

SVEN®
YOU WANT – WE CAN

Uninterruptible Power Supply

OPERATION MANUAL



SMART 1000
SMART 1500

www.sven.fi

Operation Manual

SMART 1000 SMART 1500

Congratulations on purchasing the SVEN uninterruptible power supply!

Please read the following instructions carefully before connecting, operating or adjusting this product. Besides, please keep this manual in a safe place for future reference.

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UNPACKING

Unpack the device carefully. Make sure there are no accessories left in the box. Check up the device for damage; if the product was damaged during transportation, address the firm which carried out the delivery; if the product functions incorrectly, address the dealer at once.

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Technical support is on www.sven.fi

1. DESCRIPTION

Smart 1000/1500 line-interactive UPS is a perfect device for protection of computers and peripherals, such as monitors, modems, etc. In case of failure in the electric mains, the UPS continues supplying power to your equipment using energy of its storage batteries. The built-in automatic voltage regulator allows to provide correct power supply of the load in case of over- or undervoltage without entering the battery operation mode.

2. SAFETY PRECAUTIONS

- The UPS is designed solely for operation with computer equipment. Don't connect home heating appliances and other high-power devices and office equipment (room heaters, electric kettles, laser printers, conditioners, etc.). These appliances increase power consumption considerably, and this can cause UPS overload and breakdown.
- Locate the UPS indoors only, in rooms with controlled air temperature and humidity. During operation, the case of the device can be heated up to 50°C, which is absolutely normal.
- Replace the fuses with the same type and nominal fuses.
- Do not open up the battery, as the leaking electrolyte is dangerous for skin and eyes.
- Unplug the UPS before connecting the cables of the load to it or disconnecting them to reduce the risk of electric shock.
- In emergency conditions, switch off the UPS and disconnect the power cord from the mains.
- It is strongly forbidden to open the case of the device, as there is high voltage inside. If some problems occur, please address an authorized service centre. For the list of authorized service centres please go to www.sven.fi.
- The UPS service and the internal power supply (storage battery) replacement must be performed by qualified specialists only.



Caution! High voltage inside! To avoid the risk of electric shock do not open or touch elements inside.

3. PACKAGE CONTENTS

- Uninterruptible power supply — 1 pc
- Power cable — 1 pc
- Interface cable — 1 pc
- Software CD disk — 1 pc
- Fuse — 2 pcs
- Operation manual — 1 pc
- Warranty card — 1pc

4. SPECIAL FEATURES

- Pure sine wave line-interactive UPS
- Correct power supply to consuming devices within wide range of input voltage
- High efficiency
- Built-in surge protector
- LCD display
- Indication of parameters and basic operation modes
- Sound alarm for off-line operation, overload and critical discharge level of storage batteries

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- USB and RJ-11/RJ-45 communication ports
- Cold Start function in off-line mode
- Automatic electricity delivery at power supply renewal
- Short circuit and overload protection
- Modem/telephone circuit protection

5. OPERATION AND STORAGE CONDITIONS

• Do not operate the UPS in rooms with air temperature other than specified in Technical Specification.

• **Storage conditions.** Store the UPS closed in vertical position in a cool dry place, with fully charged battery.

Attention! Do not switch on the device immediately after you bring it into a room from environment with negative temperature! The unpacked device should be kept in conditions of room temperature for at least 4 hours.

• **Long-term storage.** In case of long-term storage in temperature conditions from +15 to +30 °C, charge the battery every 6 months.

