



To contact Vertiv Technical Support: visit www.Vertiv.com

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Load Autonomy

Liebert PSP 230V 500VA-650VA

LOAD (WATTS)	500VA	650VA
50	55	56
100	18	19
150	11	12
200	8	8
250	5	5
300	3	4
350	N/A	3

NOTE: All run times are in minutes, assume fully charged batteries and are at 25°C (77°F) with resistive loads.

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