

# SPV Series

UNINTERRUPTIBLE POWER SUPPLY

Models:

SPV0400U-TBF, SPV0600U-TBF, SPV0800U-TBF  
SPV0400UPlus-TBF, SPV0600UPlus-TBF, SPV0800UPlus-TBF

400VA ~ 800VA



*Thank you for purchasing this SPV Series UPS. Smart Power Systems is dedicated to developing and manufacturing the highest performance power protection and filtration devices for your electronic equipment. To safely operate this uninterruptible power supply system, please read and follow all instructions carefully. Read this manual thoroughly before attempting to unpack, install, or operate. You may keep this manual for further reference.*

**SmartPower**<sup>TM</sup>  
.....SYSTEMS

A POWER QUALITY COMPANY

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## SAFETY INSTRUCTIONS

Important Safety Warning (SAVE THESE INSTRUCTIONS)

**CAUTION!** To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area free of conductive contaminants. (See the specifications for the acceptable temperature and humidity range.)

**CAUTION!** 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 heaters or furnaces.

**CAUTION!** Do not attach non-computer-related items, such as medical equipment, life-support equipment, microwave ovens, or vacuum cleaners to UPS.

**CAUTION!** Do not plug the UPS input into its own output.

**CAUTION!** Do not allow liquids or any foreign object to enter the UPS. Do not place beverages or any other liquid-containing vessels on or near the unit.

**CAUTION!** In the event of an emergency, press the OFF button and disconnect the power cord from the AC power supply to properly disable the UPS.

**CAUTION!** Do not attach a power strip or surge suppressor to the UPS.

**CAUTION!** With the installation of this equipment, it should be prevented that the sum of the leakage current of the UPS to the connected consumer exceeds 3.5mA.

Attention hazardous through electric shock. Also with disconnection 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 quick connectors of the battery when maintenance or service work inside the UPS is necessary.

**CAUTION!** Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

**CAUTION!** When replacing the batteries, use the same number and type of batteries.

**CAUTION!** Internal battery voltage is 12VDC. Sealed, lead-acid, 6-cell battery.

**CAUTION!** Do not dispose of batteries in a fire. The battery may explode. Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes.

**CAUTION!** Unplug the UPS prior to cleaning and do not use liquid or spray detergent.

**CAUTION!** A battery can present a risk of electric shock and high short circuit current. The following precaution should be observed before replacing batteries:

- 1) Remove watches, rings, or other metal objects.
- 2) Use tools with insulated handles.
- 3) Wear rubber gloves and boots.
- 4) Do not lay tools or metal parts on top of batteries.
- 5) Disconnect charging source prior to connecting or disconnecting batteries terminal.

This compact UPS is to protect your PC data loss from power interruption. To safely operate this uninterruptible power supply system, please read and follow all instructions carefully. Read this manual thoroughly before attempting to unpack, install, or operate. You may keep this manual for further reference.

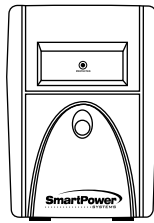
**CAUTION!** The socket-outlet shall be installed near the equipment and shall be easily accessible.

**CAUTION!** To reduce the risk of fire, connect only to a circuit provided with 20 amperes maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA70.

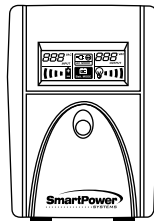
**CAUTION!** Risk of explosion if battery is replaced by an incorrect type. When replacing batteries, replace with the same type and number of batteries or battery packs.

# PRODUCT OVERVIEW

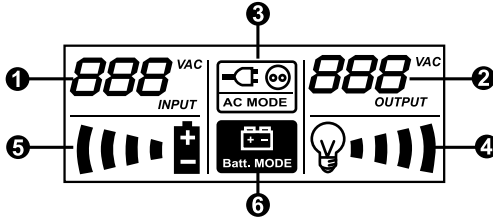
## Front Panel Overview:



