



## FSP ST Series UPS & AVR Stabilizer User Manual

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## INSTALLATION & OPERATION

### 1. Inspection

The following items are inside the box:

- UPS unit
- User manual
- Power cord(only for 1500 model)
- Coaxial cable/RJ45 cable (option)

Remove the UPS from its package and inspect it for damage that may have occurred during shipping. If any

damage is discovered, re-pack the unit and return it to the place of purchase.

## 2. Connect to Utility Power

Connect AC power cord to utility power. Then, the UPS will start to charge inside battery. For best result, charge the battery for 6 hours prior to initial use.

## 3. Connect Modem/Phone Line (only for the model with RJ-45 port)

This UPS protects a single line (1 in/1 out) phone, modem, or fax machine from surges when connected through the UPS. Plug in conning Internet line into the “IN” socket. Use one more Internet line cable in the “OUT” socket and plug one other end to the modem input socket.

## 4. Plug in Equipment

**Battery Backup Outlets:**

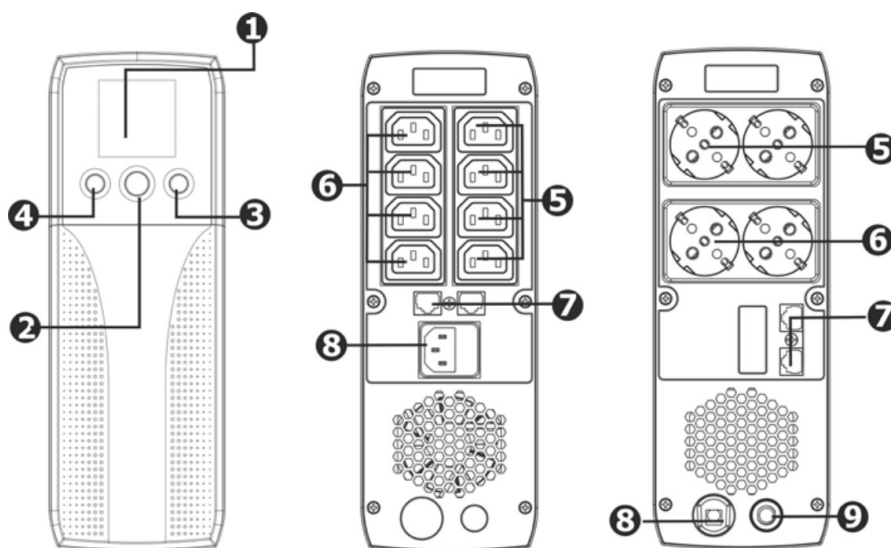
Connect computer and monitor to the “Battery Backup” outlets. These outlets provide battery backup, EMI filtering, line conditioning, and surge protection. Battery power is automatically provided in case of power failure.

**Surge-Protected Outlets:**

Connect a printer, fax machine, or scanner to the “Surge-protected” outlets. These outlets do not provide power during power failure.

**CAUTION:** NEVER connect a laser printer or scanner to the battery backup sockets of UPS. The equipment may draw significantly power to overload the UPS.

## PRODUCT OVERVIEW





1. LCD display (Please check LCD section for the details)
2. Power switch
3. Mute button
4. Select button
5. Battery backup outlets
6. Surge-protected outlets
7. Modem/ phone/ network surge protection
8. AC input
9. Circuit breaker





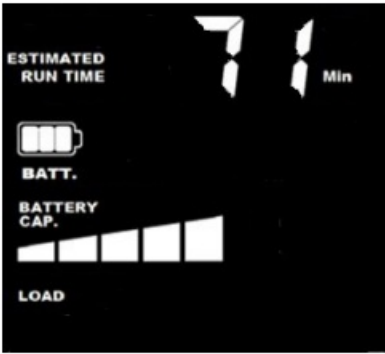




## Fault Code Table:

Fault condition	Code #	Solutions
Output short circuited	1	Disconnect shod-circuited loads and restart the UPS again.
Overload	2	Turn off the unit and remove unnecessary loads. Then, restart the UPS again.
Inverter/Output failure.	4	Call for service immediately.
Overcharge	5	1.Turn off the unit and wait for cooling. 2.Or remove excessive loads and wait for cooling.
Battery voltage is too low.	6	Call for service immediately.

## LCD DISPLAY

### Operation Display:

UPS Mode	LCD	Description
UPS Power on		When UPS is powered on, all icons will light up 3 seconds.
Standby Mode		

<p>AC Mode</p>	 <p>When AVR is functioning,  icon will flash every second.</p>	<p>Press select button to switch displayed information.</p> <ol style="list-style-type: none"> <li>1. Output voltage</li> <li>2. Output frequency</li> <li>3. Input voltage</li> <li>4. Input frequency</li> <li>5. Output power in W</li> <li>6. Output power in VA</li> <li>7. Estimated backup time</li> </ol>
<p>Overload in AC mode</p>	 <p> icon will flash.</p>	<p>When overload occurs, alarm will beep every 0.5 second.</p>
<p>Battery Mode</p>	 <p>In battery mode, press mute button to mute alarm and  will be on.</p> <p>When battery level is low,  icon will flash.</p>	<p>Alarm will beep every 10 seconds and LCD information will be displayed in the following order when pressing select button.</p> <ol style="list-style-type: none"> <li>1. Estimated backup time</li> <li>2. Output voltage</li> <li>3. Output frequency</li> <li>4. Input voltage</li> <li>5. Input frequency</li> <li>6. Output power in W</li> <li>7. Output power in VA</li> </ol> <p>Alarm will beep every second. This alarm can not be mute.</p>
<p>Overload in battery mode</p>	 <p> icon will flash.</p>	<p>When overload occurs, alarm will beep every 0.5 second.</p>

