

SVEN[®]
YOU WANT - WE CAN

Uninterruptible
Power Supply

OPERATION MANUAL



PRO+

www.sven.fi

Congratulations on your purchase of the Sven uninterruptible power supply!

Please read this Operation Manual before using the unit and retain this Operation 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 damages; 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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1. PRECAUTIONS

Before operating this device, please carefully read the following safety instructions:

- Before switching on the Uninterruptible Power Supply (UPS) in the electric mains for the first time, it is necessary to charge the storage battery for at least 12 hours. For this purpose the UPS should be switched on without load.

- If the storage battery has fully run down or the UPS has not been operated for three months, it is also necessary to charge the storage battery for at least 12 hours. Otherwise, its durability will be considerably reduced.

- We pay your attention that batteries composing UPS are consumables and are not subject to warranty replacement.

- The UPS is designed solely for operation with PCs equipped with switching power supply units*. It is strongly forbidden to connect inductive or capacitive load, as well as fully resistive load. Such loads include any devices with transformer power unit, electric engines, fluorescent lamps, laser printers, any heating appliances, etc.

- During operation, the case of the device can be heated up to 50°C, which is absolutely normal.

- It is strongly forbidden to open 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**.

- Do not let liquid and foreign objects get inside the device, it can cause short circuit or electric shock.

- In case there are signs of improper operation of the device (sparkling, unusual smells, etc.), it is necessary to turn off the device immediately and disconnect it from the mains, and address your nearest authorized service centre.

- It is forbidden to connect the UPS to equipment with power consumption higher than its maximum output power. It can cause overload and breakdown of the device.

It is strongly forbidden to operate the device in following conditions:

- in dusty environment or environment containing highly inflammable gas;

- at temperature higher than 40°C or lower than 0°C;

- at relative humidity level higher than 90%;

- in direct sunlight or next to heating elements;

- in vibration places;

- outdoors.

- In case of fire use only powder fire extinguisher, as using water can cause electric shock.

- Try to install the UPS in proximity to power supply, in such way it will be easier to unplug the device if necessary.

*The device operation is not guaranteed when connecting UPS with APFC (active power factor correction).

2. SPECIAL FEATURES

- Automatic voltage regulation within 165-275V (built-in voltage regulator)
- Cold Start feature at battery power supply
- Type of load: PC, monitor
- Short circuit, impulse and high frequency interference protection
- Transformer thermal protection
- Multifunctional LCD display (in Pro+ 650 (LCD, USB)/ 1000 (LCD, USB)/ 1500 (LCD, USB) models)
- Connection to PC via USB port (in Pro+ 650 (LCD, USB)/ 1000 (LCD, USB)/ 1500 (LCD, USB) models)
- Metal case (in Pro+ 600/ Pro+ 650 (LCD, USB)/ 800/ 1000 (LCD, USB)/ 1500 (LCD, USB) models)
- Fire-proof ABS plastic case (in Pro+ 400 models)

3. PACKAGE CONTENTS

- Uninterruptible power supply — 1 pc
- Software CD disk (for Pro+ 650 (LCD, USB)/ 1000 (LCD, USB)/ 1500 (LCD, USB) models) — 1 pc
- Interface cable (for Pro+ 650 (LCD, USB)/ 1000 (LCD, USB)/ 1500 (LCD, USB) models) — 1 pc
- Fuse — 2 pcs
- Operation manual — 1 pc
- Warranty card — 1 pc

