

SVEN[®]
YOU WANT – WE CAN

Uninterruptible
Power Supply

OPERATION MANUAL



**RESERVE
HOME**

www.sven.fi

Congratulations on your purchase of the Sven uninterruptible power supply!

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1. BUYER RECOMMENDATIONS

- 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.
- Check up the package contents and availability of the warranty card. Make sure the warranty card has a shop stamp, a legible signature or the seller's stamp and purchase date, and the number of the wall mount corresponds to that in the warranty card. Remember: in case of warranty card loss or discrepancy of numbers you forfeit the right for warranty repairs.
- Do not switch on the speaker system immediately after you bring it into a room from environment with negative temperature! After unpacking, the speaker system should be kept in conditions of room temperature for at least 4 hours.
- Before installing and using the speaker system, read this Manual carefully and keep it for future reference.

Technical support is on www.sven.fi

1. PRECAUTIONS

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

- Before operation a battery should be charged (the battery is not included) for at least 12 hours. For this purpose the UPS should be switched on without load.
- If a battery is discharged completely or the UPS has not been operated for more than three months, the battery should be charged completely as well. Failure to comply with storage rules of batteries will result in their service life decrease.
- The connected load power must not exceed the rated power indicated in the technical specifications table.
- Place the UPS in closed rooms with the regulated temperature and humidity of the air. The UPS case temperature can be risen during its operation, it is a normal phenomenon.
- Do not open the battery: escaped electrolyte is dangerous for the skin and eyes.
- Disconnect the UPS from the mains before connection/disconnection of load cables to the UPS to avoid electric shock.
- In case of an emergency, turn off the UPS and disconnect the power cord from the mains.
- It is strictly prohibited to open the device case – there is high voltage inside. In case of any problems, connect to the service center. The list of authorized service centers is available on www.sven.fi.
- UPSs should be serviced by qualified specialists only.
- It is strictly prohibited to use the UPS in the following conditions:
 - in dusty environment containing highly inflammable gases;
 - at a temperature higher than 40 °C or lower than 0 °C;
 - at the relative humidity level higher than 90 %;
 - in direct sunlight or close to heating elements;
 - in places with elevated vibration;
 - outdoors.
- In case of fire use a powder fire extinguisher only, as using water can cause electric shock.
- Try to install the UPS in close proximity to a power supply, in such way it will be easier to unplug the device as may be required.

Note. Periodic maintenance of the device is recommended, as well as periodic control of the battery state to provide the device operability.



Caution! There is high voltage inside on unsolated components, which can result in electric shock.

3. PACKAGE CONTENTS

- Uninterruptible power supply — 1 pc
- Interface cable to connect external batteries — 2 pcs
- Operation manual — 1 pc
- Warranty card — 1 pc

4. TECHNICAL DESCRIPTION

Operating principle

- Models of RESERVE HOME series fall in the line-interactive uninterruptible power supply of continuous action with prolonged back-up time. Principle of their operation is based on the transformation of direct current of external batteries to alternating current. Current waveform at the output is the regular sine curve.
- Its primary function is the power supply for household and industrial equipment, which is critical to the input current waveform (boiler equipment, automation systems, etc.).
- The device is equipped with the automatic voltage regulator (AVR). The built-in regulator allows providing correct power supply of load at overvoltage/undervoltage of the mains without going to the operation mode from batteries.
- The intellectual circuit of battery charging is used in the device, which automatically selects the charging mode.
- The automatic start function provides automatic switching on when there is power supply. With input voltages 160 V and 260 V the automatic start is not activated.