SPV Series

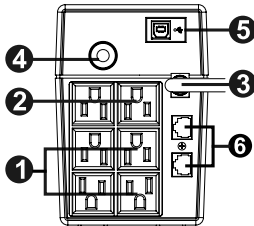


SPV Plus Series



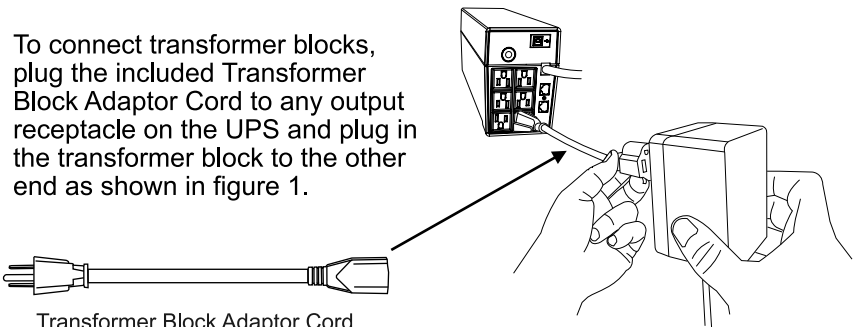
1. Input voltage
2. Output voltage
3. AC mode indicator
4. Load level indicator, flashing indicates overload
5. Battery capacity indicator, flashing indicates low battery
6. Battery mode indicator

## Rear Panel Overview:



1. "Battery + TBF™" output receptacles
2. "TBF™ Only" output receptacles
3. AC input
4. Circuit breaker
5. USB port
6. Modem/Phone/Network surge protection (RJ11/45)

To connect transformer blocks, plug the included Transformer Block Adaptor Cord to any output receptacle on the UPS and plug in the transformer block to the other end as shown in figure 1.



Transformer Block Adaptor Cord  
(2 included)

Figure 1

## INSTALLATION & INITIAL STARTUP

**NOTE:** Before installation, please make sure nothing inside of package is damaged. To protect your equipment from power failure, be sure that power switch must be kept in the “ON” position. Following below steps to install your UPS unit.

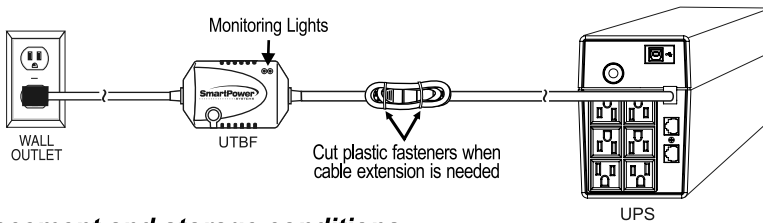
### **Connect to Utility & Charging**

Plug in the AC input cord into a grounded wall outlet. For the best results, suggest to charge the battery at least 4 hours before initial use. The unit charges its battery while connecting to the utility. Place UTBF unit where monitoring lights can be observed.

### **UTBF Monitoring Lights:**

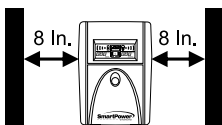
Green light only - It confirms properly connected equipment is fully protected. Green and Red light - Reverse polarity or loss of ground at the wall outlet. Call your electrician to correct the problem.

Green light off - Power failure or UTBF fault. Contact customer service.



### **Placement and storage conditions**

Install the UPS in a protected area that is free of excessive dust and has adequate air flow. Do NOT operate the UPS where the temperature and humidity is outside the specific limits.



### **Connect the Loads**

Plug in the loads to output receptacles on the rear panel of the UPS. Turn on the power switch of UPS unit, the devices connected to the UPS will be protected by UPS unit.

**CAUTION:** NEVER connect a laser printer or scanner to the UPS unit. This may cause damage to the unit.

### **Connect Modem/Phone Line**

Connect a single modem/phone line into surge-protected “IN” outlet on the rear panel of the UPS unit. Connect from “OUT” outlet to the computer with phone line cable.

## Connect Communication Cable

To allow for unattended UPS shutdown/start-up and status monitoring, connect the communication cable one end to the USB port and the other to the communication port of your PC. With the monitoring software installed, you can schedule UPS shutdown/start-up and monitor UPS status through PC.