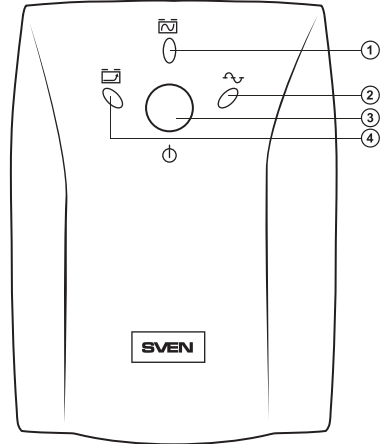
4. OPERATING PRINCIPLE

- Line-interactive UPS's provide perfect protection of PCs and peripherals. If there are drops of power supply in the mains, the device connected to the UPS is powered by battery via inverter converting +12/24V DC voltage into 220V AC voltage, which allows to save data and shut down the operation of the system properly.
- If mains voltage is normal, the current goes through a filter to AVR module (Automatic Voltage Regulator). Voltage is increased or reduced if necessary to correspond to standard 220V voltage, then voltage is supplied to the device connected to the UPS. At the same time the charging unit charges the battery.

5. DESCRIPTION

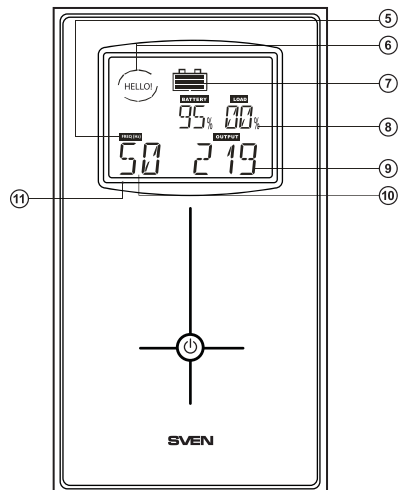
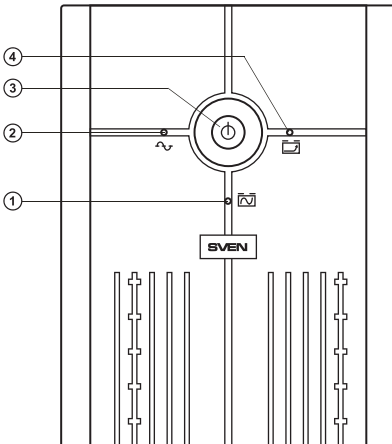
- ① : Power LED (red). Lights up at voltage failures (or when voltage goes beyond normal limits) at the UPS output
- ② : ON-line operation LED (green). Lights up when mains voltage is within normal limits
- ③ : UPS switch-on button
- ④ : Charge LED (yellow). Lights up when the battery is charging
- ⑤ : Off-line operation indicator
- ⑥ : Greeting
- ⑦ : Battery capacity indicator
- ⑧ : Load indicator
- ⑨ : Output voltage
- ⑩ : Input voltage or frequency in off-line operation mode
- ⑪ : LCD display

Pro+ 400



**UPS with LCD display
Pro+ 650 (LCD, USB)/
1000 (LCD, USB)/ 1500 (LCD, USB)**

Pro+ 600/ Pro+ 800



Important! Before the first start-up of the UPS it is necessary to charge the battery for at least 12 hours without load.

6. MAIN FUNCTIONS

- If there is no electric power supply in the mains, the UPS is powered with a battery, while the device connected to the PC produces an audio alarm every 6 seconds. Audio alarming turns off in 40 seconds.
- When the battery is running down, the UPS starts to produce an audio alarm every 2 seconds.
- When the battery has fully run down, there is a long audio alarm after which the UPS automatically switches off within 20 seconds.
- When electric power supply restores in the mains, the UPS automatically switches on. Then the battery should be charged for at least 12 hours.

7. CONNECTION

- Install the UPS in proximity to your PC and a socket.
- Switch off your PC and pull out the power cable from the socket.
- Connect the PC to the UPS.
- Plug the UPS to the 220 V mains and press ON/OFF switch of the UPS.
- Then PC can be switched on.

Connection of models with USB port to your PC:

- Interface USB cable controls the state of UPS with software (included) in Windows operating system.
- The software allows to control of input voltage level and the state of battery.
- If power supply in the mains drops, the UPS can properly shut down the system by means of the software, then the UPS turns off.
- Software allows to set the PC switch-off time, and also to keep record of the state of mains power supply.

