

# SVEN®

## Automatic Voltage Regulator

# OPERATION MANUAL



**VR-A500**  
**VR-A1000**  
**VR-A1500**  
**VR-A2000**  
**VR-A3000**  
**VR-A5000**  
**VR-A8000**  
**VR-A10000**

[www.sven.fi](http://www.sven.fi)



***Congratulations on your purchase of Sven Automatic Voltage Regulator!***

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

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**CONTENTS**

<b>1. BUYER RECOMMENDATIONS .....</b>	<b>16</b>
<b>2. PACKAGE CONTENTS.....</b>	<b>17</b>
<b>3. SAFETY PRECAUTIONS .....</b>	<b>17</b>
<b>4. TECHNICAL DESCRIPTION .....</b>	<b>17</b>
<b>5. INSTALLATION AND OPERATION GUIDE .....</b>	<b>19</b>
<b>6. TROUBLESHOOTING .....</b>	<b>21</b>
<b>7. TECHNICAL SPECIFICATIONS .....</b>	<b>22</b>

**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.
- Shipping and transportation equipment is permitted only in the original container.
- Does not require special conditions for realization.
- Dispose of in accordance with regulations for the disposal of household and computer equipment.

*Technical support is on [www.sven.fi](http://www.sven.fi)*

# Operation Manual

**VR-A500/VR-A1000**  
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**VR-A3000/ VR-A5000**  
**VR-A8000/ VR-A10000**

## 2. PACKAGE CONTENTS

- Automatic Voltage Regulator — 1 pc
- Operation Manual — 1 pc
- Warranty card — 1 pc

## 3. SAFETY PRECAUTIONS

- When the input voltage is higher than 290V, failure of the AVR is possible.
- Do not operate the AVR in the environment with temperatures other than indicated in Technical Specifications.
- The case heats up in operation. Operate the AVR in the environment with good air convection only.
- The socket for connection should be located close to the device and be easily accessible\*.
- In case of emergency, switch off the AVR and unplug the power cord\* immediately.
- Do not open the device or repair it on your own.
- Do not connect household appliances with power load higher than allowed.

⚠ Connection of electric heating devices is forbidden.

\* For models with built-in power cord with plug.



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

## 4. TECHNICAL DESCRIPTION

Automatic Voltage Regulators (AVR) are designed to protect your electronic equipment from unstable mains voltage. Over- and undervoltage and pulse interference prevents electronic equipment from normal operation and can easily damage it. AVR is designed to protect all types of TVs, DVD players/recorders, refrigerators, audio and PC equipment and other home electronic appliances. Its operating principle is based on discrete regulation of input voltage range. AVRs provide standard power supply to connected load within the range of ~230V (-14/+10%) with input voltage fluctuation within ~140-275 V + 3%. The built-in surge protector provides protection from pulse interference.

### Special features

- Microprocessor control
- Enhanced precision of output voltage regulation
- Protection of consuming appliance against high/low voltage
- Protection of AVR against short circuit and overload
- Thermal protection of autotransformer
- Power supply delay function (6 - 180 sec.) after work resumption
- Digital indicator of input/output voltage on the front panel
- Built-in surge protector

**Control Panels**

- ① Working: operation indicator, glows when the regulator is turned on
- ② LED-display
- ③ Regulating: stabilized output voltage LED operation indicator
- ④ Protecting: protection indicator
- ⑤ I/O: input / output voltage display selection button
- ⑥ Delay: loading delay selection button
- ⑦ Power: On/Off switch
- ⑧ Socket
- ⑨ Input: power cable
- ⑩ Circuit Breaker: automatic fuse for overload tripping and short circuits