## SAFETY CAUTION

SAVE THESE INSTRUCTION-This manual contains important instructions that should be followed

- **Caution:** risk of electric shock. The battery circuit is not isolated from the input voltage. Hazardous voltages may occur between the battery terminals and the ground. Before touching, please verify that no voltage is present!.
- Remove the connection from ground if any part of the battery is determined to be grounded.
- When changing batteries, install the same number and same type of batteries..
- Do not attempt to dispose of batteries by burning them. This could cause battery explosion.
- Do not open or destroy batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic.
- Please replace the fuse or circuit breaker only with the same type and amperage in order to avoid fire hazards.
- Do not dismantle the UPS system, except the specialized technical personnel.
- This unit intended for installation in a controlled environment (temperature controlled, indoor area free of conductive contaminants).

Avoid installing the UPS in locations where there is standing or running water, or excessive humidity.

- Do not plug the UPS input into its own output.
- Do not attach a power strip or surge suppressor to the UPS.
- Do not attach non-computer-related items, such as medical equipment, life-support equipment, microwave ovens, or vacuum cleaners to UPS.
- Do not dispose of batteries in a fire as they may explode.
- Batteries may cause electric shock and have a high short-circuit current. Please take the precautionary measures specified below and any other measures necessary when working with batteries:
  - 1) Remove wristwatches, rings and other metal objects
  - 2) Use only tools with insulated grips and handles.
  - 3) Wear rubber gloves and boots.
  - 4) Do not lay tools or metal parts on top of batteries.
  - 5) Disconnect charging source and load prior to installing or maintaining the battery.
  - 6) Remove battery grounds during installation and maintenance to reduce likelihood of shock
- Internal battery voltage is 12VDC.Sealed, lead-acid, 6-cell battery.
- Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions.

Keep unauthorized personnel away from batteries.
- Do not open or mutilate the battery or batteries. Release electrolyte is harmful to the skin and eyes. It may be toxic.
- Attention, hazardous through electric shock. Also with dis- connection of this unit from the mains, hazardous voltage still may be accessible through supply from battery. The battery supply should be therefore disconnected in the plus and minus pole at the connectors of the battery when maintenance or service work inside the UPS is necessary.
- To reduce the risk of overheating the UPS, do not cover the UPS' cooling vents and avoid exposing the unit to direct sunlight or installing the unit near heat emitting appliances such as space heater or furnaces.
- Unplug the UPS prior to cleaning and do not use liquid or spray detergent.

## SPECIFICATIONS

MODEL	ST850	ST1200	ST1500
CAPACITY	850VA / 510W	1200VA / 720W	1500VA / 900W
Input Voltage	220/230/240 VAC		
Input Voltage Range	162~268VAC/170~280VAC/177~290VAC		
Output Voltage Regulation	± 10 % (Bat. mode)		
Transfer Time	Typical 6 ms, max. 10 ms		
Waveform	Simulated Sine Wave		
Battery Type & No	12V/9Ah x 1	12V/9Ah x 2	12V/9Ah x 2
Charging Time	6-8 hours recover to 90% capacity		
Dimension (DxWxH)	288 x 99 x 280 (mm)	410 x 99 x 280 (mm)	410 x 99 x 280 (mm)
Net Weight (kgs)	7.8	11.1	12
Humidity	0-90% RH @ 0-40°C non-condensing)		
Noise Level	Less than 40dB @ 1 meter	<40dB @ 1 meter	Less than 45dB @ 1 meter


\*Specifications are subject to change without notice.

## TROUBLESHOOTING

Problem	Possible Cause	Solutions
Nothing is displayed on LCD panel.	The UPS is not on.	Press the power switch again to turn on the UPS.
	Battery voltage is too low.	Charge the battery at least 6 hours.
	Battery fault.	Replace the battery.
The UPS always on battery mode.	Power cord loose.	Re-plug the power cord.
The UPS continuously beeps.	Please check the fault code for the details.	Please check the fault code for the details.
Backup time too short.	Battery voltage is too low.	Charge the battery at least 6 hours.
	Overload.	Remove some unnecessary loads. Before reconnecting equipment, please verify that the load matches the UPS capability specified in the specs.
	Battery defect.	Replace the battery.

If any abnormal situations occur that are not listed above, please call for service immediately.

## Documents / Resources

	<p><a href="#">FSP ST Series UPS &amp; AVR Stabilizer</a> [pdf] User Manual ST Series UPS AVR Stabilizer, ST Series, UPS AVR Stabilizer, AVR Stabilizer, Stabilizer</p>
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## References

- [User Manual](#)

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