Special features

- Continuous action with prolonged back-up time
- Built-in automatic voltage regulator
- Regular sinusoidal output signal
- Microprocessor control
- Intellectual charger for connected external batteries
- Protection against short circuit in connected load to UPS, as well as against overload
- Protection against overvoltage or undervoltage in the mains
- IP-20 ingress protection
- Self-diagnosis after switching on
- Indication of operation modes on LCD display
- Mode switchover time ≤ 5 msec
- Automatic start function
- Low noise level

Description

- ① OUTPUT VOLTAGE: output voltage indicator
- ② INPUT VOLTAGE: input current indicator
- ③ BATTERY CAPACITY: battery capacity indicator
- ④ LOADING CAPACITY: device load indicator
- ⑤ UTILITY: operation mode from the mains
- ⑥ BACKUP: operation mode from battery. It is lights, when there is no output voltage or its value goes beyond its rate
- ⑦ CHECK: error indicator
- ⑧ ⏻: UPS on/off button
- ⑨ ⚠: OVERLOAD: overload indicator
- ⑩ 🔔: buzzer on/off button
- ⑪ RS232: RS232 connector
- ⑫ AC Input: power cord
- ⑬ Circuit Breaker: automatic temperature fuse
- ⑭ 12VDC: terminals for battery connection
- ⑮ ~220V Output: socket

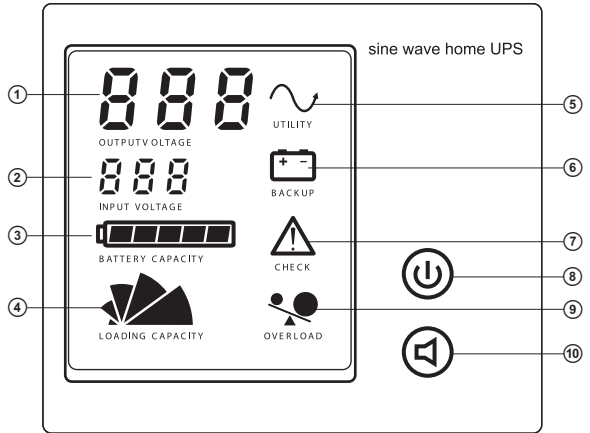
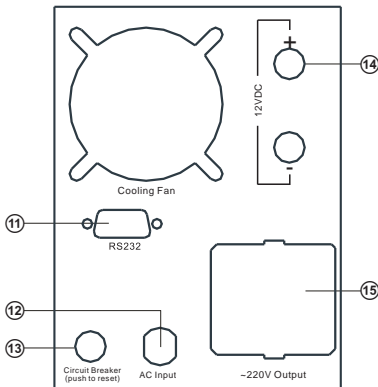
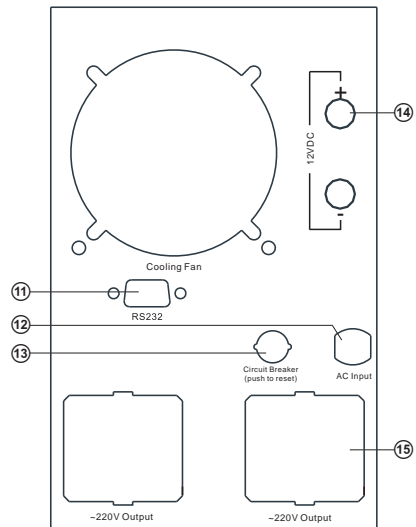


Fig. 1. UPS display



Reserve Home-500



Reserve Home-800/1000

Fig. 2. Rear panels

5. CONNECTION AND OPERATION

- Place the set (UPS + batteries) in an appropriate position with proper ventilation (free space around the UPS must be not less than 25 cm).
- Connect the battery (to be purchased separately) to power terminals of the UPS using the cables from the package contents.

ATTENTION!!!