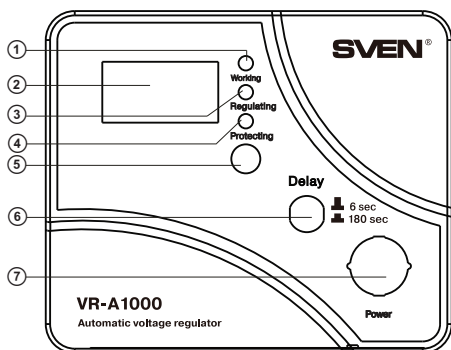


Fig. 1. VR-A500, VR-A1000 front panel

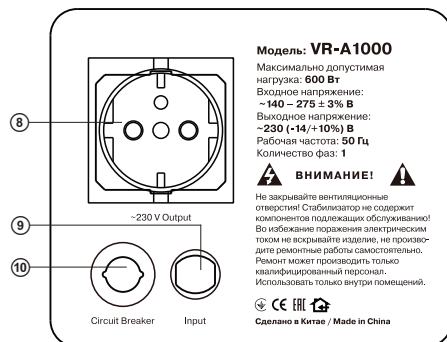


Fig. 2. VR-A500, VR-A1000 rear panel

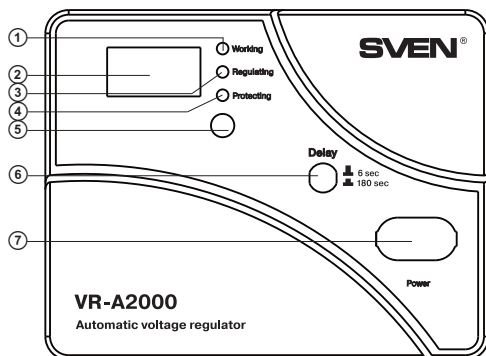


Fig. 3. VR-A1500, VR-A2000 front panel

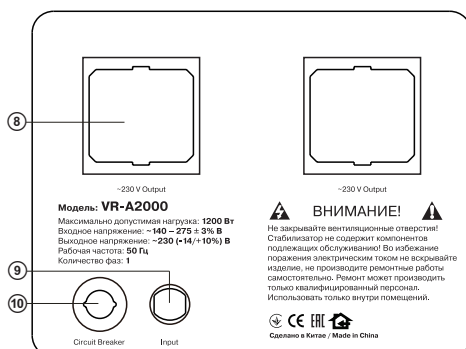


Fig. 4. VR-A1500, VR-A2000 rear panel

# Operation Manual

**VR-A500/VR-A1000  
VR-A1500/ VR-A2000  
VR-A3000/ VR-A5000  
VR-A8000/ VR-A10000**

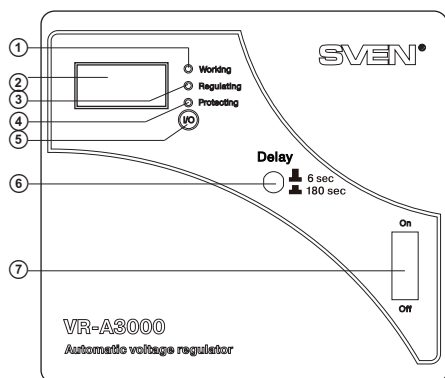


Fig. 5. VR-A3000, VR-A5000,  
VR-A8000, VR-A10000 front panel

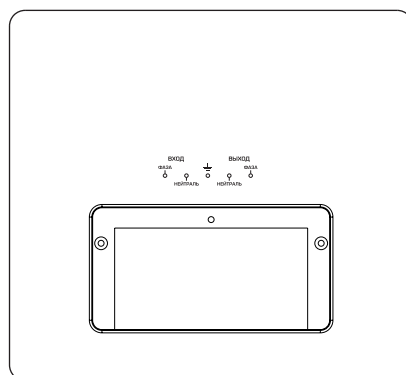


Fig. 6. VR-A3000, VR-A5000 front panel

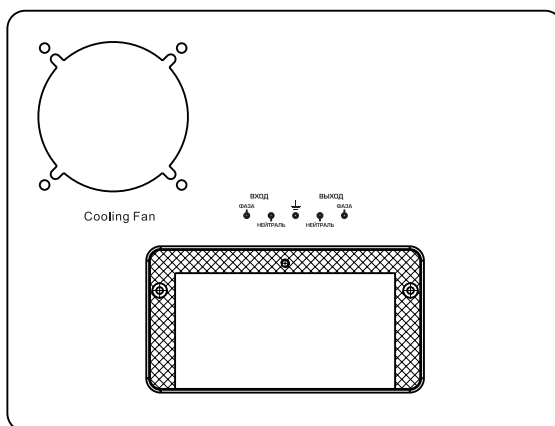


Fig.7. VR-A8000, VR-A10000 rear panel

## 5. INSTALLATION AND OPERATION GUIDE

**Attention!** Before connecting the regulator, make sure that all consuming devices connected to it are off, and stabilizer switch ⑦ is set to «OFF» position.

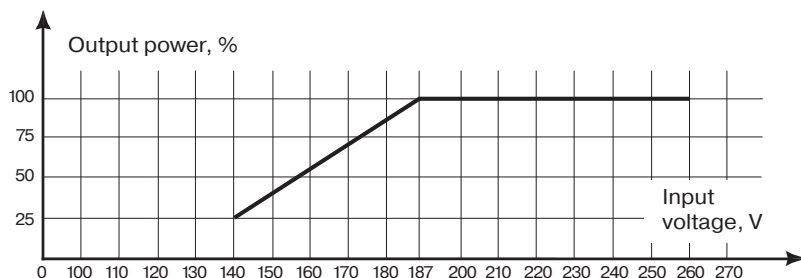


Fig. 7.