6. CONTROL ELEMENTS AND INDICATORS

- ① LCD display: shows input and output voltage, frequency, battery capacity and load condition
 - ② BYPASS: Bypass mode operation LED (orange)
 - ③ AC INPUT: input voltage LED (orange)
 - ④ AC OUTPUT: output voltage LED (green)
 - ⑤ BATTERY: operation mode LED, green in on-line mode, red in off-line mode
 - ⑥ ON: UPS switch-on button
 - ⑦ OFF: UPS switch-off button
 - ⑧ CEE 7/4 output sockets
 - ⑨ INPUT: power cable input
 - ⑩ FUSE: fuse
 - ⑪ USB: USB interface connector
 - ⑫ TEL/MODEM/FAX: combined RJ-11/RJ-45 jack module protecting a modem/fax from overvoltage in the telephone line
- Attention! Using this module is not obligatory for UPS operation.**
- ⑬ ON/OFF: UPS power supply switch

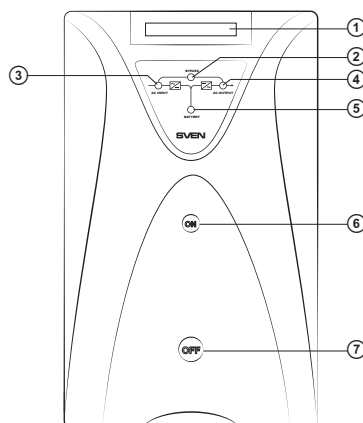


Fig. 1. Front panel

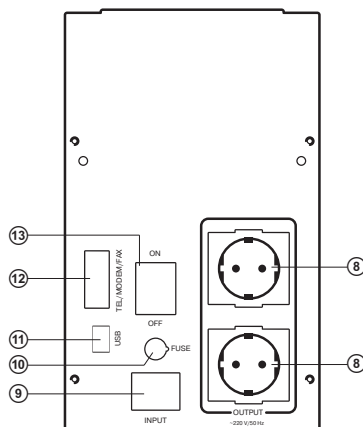


Fig. 2. Rear panel

7. CONNECTION AND OPERATION

Connection of Cables

- Place the UPS into a suitable well-ventilated position (there should be at least 150 mm free space around the fan).

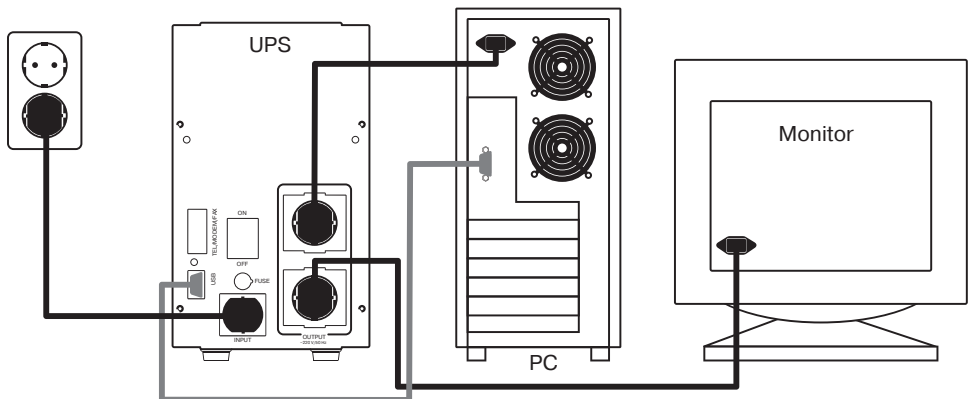


Fig. 3. UPS connection diagram

- Connect the power cable of the computer equipment to one of the UPS output sockets (8), and the monitor power cable – to the other UPS output socket (see connection diagram in Fig. 3). Then connect the supplied power cable to the UPS input socket (9), and put its plug into a mains outlet.
- Connect the USB interface cable to the corresponding socket (11) and to an available PC USB port (connection is optional).