Important! UPS is designed for powering only PCs and monitors, therefore refrain from connecting other peripherals such as printers, scanners, speaker systems, etc.

Important! Note that battery operation time is limited to 3-20 minutes, if mains power supply is cut off. During this time it is necessary to save all open documents and switch off the PC, then the UPS should also be switched off.

8. BATTERY MAINTENANCE

Pro+ UPS series contains one or two maintenance-free sealed lead-acid batteries. High humidity, too high or low temperature, frequent battery discharge reduce its durability. If battery has not been operated for a long period of time, it also has negative impact on its durability. Therefore, it is recommended to carry out the whole cycle of battery charging/discharging at least once per three months.

Storage conditions

- The UPS should be stored closed in vertical position in a dry and cool place with fully charged storage battery.
- Before placing the UPS in storage, charge it for 10 hours.

Warning! Do not operate the UPS in environment with operating temperature not corresponding to value given in Technical Specifications.

9. TROUBLESHOOTING

Problem	Solution
The UPS is connected to the mains with voltage nominal, though the device shows no voltage in the mains and enters off-line mode.	There is over- or undervoltage in the mains. Switch off the PC and the UPS. Switch them on again after voltage becomes normal.
The UPS does not start.	The fuse has burned down. Replace it.
When power supply drops, the UPS immediately switches off.	<ol style="list-style-type: none"> 1. The battery is discharged. It is necessary to carry out the whole cycle of battery charging. 2. The battery is out of order. It is necessary to replace the battery.

If none of the above methods can solve the problem, please seek professional advice at your nearest service center. Never attempt to repair the product yourself.

10. TECHNICAL SPECIFICATIONS

Parameters	Models	Pro+ 400	Pro+ 600	Pro+650 (LCD, USB)	Pro+ 800	Pro+1000 (LCD, USB)	Pro+1500 (LCD, USB)
Apparent power, VA		400	600	650	800	1000	1500
Active power, W		240	360	390	510	600	900
Battery capacity, A·h		7	7	7	9	2 × 7	2 × 9
Battery voltage, V		12	12	12	12	24	24
USB		-	-	+	-	+	+
LCD		-	-	+	-	+	+
Type of load		PC, monitor					
Input voltage, V		165 – 275					
Input frequency, Hz		50					
Output voltage, V		220 ± 10 %					
Output frequency, Hz		50 ± 1 (backup mode)					
Backup time, min		3-20 (dependent on connected load)					
Transfer time, ms		≤ 10					
Short circuit protection		fuse, voltage converter current limiter* (* models with LCD display)					
Efficiency, %		> 80					
Operating temperature, °C		0 - 40					
Operating humidity, %		10 ~ 90					

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 improvement of SVEN production.

Uninterruptible Power Supply

SVEN®
YOU WANT – WE CAN



Модели: **Pro+ 400/ 600/ 650 (LCD, USB)/
800/ 1000 (LCD, USB)/ 1500 (LCD, USB)**

Импортер в России: ООО «СКАНДИТРЕЛ», 111024,
РФ, г. Москва, ул. Авиамоторная, д. 65, стр. 1.

Уполномоченная организация в России: ООО «РТ-Ф»,
105082, г. Москва, ул. Фридриха Энгельса, д. 75, стр. 5.

Условия гарантийного обслуживания смотрите
в гарантийном талоне или на сайте **www.sven.fi**.

Гарантийный срок: 24 мес.

Срок службы: 5 лет.

Производитель: «СВЕН ПТЕ. Лимитед», 176 Джу Чиат Роуд,
№ 02-02, Сингапур, 427447. Произведено под контролем
«Свен Скандинавия Лимитед», 48310, Финляндия,
Котка, Котолахдентие, 15. Сделано в Китае.

Manufacturer: SVEN PTE. LTD, 176 Joo Chiat Road,
№ 02-02, Singapore, 427447. Produced under the
control of Oy Sven Scandinavia Ltd. 15, Kotolahdentie,
Kotka, Finland, 48310. Made in China.

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PRO+