- **Sparkling is allowed at the touch of power terminals during battery connection to the UPS.**
- **Before the first using of the UPS, the battery should be charged without load for not less than 12 hours.**
- **Batteries should be connected in parallel, when several batteries are used simultaneously. Additional cables (to be purchased separately) will be required to connect extra batteries. When two or more batteries are connected, the plus terminal of one battery is connected to the plus terminal of the other battery, minus terminals of batteries are connected similarly.**
- After that connect the UPS to the grounded single-phase network with the help of power cable ⑫. The LCD display will be switched on, the buzzer beeps 4 times. The output voltage indicator ① will display the figure "220". You don't need to turn on the UPS after its connection to the network with the button ⑧, the "autostart" function will start it automatically.
- The battery must be charged. To do this, the UPS is to be in switched on position till the battery is charged completely. The battery charge level is displayed on the five-segment indicator ③ (every segment displays approx. 20 % of the battery capacity). When the battery is charged completely (approx. 12 hours), all 5 segments of the indicator ③ must light.
- When the battery is charged, press and hold the button ⑧ till the buzzer beeps one time. The UPS is turned off and the output voltage indicator ① will display the figure "000". Disconnect the UPS from the network unplugging it from a socket.
- Connect devices-consumers to the UPS when it is switched off. To do this, insert plugs of consumers into UPS sockets ⑬.
- Insert the UPS plug into a socket once more. Then switch on the connected devices using their switches.

Notes:

- **When the occasion requires disconnecting the UPS enforced, unplug devices-consumers and turn off the UPS in manner aforesaid. Press and hold the button ⑧ within 4 seconds to restart the UPS. The buzzer beeps four times and the output voltage indicator ① will display the figure "220".**
- **If the UPS is not used for a long time, the battery is to be charged once every three months. We recommend to read the manufacturer's manual for the proper maintenance of the battery.**
- **When two or more batteries are used, they should be of one type and have the same capacity (if their capacities are different, the batteries will have different internal resistance and due to this the charge level will be different).**
- **If the UPS is not used for a long time, unplug it and disconnect the battery set. As this UPS has the autostart function, a power supply failure will result in the UPS automatic starting.**

Cold start function

• The UPS can be switched on without connection to the mains using the cold start function. In order to switch on the UPS, press and hold down the button **Ⓢ** within 4 sec. The buzzer beeps four times, the output voltage indicator **Ⓛ** displays the figure “220” and the power will be supplied to devices-consumers.

Note. It is not recommended to use the cold start function when the connected load is large.

Sound alarm and protection

- At the instant the UPS starts to use power from batteries, it beeps 4 times. Then the UPS beeps every 30 seconds, when it operates from batteries. This function can be switched off. To do this, press and hold down the button **Ⓢ** within 2 sec., the buzzer beeps one time and signals will be over. When beeps are required, repeat the procedure.
- If the battery capacity is low (while operating from batteries), the UPS beeps every second.
- When the battery residual voltage is lower than 10.5 V, the UPS is switched off.
- When load is too high (approx. 110 %), the UPS beeps continuously. When load is 120 % or more the UPS is switched off.

Storage conditions

- The temperature and humidity conditions in premises, where the device placement is intended, must correspond to the norms indicated in the Technical Specifications table.
- The UPS must be stored with batteries full charged.
- Storage conditions of batteries should comply with the manufacturer’s requirements.

Monitoring program

• Monitoring program of the UPS, which can be downloaded on www.sven.fi website, allows controlling its operation condition and registering its operating parameters. It is compatible with most operating systems. The UPS is connected to PC with RS232 cable (not included) via RS232 port. More detailed information you can see in the Software Manual on www.sven.fi website.

The approximate battery/batteries time of operation of uninterruptible power supplies of RESERVE HOME series in accordance with the load rate and a battery/batteries capacity.