UPS Switch-on

- Before the first connection of the UPS to the power mains, the storage batteries should be charged for at least 8 hours. To charge the batteries, switch on the UPS without load.
- At the first switch-on, move the switch (3) on the rear panel into ON position, and the UPS will start self-testing. The voltage will be transmitted via bypass, and the input voltage LED (3) will light up. The UPS will be in operating condition in 15 seconds. The output voltage LED (4) and the operation mode LED (5) will be on (both green); when the bypass mode LED (2) is out, you can switch on the computer or other connected load.
- At daily UPS start, press the ON button (6) and hold it down for three seconds, and in 15 seconds the UPS is ready to operate. The LCD display (1) will show frequency, output voltage, battery capacity (in %) and load condition (in %).
- At testing battery operation (Cold Start), press the ON button (6) and hold it down for three seconds, and the UPS will enter battery operation mode. In case of mains voltage blackout, the UPS enters battery mode automatically, and the operating condition LED (5) will illuminate with red, and the output voltage LED (4) – with green. When the battery is fully discharged, the UPS will switch off automatically with a long sound alarm.

- When the power supply is renewed, the UPS will automatically turn on and will charge its batteries.

UPS Switch-off

- Press the OFF button ⑦ on the front panel and hold it down for three seconds (daily switch-off), and the UPS will enter bypass mode (if it's plugged in), and Bypass mode LED ② will light up.
- If you aren't going to use the UPS for at least seven days, turn it off in such a way: press the OFF button ⑦ on the front panel, and then shift the switch ③ on the rear panel to OFF position.
- If you are using the UPS after a long-term break, switch it in the same way as first time and make sure it's on for at least 12 hours for the batteries to charge.

Warnings:

- **First switch on the UPS, and then connect the load. Disconnect the load before switching off the UPS.**
- **Before replacing the batteries, switch off the UPS.**
- **The UPS enters the battery operation mode once mains power supply is off or interrupted. The UPS works off-line for 3-6 minutes (depending on the load), which allows to shut down your PC or other equipment correctly.**

Recharge and Charge of Storage Batteries

- Even if the batteries are not in use, their efficiency can gradually reduce. That's why we recommend discharging the batteries completely every three months. In order to do this, disconnect the load from the UPS, unplug the UPS from the mains and put it into the off-line mode (battery power supply). After full battery discharge, when the UPS turns off automatically, connect it to the mains and charge the batteries for at least 10 hours.

Sound Alarms

- The sound alarm is on for 40 seconds (short beeps 0.2 sec) when the UPS is entering the off-line (battery) operation mode.
- The alarm will automatically turn on (short beeps 0.2 sec) when the batteries are almost discharged, reminding that the UPS will soon switch off.
- Long sound alarm for 60 seconds if the load exceeds 110% (in AVR mode) — in 60 seconds the UPS will enter bypass mode.
- Long sound alarm for 60 seconds if the load exceeds 110% (in inverter mode) – in 60 seconds the UPS will switch off.
- If the load is more than 125%, the UPS will automatically switch off in 5 seconds.

Connected Equipment Power Calculation

- To be sure that computer equipment is protected from electricity blackouts and the expected battery operation time is guaranteed, it's necessary to estimate the total power of the connected equipment. The total power of the connected load must not exceed the UPS load capacity, i.e., UPS active power indicated in Technical Specification.

Overloads and Short Circuit at the Output

- If the total input power of your equipment is more than the UPS load capacity or there is short circuit, the fuse ⑩ on the rear panel can activate, and the UPS will enter the off-line mode using battery power until the batteries are completely discharged.
- If this occurs, switch off the UPS, unplug the power cord from the mains and disconnect the faulty equipment.
- After removing the cause of overload or short circuit, replace the fuse (the UPS must be unplugged). Then connect the UPS again.

Connection of the Device Protecting from Voltage Surges in Telephone/Network Cable

- Connect the telephone cable into jack module ⑫ on the rear panel used to protect a modem/telephone line from overvoltage. The combined RJ-11/RJ-45 jack module allows connection of all standard telephone line plugs. An ATS or LAN socket is to be connected with RJ-11 cable, and the protected equipment – with RJ-45 cable.

Note. This connection is optional for UPS use.

