SVEN®

YOU WANT – WE CAN

Automatic Voltage Regulator

OPERATION MANUAL

AVR–500
AVR–800
AVR–1000
AVR–2000
AVR–3000

www.sven.fi

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Congratulations on the purchase of Sven automatic voltage regulator!

Please read this Operation Manual before using the unit and retain this Operation Manual in a safe place for future reference.

TRADEMARKS
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NOTICE OF RESPONSIBILITY RESTRICTION
Despite the exerted efforts to make this Manual more exact, some discrepancies may occur. The information in this Manual is given on «as is» terms. The author and the publisher do not bear any liability to a person or an organization for loss or damage which has arisen from the information contained in this Manual.

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.

CONTENTS

Technical support is on www.sven.fi

Operation Manual

AVR

1. SAFETY PRECAUTIONS

Before using this device, please read the safety rules carefully:

• It is strongly forbidden to open the cover of the device, there is high voltage inside. If some problems occur, please read the operation manual carefully and address an authorized service center. For the list of authorized service centers please go to ***www.sven.fi***.

• Do not let liquid 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.), unplug the device from the mains immediately and address your nearest authorized service center.

• It is forbidden to connect the automatic voltage regulator to devices with power consumption higher than its maximum output power. It can cause breakdown of the device.

• Do not let children operate the device.

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

• in dusty environment or environment containing highly inflammable gas;

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

• at humidity level higher than 90%;

• in direct sunlight or next to heating elements;

• in vibration areas;

• outdoors.

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

• The automatic voltage regulator should be installed in proximity to power supply, then it will be easier to unplug the device if necessary.

Note. Connecting the AVR-3000 regulator to standard mains outlets is prohibited! The AVR must be connected to power supply and to consuming devices via terminals located on the rear panel under the detachable cover, and using appropriate cables. Therefore, connection of AVR-3000 regulator is to be made by qualified electricians only.

2. PACKAGE CONTENTS

• Automatic voltage regulator – 1 pc

• Operation manual — 1 pc

• Warranty card — 1 pc

3. SPECIAL FEATURES

• Automatic switch-off in case of overvoltage

• Wide range of input voltage (100 – 280 V)

• Input and output voltmeters on the front panel

• Protection of consuming devices from excessive input and output voltage, short circuit, high-frequency and high-voltage interferences

• Network status indicators on the front panel

• Pause function for 3-minute delay of power supply at its restoration

• Convenient carry handle

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4. DESCRIPTION

① Input voltmeter
② Normal voltage LED
③ Pause LED
④ Pause On/Off button
⑤ Output voltmeter
⑥ High/Low voltage LED
⑦ On/Off switch

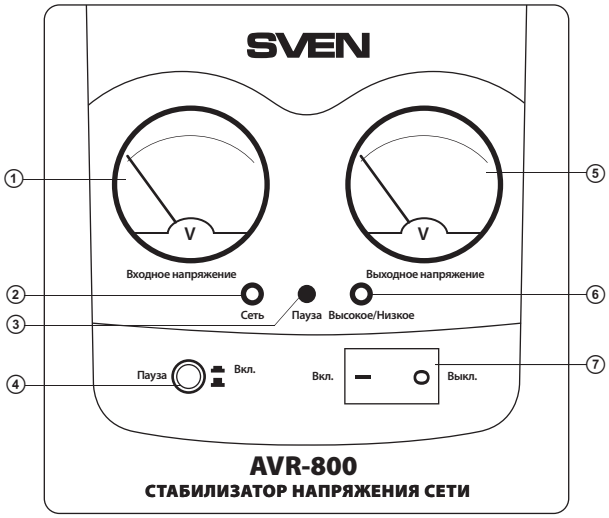
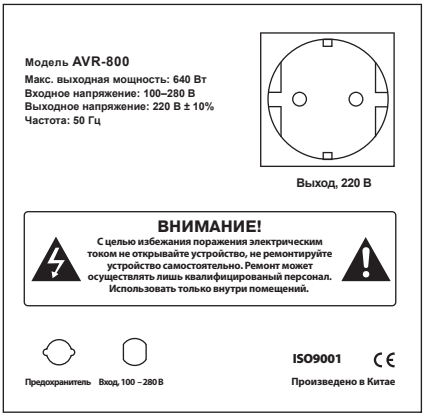
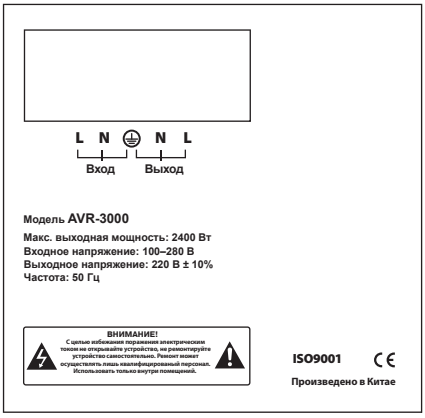


Fig. 1. Front panel



AVR-800*



AVR-3000

Fig. 2. Rear panels

* Rear panel of AVR-500, AVR-1000, and AVR-2000 is the same as that of AVR-800, the only difference is that AVR-2000 has not one, but two output sockets.