Reserve Home -1000							
Reserve Home-800							
Reserve Home-500				Load 400 W	Load 480 W	Load 500 W	Load 600 W
Battery capacity	Load 100 W	Load 200 W	Load 300 W	Load 400 W	Load 480 W	Load 500 W	Load 600 W
12V/50 A-h	3.41 h	1.70 h	1.13 h	0.85 h	0.71 h	0.68 h	0.57h
12V/75 A-h	5.11 h	2.55 h	1.70 h	1.28 h	1.06 h	1.02 h	0.85 h
12V/100 A-h	6.82 h	3.41 h	2.27 h	1.71 h	1.42 h	1.36 h	1.14 h
12V/150 A-h	10.23 h	5.11 h	3.41 h	2.56 h	2.13 h	2.05 h	1.71 h
12V/200 A-h	13.65 h	6.82 h	4.55 h	3.41 h	2.84 h	2.73 h	2.28 h

6. TROUBLESHOOTING

Problem	Cause	Solution
The UPS is connected to the mains, but the indicator does not light.	<ol style="list-style-type: none"> 1. The switch is not on. 2. Input fuse has come into action. 3. Unreliably connected cables. 	<ol style="list-style-type: none"> 1. Switch on the switch. 2. Switch off the load. Press the fuse button. If the UPS operation is normal check the load power. 3. Disconnect cables and connect them once again.
The UPS beeps and operates in the off-line mode even with normal voltage in the mains.	<ol style="list-style-type: none"> 1. The UPS found depressions or surges in input voltage and has gone to the standby mode. 2. Input fuse has come into action. 3. Poor contact in the UPS connection circuits to the mains. 	<ol style="list-style-type: none"> 1. It is normal phenomenon. The UPS protects the equipment against voltage disorders of the mains. 2. Disconnect the load. Press the fuse button. If the UPS operation is normal check the load capacity. 3. Check the UPS connection reliability to the mains.
The UPS operates from the mains, but does not operate in the off-line mode.	<ol style="list-style-type: none"> 1. Batteries are discharged greatly. 2. Defective batteries. 3. The UPS is to be repaired. 	<ol style="list-style-type: none"> 1. Disconnect all equipment and charge batteries in full. 2. Replace batteries. 3. Consult with the service center.
The UPS beeps long during operation from the mains.	Overload.	Decrease the connected load power.
The UPS does not provide the expected time of operation in the off-line mode or it is switched off.	<ol style="list-style-type: none"> 1. Batteries are discharged greatly. 2. Defective batteries. 3. Circuit of connecting cables of batteries is open. 	<ol style="list-style-type: none"> 1. Charge batteries in full. 2. Replace batteries. 3. Check the connection reliability of cables to batteries.

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.

7. TECHNICAL SPECIFICATIONS

Parameters		Models	Reserve Home-500	Reserve Home-800	Reserve Home-1000
Apparent power, VA			500	800	1000
Active power, W			300	480	600
Allowable load of the rated power, %			≤ 110		
Overload protection acting, %			120		
Input voltage, V			~150 – 275		
Output voltage, V			~220 ± 10 %		
Frequency, Hz (input/output)			50 / 50		
Number of phases			1		
Coefficient of efficiency (during operation from batteries), %			65		
Operation mode			continuous, long-lasting		
Output waveform	Normal conditions and AVR		regular sinusoid		
	Operation mode from batteries				
Protection	AVR operation mode		against high voltage/undervoltage, overload, short circuit, overvoltage		
	Operation mode from batteries		against discharge, overload, short circuit		
Cooling type			convective; by fan		
Beeps			low battery charge, overload, error		
Switching time, msec			< 5		
Battery: plug-in external (optional)	Type		non-serviceable leakproof lead-acid batteries		
	Voltage, V		12		
	Charging rate, A		10		
Temperature conditions, °C			-5 ~ 40		
Storage temperature, °C			-15 ~ 45		
Humidity, %			10 ~ 90, without condensation		
Noise level, dB			45		
Dimensions (W × H × D), mm			115 × 165 × 344	140 × 214 × 367	
Weight, kg			4.6	7.3	9.3

Notes:

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

Uninterruptible Power Supply

SVEN®
YOU WANT – WE CAN



Модели: **Reserve Home-500/800/1000**

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 Чиаг Роуд,
№ 02-02, Сингапур, 427447. Произведено под контролем
«Свен Скандинавия Лимитед», 48310, Финляндия, Котка,
Котлахдентие, 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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