

WHAT'S IN THE BOX

- Quick-Start guide
- PowerSure family user manual on CD (also at www.liebert.com)
- Warranty card
- USB cable (PAXXX-230U models only), 1.8m (6ft.)
- RJ-11 cord, 2.1m (7 ft.)
- Two (2) 10A output power cords, 2.0m (6.6 ft.)

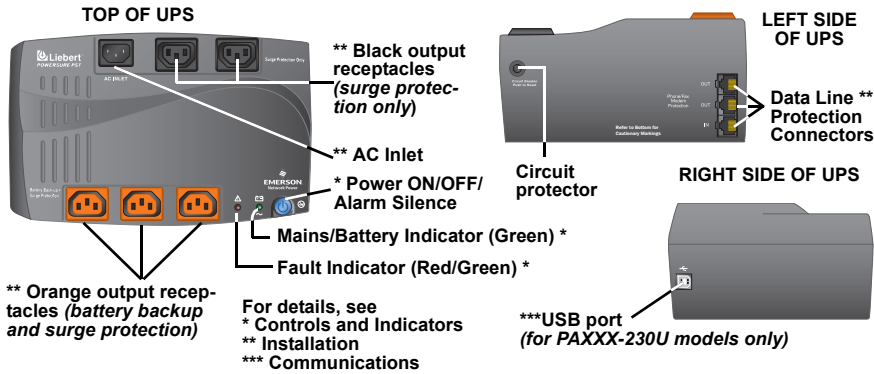
For more details, refer to the PowerSure user manual on CD.

Pour de plus amples informations, voir le manuel d'utilisateur de la gamme des produits PowerSure sur CD.

Para una información más detallada, consulte el manual del usuario de la familia PowerSure en el CD.

Per informazioni ulteriori e più particolareggiate, consultare il manuale dell'utente delle attrezzature PowerSure contenuto sul CD.

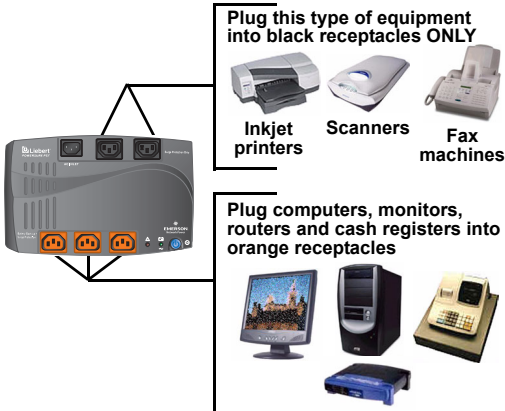
Ausführlichere Informationen finden Sie im Benutzerhandbuch der PowerSure-Familie auf CD.




INSTALLATION

Read all safety, installation and operating instructions in the PowerSure family user manual on the included CD or at www.liebert.com before operating the UPS. Adhere to all warnings on the unit and in the manual.

1. Install the UPS indoors in a controlled environment, where it cannot be accidentally turned off. Place it in an area of unrestricted airflow around the unit, away from water, flammable liquids, gases, corrosives and conductive contaminants. Maintain an ambient temperature range of 0°C to 40°C (32°F to 104°F).
2. Connect equipment to the receptacles on the back of the PST with one of the two supplied output cables. Computers and monitors should be connected to the orange receptacles for battery backup and surge protection; other office machines that do not exceed the capacity of the UPS may be plugged into either of the two black receptacles, which provide surge protection only.
3. Connect an input cable removed from the load equipment to the PowerSure PST and to the mains supply socket.
4. Connect Phone/Fax/DSL/Internet/Modem devices to data line connectors.
5. Press and release the ON/OFF/Alarm Silence button to turn on the UPS. The UPS will beep and the Mains Indicator will illuminate (green).
6. Turn on connected equipment.