5. APPLICATION

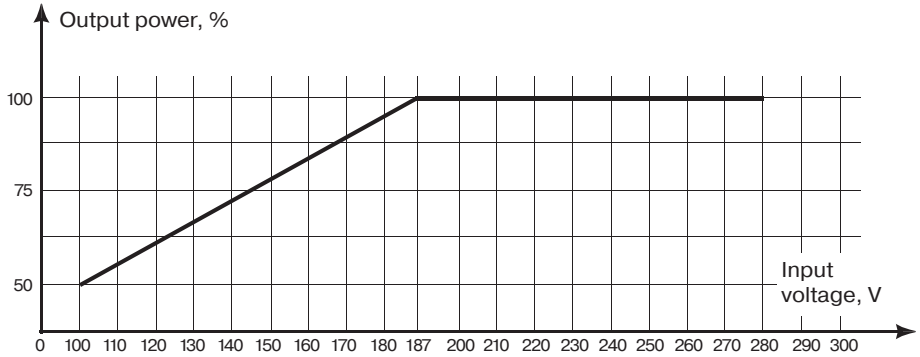
Automatic voltage regulator (AVR) is designed for providing various equipment with high-quality stable electric power supply in conditions of significant and continuous deviations of mains voltage and protecting your equipment from high-frequency and high-voltage impulses.

6. INSTALLATION

Attention! Before connecting the regulator, make sure that all consumer devices connected to it are off.

• Before installing the AVR, please make sure that total power of all voltage consumers is lower than AVR power. Taking into account the starting load and power factor of voltage consumers, it is necessary to apply power margin factor of 1.2–1.5; for such equipment as air conditioners, fridges and other electric motors it should be 1.5–2.

Attention! When choosing an AVR, it is necessary to know that reduction of input voltage increases value of input current, which means that maximum power of AVR is reduced too! Such dependence is shown in the graph below:



Note. When choosing or operating an AVR, it is always necessary to adhere strictly to such dependence. If the condition stated above is not adhered to, warranty servicing becomes void!

• Voltage consumers should be connected only if the AVR is off.

• Connect the AVR to a 220 V household mains (except for AVR-3000 model) and switch it on. Only after this has been done, switch on voltage consumers connected to the AVR.

• If the AVR operates properly, a green LED (Normal voltage LED) lights up, the left digital display shows input voltage of the AVR and the right digital display shows output voltage of the AVR.

• In case mains voltage goes beyond the permissible range (± 8 %), a red LED lights up.

Attention! If mains power supply drops, it is recommended that you switch off the AVR and all voltage consumers and switch them back on only after power supply has been fully restored.

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7. PAUSE FUNCTION

• Pause feature is designed to protect your equipment in case of frequent drops of power supply. It is especially important for voltage consumers with electric motors or compressors. After power supply has been restored, the AVR switches on in about 3 minutes. The pause LED ③ illuminates, if this feature has been activated, i.e. Pause On/Off button ④ is in the On position.

8. PROTECTION FROM HIGH INPUT VOLTAGE, OVERLOAD AND OVERHEAT

• The AVR is equipped with specially designed integrated automatic protection circuit against over-voltage. If mains voltage is above 280 V, load is automatically cut off. If voltage is below 280 V, the AVR automatically restores power to all connected consumers.

• The AVR is also equipped with overload/overheat protection feature. If the connected load is too big, the transformer is heated and when certain temperature is reached, the load is cut off. After cooling down, the AVR automatically switches on.

9. TROUBLESHOOTING

Problem	Cause	Solution
The AVR does not start.	1. The switch is off. 2. There is no power in the socket. 3. The automatic fuse has activated. 4.The load connected is too powerful.	1. Press the switch once again. 2. Make sure there is electric power supply. 3. Disconnect part of the load and switch on the AVR again. 4. Disconnect part of the load.
The AVR switches on, but there is no output voltage.	The AVR is faulty.	If the fault is not eliminated, please address an authorized service center.
The AVR often produces a clicking sound.	Input voltage is unstable.	It is normal. The AVR is regulating output voltage.
The AVR has cut off load. High/Low voltage LED illuminates.	Input voltage is beyond possible regulation range of 100-280 V.	When input voltage restores within 100-280 V, the AVR switches on automatically.

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	AVR-500	AVR-800	AVR-1000	AVR-2000	AVR-3000
Maximal output power, W*	400	640	800	1600	2400
Fuse, A	4	6	7	15	20
Input voltage, V	~100 – 280				
Input frequency, Hz	50				
Output voltage, V	~220 ± 8 %				
Output frequency, Hz	50				
Switch time, ms	⩽ 10				
Short circuit protection	automatic fuse				
Operating temperature, ˚C	0 – 40				
Humidity, %	up to 90				

* The AVR output power is rated for the input voltage of 187 V (220 V – 15 %) (According to the requirements of GOST 27699–88).

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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Модели: **AVR-500, AVR-800, AVR-1000, AVR-2000, AVR-3000**
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.

AVR–500
AVR–800
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AVR–3000