**Attention! When choosing an AVR, it is necessary to consider 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 (Fig. 7).**

**Note. Keep in mind this correlation. If the condition stated above is not met, warranty servicing becomes void!**

- Before installing the AVR, please make sure that total starting current of all power consumers is lower than AVR power. Besides, taking into account the starting load and power factor of consumers, it is necessary to apply power margin factor of 1.2–1.5; for such equipment as air conditioners, fridges, etc., it should be 1.5–2.
- Connect the equipment to the power outlet (s) of the stabilizer.
- Connect the AVR to the power network of 230 V.

**Attention! Do not connect the regulator (VR-A3000, VR-A5000, VR-A8000, VR-A10000) to a household outlet. Maximum current circuit breakers should not be less than the current circuit breaker on the front panel of the product.**

• Press button ⑦. When the stabilizer turns on green LED «Working» gets activated. The digital LED display ② starts the countdown to actual issue of connected power load, while the red LED «Protecting» blinks. You can choose delay time of powerload issue by pressing Delay button ⑥ on the front panel. After the pause output voltage value is indicated on the LED display ②. By pressing the «I / O» button select indication of the display input or output voltage to be displayed. Input voltage is displayed via blinking indication.

- When AVR ups or downs voltage, the input voltage indicator will glow with yellow LED «Regulating».
- In case of overload or short circuit the thermal fuse is triggered. After fixing the cause of overload turn on the stabilizer (for low-end models, including protective fuse, pressing the button ⑩ on the rear panel).
- When the stabilizer input voltage is higher than 275 V or below  $140 \text{ V} \pm 3\%$  the regulator disconnects the load. At the same time LED operation indicator displays «H»/«L» sign (high / low input voltage). On the front panel «Protecting» indicator ④ lights up.
- In models with forced cooling, fan operates at a temperature of autotransformer around 65 °C.

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**6. TROUBLESHOOTING**

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
The stabilizer does not work.	1. Switch is not turned on. 2. There is no voltage in the mains socket. 3. Too much load connected. Protection fuse triggered.	1. Turn on the stabilizer. 2. Make sure the input voltage is available. 3. Disconnect part of the load. Turn on the protective fuse.
Stabilizer turned on. Indicator «Protecting» doesn't turn off and there is no output voltage.	Failure of the testing scheme. The AVR is defective.	Switch the AVR off and on again. If the problem persists, address a service center.
Stabilizer disabled load. «Protecting» indicator active. The display shows «L» or «H».	Input voltage is too high or too low.	When the input voltage reaches 140-275 V $\pm$ 3%, the AVR will resume its operation.
Stabilizer disabled load. On the LED displayed «C».	Overheating of the transformer. The stabilizer is overloaded.	Turn off the AVR. Disconnect part of the load. After cooling down turn on the stabilizer.
The stabilizer keeps clicking. «Regulating» indicator active.	The input voltage is very unstable.	It is normal. The AVR is regulating the output voltage.

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

7. TECHNICAL SPECIFICATIONS

<div><div></div><div>Model</div></div> <div>Parameter</div>	VR-A500	VR-A1000	VR-A1500	VR-A2000	VR-A3000	VR-A5000	VR-A8000	VR-A10000
Maximum output power, W	≤300	≤600	≤900	≤1200	≤1800	≤3000	≤4800	≤6000
Fuse, A	5	7	12	15	20	32	50	63
AVR type	Relay Type							
Input voltage, V	~140 – 275 ± 3%							
Input frequency, Hz	50							
Output voltage, V	~230 (- 14/+10%)							
Operating frequency, Hz	50							
Maximum high-frequency interference energy suppressed, Joule.	≤350							
Maximum amperage protection, A	10000/6500							
Input plug, pc	1 × CEE7/7				terminals			
Output socket, pc	1 × CEE7/4		2 × CEE7/4		terminals			
Indicators	Input/output voltage, power on/off, stabilization on/off, overload protection on/off							
Protection	high/low voltage, short circuit; overload, high-frequency interference, built-in thermal protection							
Operating environment	0-40°C, 10-90% relative humidity, %							
Dimensions, mm	230×130×140		255×165×189		317×230×240		424×247×285	
Weight, kg	2.3	2.6	3.8	4.0	7.2	9.2	14.9	17.18

Notes:

- **Technical specifications given in this table are of supplemental character and can't cause any claim.**
- **Technical specifications are subject to change without notice due to improvement of SVEN production.**



## Automatic Voltage Regulator

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Models: **VR-A500, VR-A1000, VR-A1500, VR-A2000, VR-A3000, VR-A5000, VR-A8000, VR-A10000**

Импортер в России: ООО «РЕГАРД», 109052,

РФ, г. Москва, ул. Нижегородская, д. 86, корп. Б.

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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