CONTROLS AND INDICATORS



This button controls output power to the connected load and has three functions:

- Turns the PowerSure PST ON
- Turns the PowerSure PST OFF
- Silences PowerSure PST alarms

TURN THE UPS ON: Press and release the main ON/OFF button to start the UPS. An audible alarm will sound briefly.

TURN THE UPS OFF: When the PST is ON, hold the main ON/OFF button down for more than 2 seconds to shut it down. An audible alarm will sound briefly.

SILENCE AN ALARM: When a UPS alarm is active, press and release the main ON/OFF button to silence the audible alarm (Exceptions: low battery, overload and overtemperature). DO NOT hold the button down for more than 2 seconds or the PST will shut down.

CHECK THE PST'S CONDITION: Three status indicators on the front of the UPS illuminate to specify the status of the UPS (see **Troubleshooting** section for details).

COMMUNICATIONS

The PowerSure PST has a USB interface port for communication that will work with the built-in Microsoft Power Manager software on the user's PC, if the PC is so equipped. It will provide UPS status and manages the automatic, orderly shutdown of the computer. The UPS (USB) communications meets HID standard, version 1.11. All USB models are compatible with Microsoft Windows 2000, Windows XP and Mac OS 10.2 or later. All USB models ship with a 6 ft. (1.8m) USB cable.

SPECIFICATIONS

Model Number	PA500-230U PA500-230	PA650-230U PA650-230
Model Rating VA / W	500 / 300	650 / 360
DIMENSIONS: mm (in.)		
Unit W x D x H	168 x 250 x 95 (6.6 x 9.8 x 3.7)	168 x 250 x 95 (6.6 x 9.8 x 3.7)
Shipping W x D x H	238 x 350 x 142 (9.4 x 13.8 x 5.6)	238 x 350 x 142 (9.4 x 13.8 x 5.6)
WEIGHT: kg (lbs)		
Unit	4.7 (10.4)	5.7 (12.5)
Shipping	5.7 (12.5)	6.7 (14.8)
INPUT AC PARAMETERS		
Surge Protection	220J	
Rated Input Voltage	230VAC	
Voltage Range Without Battery Operation	180VAC - 264VAC (±6VAC)	
Frequency	47 - 63 Hz (±0.4 Hz)	
OUTPUT AC PARAMETERS		
Output Receptacles	(3) IEC-320-C13 (orange) battery backup+surge protection (2) IEC-320-C13 (black) surge protection	
Output Cord	2m (6.6 ft) detachable, w/IEC-320 (Wire Type: 1mm ² , H05W-F 3G)	
Voltage (Battery Mode)	230VAC (±8%)	
Output Current	2.9 A	4.2 A
Waveform (Battery Mode)	Stepped Sinewave	
Frequency (Battery Mode)	50/60 Hz (±1 Hz)	
Overload Warning	>100%	
Overload Shutdown	>110%	
BATTERY PARAMETERS		
Type	Valve-regulated, nonspillable, lead acid	
Quantity x Voltage x Rating	1 x 12V x 5 Ah	1 x 12V x 7 Ah
Transfer Time	4 – 6 ms typical	
Back-up Time:	At 25°C (77°F), resistive loading, w/ fully charged batteries:	
Full load	2 minutes	1 minute
Half load	8 minutes	8 minutes
Recharge Time	12 hours to 90% rated capacity, after full discharge into resistive load	

ENVIRONMENTAL	
Operating Temperature	0°C to +40°C (+32°F to +104°F)
Storage Temperature	-15°C to +50°C (+5°F to +122°F)
Relative Humidity	0% to 95%, non-condensing
Operating Elevation	Up to 3000 m (10,000 ft.) at 35°C (95°F) w/o derating
Audible Noise	< 40 dBA, at 1 meter
AGENCY	
Safety	EN50091-1-1, TUV/GS listed, CE Compliance Mark
Surge	EN61000-4-5, Level 3, Criteria A
ESD	EN61000-4-2, Level 3, Criteria A
Susceptibility	EN61000-4-3, Level 2, Criteria A
Electrical Fast Transient/ Burst	EN61000-4-4, Level 3, Criteria A
Emissions	EN50091-2, Class B
Harmonics	EN61000-3-2
Conducted Immunity	EN61000-4-6
Flicker	EN61000-3-3
Transportation	ISTA Procedure 1A

TROUBLESHOOTING

The information below indicates various symptoms a user may encounter in the event the PowerSure PST experiences a problem. Use this information to determine whether external factors caused the problem. See **Troubleshooting Chart** for suggested remedy.