## Turning On/Off the Unit

Turn on the UPS unit by pressing the power switch. Turn off the UPS unit by pressing again the power switch. You may check the front LED indicators for the status.

## Cold Start Function

When the UPS is off and there is no power utility, it's still possible to cold start the UPS unit to power the loads.

# SOFTWARE DOWNLOAD & INSTALLATION

SmartPower Systems provides a complete line of software solutions for standalone and networked computers, including SNMP support.



## FEATURES

- Automatic Save and Shutdown for unattended PCs
- Reboot/Shutdown scheduling
- Self test scheduling
- Power condition analysis
- Online display of input / output voltage and frequency, battery capacity and load level
- Dashboard interface
- Send on-line commands to UPS such as Test, Shutdown, Sleep and restart
- Extensive logging of all UPS operation and power quality data
- Event & date analysis
- Events and data bar charts presentation
- Graphical display of power quality
- Run in background even before user login



*Supports: Win95/98/ME/XP/NT/2000 / 2003*

*UPSwing Pro™ is also available for DOS, Novell, UNIX, SCO UNIX, SCO XENIX, SVR4, Novell Unixware, IBM AIX, NEC UNIX, DEC OSF/1, HP HP-UX, SGI IRIX, SUNOS, Sun Solaris, LINUX, and Windows™ with Networking capability.*

## Downloading UPSWING from the internet is a simple process:

- 1.Go to [www.smartpowersystems.com](http://www.smartpowersystems.com)
- 2.Click UPSWING Icon to enter software download area.
- 3.Choose operating system you need for your PC and double click to download software automatically.

## TROUBLESHOOTING

Problem	Possible Cause	Solutions
No words or LED display on the front panel	Battery voltage is too low	Charge the UPS unit up to 6 hours.
	Battery failure	Replace with the same type of battery.
	The UPS is not turned on.	Press the power switch again to turn on the UPS.
Alarm continuously sounds when the main is normal.	The UPS is overloaded.	Remove some loads first. Before reconnecting equipment, verify that the load matches the UPS capability specified in the specs.
When power fails, back-up time is shorten.	UPS is overloaded.	Remove some noncritical loads.
	Battery voltage is too low.	Charge battery for at least 6 hours.
	Battery defect due to high temperature operation environment, or improper operation to battery.	Replace with the same type of battery.
Unit always on battery mode	Power cord is loose, Fuse is burned.	Re-plug the power cord. Replace with the same type of fuse.
	AC utility is too high or too low, or there is a blackout.	Normal condition

# SPECIFICATIONS

MODEL	SPV0400U-TBF	SPV0600U-TBF	SPV0800U-TBF
	SPV0400U <i>Plus</i> -TBF	SPV0600U <i>Plus</i> -TBF	SPV0800U <i>Plus</i> -TBF
<b>OUTPUT</b>			
Capacity VA / W	400 / 240	600 / 360	800 / 480
Voltage (on battery)	Simulated sine wave at 120V ±10%		
Frequency (on battery)	50 or 60Hz ±0.5%		
Voltage Regulation (AVR)	120V ±9%		
Transfer Time	Typical 2-6 milli seconds, 10 ms max.		
<b>INPUT</b>			
Voltage	120V		
Input Voltage Range for Main Operations	90 - 145VAC		
Frequency	50 or 60Hz ±10% (auto sensing)		
<b>PROTECTION</b>			
Overload Protection	UPS automatic shutdown if overload exceeds: 1) Line mode: 110% of nominal at 5 minutes, 120% immediately 2) Battery mode: 110% of nominal at 5 seconds, 120% immediately		
Input Protection	Circuit breaker for overload & short circuit protection		
Tel/Data Line Protection	RJ11 Tel/Fax/Modem/DSL protection (two wire single line), RJ45 Network 10/100 Base-T protection		
<b>BATTERY</b>			
Type	Sealed, maintenance-free lead acid		
Typical Recharge Time	4 hours (to 90% of full capacity)		
Back-up Time (Minutes) Half Load	8	9	8
<b>PHYSICAL</b>			
Net Weight (Lbs. / Kg.)	9.5 / 4.3	12.8 / 5.8	13.2 / 6
Net Weight with UTBF Power Conditioner included (Lbs. / Kg.)	10.8 / 4.9	14 / 6.4	14.5 / 6.6
Dimensions D x W x H (In./mm)	13.0 x 3.9 x 5.6 / 330 x 100 x 142		
Input Plug	Nema 5-15P plug		
Output Receptacles	6-NEMA 5-15R (4 Battery + TBF, 2 TBF™ only)		
<b>ALARM</b>			
Audible Warnings	On Battery, Battery Low, Overload, Battery Replacement, Fault		
Visual Indicators	<b>LED</b> (UPS On, On Battery) or <b>LCD display</b> (SPV Plus models)		
<b>INTERFACE</b>			
<b>USB</b>			
Software	UPSWING for Windows detects power failure, battery low, schedule UPS on/off, AC power status display, bat / load level display		
<b>CONFORMANCE</b>			
Safety	cUL, UL		
Environmental Compliance	ROHS		
Warranty	Two years		
<b>ENVIRONMENT</b>			
Ambient for Operation	0-90% humidity non-condensing... Temperature 0-40 deg C		
Audible Noise	<40dBA (1 meter from unit)		

