

SB-1000

UNINTERRUPTIBLE POWER SUPPLY



FURMAN

OWNER'S MANUAL

FEATURES

- 600 Watt / 1000VA capacity
- 3 minute back-up at full 5 amp load.
32 minute back-up with typical computer / monitor
- Adjustable output voltage for 110/115/120 VAC for U.S. units and 220/230/240 VAC for export units.
- RS-232 Interface performs monitoring functions and provides orderly computer shutdown
- Phone/fax line protection
- 19 inch rack mount ears included
- UL - CUL listed

INTRODUCTION

Please read and save this manual!

Thank you for selecting the Furman SB-1000 or SB-1000E uninterruptible power supply (UPS). This manual is a guide to install and use the UPS. It includes important safety instructions for operation and correct installation of the UPS. If you should have any problems with the UPS, please refer to this manual before calling customer service.

Please save the packaging materials! The UPS's shipping materials are designed to provide protection during delivery. These materials are invaluable if you ever have to return the UPS for service. Damage during transit is not covered under the warranty.

Intelligent Microprocessor Control

The UPS is a microprocessor-controlled unit. The SB-1000 provides reliable power during AC swells, sags and interference.

Furthermore, in order to save the battery energy, the UPS will automatically turn off under backup mode if none of the connected equipment is activated.

Advanced Battery Management

The UPS conveys its battery's status with the use of visual and audible indicators located internally and on its front panel. Its self-test function (which occurs when the unit is activated) detects a weak battery before it is put into service.

SAFETY INFORMATION

- **SAVE THESE INSTRUCTIONS** – This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries.
- **Servicing of the UPS and/or replacement of the batteries should be performed by authorized Furman service professionals only.**

FEATURES

Front Panel

1 “UPS1” Power Switch

Turns power ON/OFF to the UPS1 outlets on the rear panel.

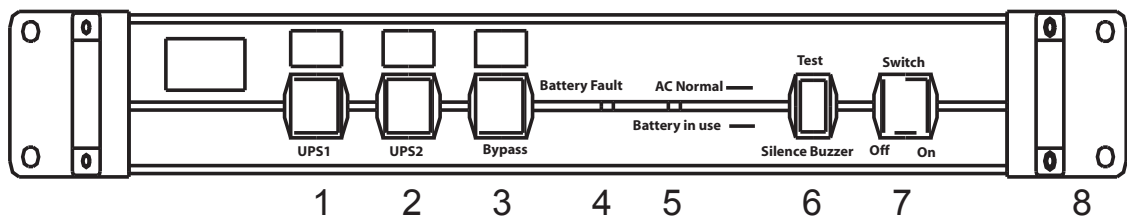
2 “UPS2” Power Switch

Turns power ON/OFF to the UPS2 outlets on rear panel.

3 “Bypass” Power Switch

Turns power ON/OFF to the BYPASS outlet on rear panel.

SB-1000 / SB-1000 E Front Panel



4 “Battery Fault” Indicator

The indicator will light when the battery is weak. Recharge the battery for at least four hours. If the light remains after recharging, replacement of the batteries may be necessary by a Furman service professional.

5 “AC Normal / Battery in use” Indicator

When indicator is ON, the power condition is normal. When indicator is flashing, the unit is in Battery backup mode.

6 “Test Button”

Use this button to put the unit into battery backup mode to check for proper operation. It also turns off the alarm when in backup mode.

7 Main Power Switch

This can be used as the master on/off switch for your equipment connected to the UPS.

8 optional rack ears (supplied)

Rear Panel

1 Communication Function

Provides RS-232 interface and UPSMON

software to support WINDOWS, DOS, NOVELL operating systems.

2 Phone/Fax Protection Ports

3 Circuit Breaker Protection

Serves as a current overload and fault protection.

4 IEC AC input

The AC power cord plugs in here.

5 Bypass Outlet

This provides a convenient surge protected outlet for items not requiring sag/swell protection or backup during power failure.