Software

- The UPS is supplied with software providing control of UPS switch-on/off and file autosave function for operating systems as Windows 98/NT/2000/ME/2003/XP/7/Vista (32 bit).
- The software allows to control input/output voltage level, frequency, load and battery charge level, the UPS switch-on/off time, and keep a record of the electric mains condition.
- In case of voltage blackout, the UPS will shut down the system correctly and then switch off.

Storage battery replacement

- If it's necessary to replace the storage batteries, address qualified service centre specialists, as unqualified actions can lead to the UPS breakdown and electric shock.

Warning. Incorrect battery replacement may cause explosion.

8. TROUBLESHOOTING

Problem	Cause	Solution
The UPS is plugged in, input voltage LED ③ is off.	<ol style="list-style-type: none"> 1. Power switch ⑬ is off. 2. The fuse is in disrepair. 3. The cables are improperly connected. 	<ol style="list-style-type: none"> 1. Turn on the switch ⑬. 2. Replace the fuse. 3. Disconnect the cables and connect them again.
The UPS emits sound alarms and operates in off-line mode even in normal mains voltage conditions.	<ol style="list-style-type: none"> 1. The UPS has indicated falls or surges in input voltage and entered backup mode. 2. The fuse has been activated. 3. Poor contact in UPS mains connection circuit. 	<ol style="list-style-type: none"> 1. It's a normal phenomenon. The UPS protects computer equipment from failures in the electric mains. 2. Reduce the load, turn off the UPS and replace the fuse. 3. Check the quality of UPS connection to the electric mains.
The UPS operates in on-line mode and doesn't operate in off-line mode.	<ol style="list-style-type: none"> 1. The batteries are discharged. 2. The batteries are in disrepair. 3. The UPS is in need of repair. 	<ol style="list-style-type: none"> 1. Disconnect all the equipment and charge the batteries. 2. Replace the batteries. 3. Address a service centre.
The UPS emits a sound alarm for 60 seconds in on-line mode.	Possible overload or short circuit in the loaded equipment.	Remove the cause of short circuit or reduce the power of the connected load.
The UPS doesn't provide the expected duration of off-line operation or switches off.	<ol style="list-style-type: none"> 1. The batteries are discharged. 2. The batteries are in disrepair. 3. The circuit of battery connection cables is open. 	<ol style="list-style-type: none"> 1. Charge the batteries to the full 2. Replace the batteries. 3. Address a service centre.

If neither of the above mentioned methods can solve the problem, please seek professional advice at your nearest service center. Never attempt to repair the product yourself.

9. TECHNICAL SPECIFICATIONS

Parameters	Smart 1000	Smart 1500
Apparent power, VA	1000	1500
Active power, W	600	900
Controlled variables	input/output voltage, frequency, battery charge level, load condition	
Protection	from short circuit and overload; modem/telephone line protection	
Input socket	CEE 7/4	
Output sockets	2 × CEE 7/4	
Environment operating conditions	0 – 40 °C, 0 – 90 % humidity (without condensation)	
Input voltage, V	165 – 275	
Input frequency, Hz	50	
Output voltage, V	220 ± 10 % (from the mains), 220 ± 5 % (via inverter)	
Output frequency, Hz	50 ± 1 %	
Output voltage form	sine wave (on-line and off-line mode)	
Typical switching time, ms	> 8	
Battery operating period, min.	3- 10 min. (depending on the load)	
Recharge time	10 hours max. (up to > 90 %)	
Battery type	leakproof maintenance-free lead-acid rechargeable batteries	
Battery voltage, V	24	24
Battery capacity, A · h	2 × 7	2 × 9
Dimensions, mm	145 × 245 × 355	145 × 245 × 355
Weight, kg	12.0	13.9

Notes:

- **Technical specifications given in this table are supplemental information and cannot give occasion to claims.**
- **Technical specifications are subject to change without notice due to the improvement of SVEN production.**

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Моделі: **SMART 1000/1500**

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Условия гарантийного обслуживания смотрите в
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Гарантийный срок: 24 мес.
Срок службы: 5 лет.
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Моделі: **SMART 1000/1500**

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