220/230/240V models available. Consult factory for specifications and features.

### Input Power Conditioner (Model UTBF07SG-120-UPS)

Filtration Safety	UL 1449 Listed
Spike Protection	1040 Joules
Lowest Pass Through Voltage	<10V Normal Mode <0.5V Common Mode (N-G)
EMI/RFI Filter	10dB at 0.15MHz, 50 dB at 30MHz
Monitoring Lights	Power ON / loss of ground / reverse polarity

Specifications and features subject to change without notice.



## UNINTERRUPTIBLE POWER SUPPLIES - UPS SERIES

Smart Power Systems' Uninterruptible Power Supplies (UPS) integrated TBF™ Technology provide on-line power conditioning.

### OTHER POWER PROTECTION PRODUCTS

#### TRANSFORMER BASED FILTER SERIES (TBF™) POWER FILTERS

Considered to be one of the most significant developments in the power protection industry. TBF™ Filters contain innovative technology that combines Surge Suppression and Noise Isolation which filters the noise on the ground to less than 0.5 Volts (US Patent # 6229682). Exclusive "POVP" Prolonged Over Voltage Protector (US Patent # 6560086) disconnects the output power if voltage exceeds 155 volts. Exclusive Smart Technology (US Patent #5721661) protects microprocessor based equipment against reverse polarity or no ground. The patented TBF™ filters prevent 90% of the power problems experienced by your POS system, computer, copier and facsimile machine.

#### LINE CONDITIONERS

Reduces the need for a dedicated line where voltage on ground is present. This transformer isolation technology is an option to expensive rewiring where poor wiring conditions exist on older or renovated buildings.

#### AUTOMATIC VOLTAGE REGULATOR - AVR SERIES

Regulates the voltage to protect equipment against voltage sags and brownouts. Electronic systems are designed to operate based on a clean and constant supply of AC voltage. Smart Power Systems' AVR line provides boost & buck capability to eliminate under or over voltage fluctuations.

## WARRANTY

All SPV Series UPS units carry a 2 year warranty. See our website for details.

### **\$25,000 Connected Equipment Warranty**

If the Smart Power Systems equipment fails and this failure allows a surge to pass through and damage the connected equipment, Smart Power Systems will pay for the repair or replacement of the connected equipment of the original purchaser. See our website for more details - [www.smartpowersystems.com](http://www.smartpowersystems.com)

## IMPORTANT

If for any reason you need to return the **SPV Series UPS** unit to the manufacturer, you should obtain an RMA (Return Material Authorization) number before returning the unit. To request an RMA number please call 1-800-772-7633 or visit the website at <http://www.smartpowersystems.com/content/main/rma.html>



1760 Stebbins Drive - Houston, Texas 77043 - Tel:(713)464-8000 - Fax:(713)984-0841  
E-mail: [support@smartpowersystems.com](mailto:support@smartpowersystems.com) - [www.smartpowersystems.com](http://www.smartpowersystems.com) **1-800-882-8285**