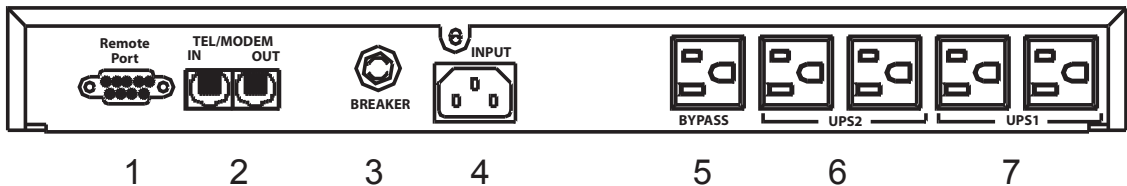
6 UPS2 Outlets

These outlets have battery backup protection and can be controlled by the UPS2 power switch on the front panel.

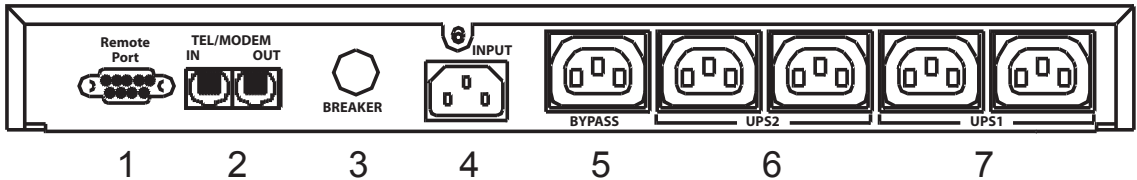
7 UPS1 Outlets

These outlets have battery backup protection and can be controlled by the UPS1 power switch on the front panel.

SB-1000 Rear Panel



SB-1000 E Rear Panel



INSTALLATION

Inspect the UPS upon receipt. Any damage to the packaging or unit is not covered under warranty. Contact your parcel carrier.

1) Recharge the batteries

The UPS may be used immediately upon receipt. Recharging the batteries at least eight hours before using the UPS is recommended. Energy loss may occur during shipping or storage. To recharge the battery, simply plug the UPS into an AC outlet. Once the power cord is connected, the UPS batteries will automatically start charging.

2) Connect the loads

Plug your primary equipment into the battery power-supplied outlets UPS 1 and UPS 2. Plug your peripheral equipment to the bypass outlet. Do not plug high-current equipment such as power amplifiers, projectors, and large mixing consols into the UPS 1 or 2 outlets, as they may cause the circuit breaker to trip. It is recommended that heavy loads be connected to the bypass outlet.

3) Connect the telephone

If you wish to protect a fax or modem, connect the telephone cable from the wall outlet to the "IN" jack. Connect the telephone cable (provided) from the "OUT" jack to the fax or modem. These ports are *not* for network protection.

4) Connect to the utility power

Plug the UPS to a grounded AC receptacle.

Avoid using extension cords. If used, make sure they are rated for at least 15 amps.

5) UPS self-test

The UPS will conduct a self-test each time it is switched on. Do not add or remove any equipment while the UPS conducts this self-test; wait until the Power indicator lights up, once completed, switch on your equipment.

6) Overload protection

If an overload situation (more than 5 amps load) is detected during self-test, the UPS audible alarm will activate, emitting a long beep and then will automatically shut down the system. If this occurs, unplug at least one piece of equipment from the battery supplied outlets. Switch off the UPS, wait 5 seconds and check to make sure the circuit breaker is set, then switch it on again.

7) Optimal battery status

To maintain the optimal status of the battery, leave the UPS plugged in at all times.

8) Self-protection feature

The UPS is equipped with a self-protection feature which prevents people from tampering with the unit and subsequently damaging it. It is programmed so that once it is switched off, the user must wait 5 seconds before switching it on again.

9) Storage

Cover and store the UPS with the battery fully charged. During extended storage, recharge the batteries every three months to ensure battery life.