- The Fault indicator illuminates, indicating the UPS detected a problem.
- An alarm sounds, alerting that the UPS requires attention. The alarm can be silenced except for low battery, overload and overtemperature warning conditions.
- Mains/Battery indicator may be illuminated as a diagnostic aid to the operator, as shown below:

GUIDE TO STATUS INDICATORS

Fault (Red)	Mains/Battery (Green)	Diagnosis/ Audible Alarm
Normal Mode		
—	● ON	UPS is operating in Normal Mode; no beep.
—	★ Flashing	Battery Test has been initiated; no beep.
★ Flashing	● ON	The unit is overloaded; beep every half-second
● ON	● ON	The UPS has failed; continuous
★ Flashing	—	Unit has shutdown due to overload; continuous beep
● ON	—	The UPS shutdown due to failure; continuous beep
Battery Mode		
—	★ Flashing	The UPS is operating in Battery mode; beep every 5 seconds.
—	★ Flashing	UPS battery is low; beep every half-second
★ Flashing	★ Flashing	The unit is overloaded; beep every half-second
● ON	★ Flashing	The UPS has failed; continuous beep

MAINTENANCE

The PowerSure PST UPS requires very little maintenance. Follow these practices to prevent problems.

CLEANING THE UPS

The following will help ensure trouble-free operation for years:

- Vacuum dust from the ventilation intake occasionally.
- Wipe the cover periodically with a dry cloth.

MAINTAINING BATTERIES

The batteries are valve-regulated, nonspillable, lead acid and must be kept charged to retain their design life. The UPS continuously charges the batteries when connected to the mains supply, even while the UPS is switched off.

When storing the UPS, it is recommended to plug in the UPS for at least 24 hours every four to six months to ensure full recharge of the batteries.

TROUBLESHOOTING CHART

If the UPS fails to operate properly, turn off the unit and repeat the steps in the **Installation** section of this manual. If the problem persists, refer to the chart below:

Problem	Cause	Solution
UPS will not start	Overload/ Short circuit	Check the circuit protector on the side of the UPS. If it is tripped, reset it and restart the UPS. For further help, call your local dealer, Liebert representative or the Liebert Worldwide Support Group.
UPS starts on battery, but will not switch to AC	UPS not plugged in	Plug in power cord securely.
	Circuit protector tripped	Reset the circuit protector and restart the UPS.
	Power not available at mains receptacle	Have the mains receptacle checked by a qualified electrician.
	Input voltage below threshold	Wait until the voltage rises to an appropriate level or have the mains receptacle checked by a qualified electrician.
	AC overvoltage	Wait until voltage lowers to an appropriate level or have the mains receptacle checked by a qualified electrician.
UPS shuts down, Fault Indicator lit	Overload/ Short circuit	Check the circuit protector on the rear of the UPS. If it is tripped, reset it and restart the UPS. If the problem persists, disconnect some of the equipment from your UPS—the total wattage of your equipment must not exceed the capacity of the UPS. For further help, call your local dealer, Liebert representative or the Liebert Worldwide Support Group.
	Internal UPS fault	
UPS not providing expected backup time	Overload	Reduce load.
	Battery not charged due to a recent outage	Recharge battery.

WARRANTY REGISTRATION

- To register for warranty protection:
- Visit the **Quick Links** section of our Web site at: <http://www.liebert.com>
 - Click on **Product Warranty Registration** and fill in the form.

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT US AT:

US: 800-222-5877
 Outside the US: 614-841-6755
upstech@liebert.com