OPERATION

1) Operation check

It is recommended that the user perform a simulation test when using the UPS for the first time or when adding an additional piece of equipment. Conduct a simulation-test: first, switch on the UPS and wait for the power indicator to light up, then simply unplug the UPS to simulate a utility failure.

2) Check the power requirement of your equipment

A. Make sure the total power of your equipment does not exceed rating capacity. (600W / 1000VA)

B. Also make sure the equipment you plugged into the Battery Power-Supplied outlets does not require total power exceeding the capacity of the UPS (600W / 1000VA). Otherwise, overload may occur and cause the circuit breaker to trip.

3) Limited rating power of UPS

When a utility failure occurs, the UPS output outlets will supply power to your equipment from its battery, and the alarm will beep every 5 seconds. Be sure that your equipment is running under the limited rating power. Plug the UPS back into the existing power source. Repeat the test a few times to make sure the UPS works properly and to determine the expected runtime.

SOFTWARE & COMPUTER INTERFACE

1) Power Monitoring Software

The UPSMON series software acts as a standard RS-232 interface to perform monitoring functions, and then provides an orderly shutdown of a computer in the event of power failure. Moreover, UPSMON displays all the diagnostic symptoms on monitor, such as Voltage, Frequency, and Battery level, etc. The software is available for DOS, Windows 3.1x, Windows 95/97/2000/ME/XP, Windows NT or later, Novell Netware.

2) Characteristics of the computer interface port

The computer interface port has the following characteristics:

The communication port on the back of the UPS may be connected to the host computer. This port allows the computer to monitor the status of the UPS and control the operation of the UPS, in some cases. Its major functions normally include some or all of the following:

- To broadcast a warning when power fails
- To close any open file before the batteries are exhausted
- To turn-off the UPS

BATTERY CABINET

1) Battery life of the UPS

The battery life of the UPS is about 3-6 years under normal usage.

2) Battery Replacement

Once the UPS's batteries is no longer useful, it must be replaced. Please contact Furman service personnel for replacement (see service section).

ONE YEAR LIMITED WARRANTY

Furman Sound, Inc., having its principal place of business at 1997 South McDowell Blvd., Petaluma, CA 94954 ("Manufacturer") warrants its SB-1000 (the "Product") as follows:

Manufacturer warrants to the original Purchaser of the Product that the Product sold hereunder will be free from defects in material and workmanship for a period of one year from the date of purchase. The battery is warranted for a period of 90 days. The Purchaser of the product is allowed fifteen days from the date of purchase to complete warranty registration by mail or on-line at the Furman website. If the Product does not conform to this Limited Warranty during the warranty period (as herein above specified), Purchaser shall notify Manufacturer in writing of the claimed defects. If the defects are of such type and nature as to be covered by this warranty, Manufacturer shall authorize Purchaser to return the Product to the Furman factory or to an authorized Furman repair location. Warranty claims should be accompanied by a copy of the original purchase invoice showing the purchase date; this is not necessary if the Warranty Registration was completed either via the mailed in warranty card or on-line website registration. Shipping charges to the Furman factory or to an authorized repair location must be prepaid by the Purchaser of the product. Manufacturer shall, at its own expense, furnish a replacement Product or, at Manufacturer's option, repair the defective Product. Return shipping charges back to Purchaser will be paid by Manufacturer.

THE FOREGOING IS IN LIEU OF ALL

OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Manufacturer does not warrant against damages or defects arising out of improper or abnormal use of handling of the Product; against defects or damages arising from improper installation, against defects in products or components not manufactured by Manufacturer, or against damages resulting from such non-Manufacturer made products or components. This warranty shall be cancelable by Manufacturer at its sole discretion if the product is modified in any way without written authorization from Furman Sound. This warranty also does not apply to Products upon which repairs have been affected or attempted by persons other than pursuant to written authorization by Manufacturer.

THIS WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of Manufacturer shall be to repair or replace the defective Product in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, shall Manufacturer be liable for incidental, special, or consequential damages. Manufacturer's employees or representatives' ORAL OR OTHER WRITTEN STATEMENTS DO NOT CONSTITUTE WARRANTIES, shall not be relied upon by Purchaser, and are not a part of the contract for sale or this limited warranty. This Limited Warranty states the entire

obligation of Manufacturer with respect to the Product. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

SERVICE

Before returning any equipment for repair, please be sure that it is adequately packed and cushioned against damage in shipment, and that it is insured. We suggest that you save the original packaging and use it to ship the product for servicing. Also, please enclose a note giving your name, address, phone number and a description of the problem.

NOTE: All equipment being returned for repair must have a Return Authorization (RA) Number. To get an RA Number, please call the Furman Service Department: (707) 763-1010, ext. 121. Please display your RA Number prominently on the front of all packages.

TROUBLESHOOTING

The UPS has a self-protect feature that prevents it from being damaged as a result of overheating. If the temperature is higher than 131°F (55°C), wait for a while and let the UPS become cool.

Problems	Possible Cause	Solution
Full-time Bypass outlets stop providing power to the equipment	Circuit breaker button popped up as a result of overload.	Unplug at least one piece of equipment from the Full-time Bypass outlets. Switch off UPS, wait 5 seconds, reset the circuit breaker (press down breaker button), then switch on UPS.
UPS doesn't perform to its expected runtime.	Batteries are undercharged or depleted due to frequent power outages.	Recharge the batteries by leaving the UPS plugged in and switched on.
	The power required by your equipment slightly exceeds the capacity of the UPS.	Unplug at least one piece of equipment from the UPS outlets.
	The batteries are slightly worn-out.	Call the service personnel to replace the battery.
UPS cannot be turned on.	The UPS is designed to prevent damage to equipment.	Switch UPS off, wait for 5 seconds, then switch UPS on.
	The batteries are worn-out.	Replace the batteries by following the instructions in this manual.
	Mechanical problem.	Contact your sales representative.

SPECIFICATIONS

Input:

Capacity: 1000VA / 600W
Voltage: +/-25% at line input
Frequency: 50 or 60 Hz +/-10% (auto sensing)

Output:

Voltage (on battery): Simulated sine wave at 110V/115V/120V or 220V/230V/240V +/- 5%
Frequency (on battery): 50 or 60 Hz +/- 5%

AC Line Voltage Regulation:

Input Voltage Range: 90 VAC to 150 VAC
(E-Version Input Voltage Range: 175 VAC to 290 VAC)
Output Voltage Range: 109 VAC to 131 VAC
(E-Version Output Voltage Range: 201 VAC to 252 VAC)
Transfer Time: 2-4 milliseconds, including detection time

Protection and Filtering:

EMI/RFI filter: 10 dB at 0.15 MHz, 50dB at 30MHz
Overload Protection: UPS automatic shutdown if overload exceeds 110% of nominal at 60 seconds and 130% at 3 seconds
Unit Input: Circuit breaker for overload & short circuit protection
10Base-T Cable Port: Phone/Fax (UTP, RJ-45) compatible jacks
Short Circuit: UPS output cut off immediately or input fuse protection

Batteries:

Type: Sealed, maintenance-free lead acid
Typical Recharge Time: 8 hours to 90% full capacity
Protection: Automatic self test & discharge protection, Replace battery indicator
Back-up Time: 3 - 180 min. (depending on computer load)

Physical:

Net Weight: 26 lbs
Shipping Weight: 29 lbs
Dimension: 14.8" W (19" with rack ears) x 13.8" D x 1.75" H

Alarm:

Battery Back-up: Slow beeping sound (about 0.47 Hz)
Battery Low: Rapid beeping sound (about 1.824 Hz)
Overload: Continuous beeping sound

Interface:

RS-232C port interface: RS-232C Bi-directional communication port

Environment:

Ambient Operation: 3,500 meters max. elevation, 0-95% humidity non-condensing, 0-40 deg C
Audible Noise: <40dBA (1 meter from surface)
Storage Condition: 15,000 meter max.

FURMAN

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