



## OPERATION MANUAL



AUTOMATIC VOLTAGE  
REGULATOR

**STAB-500 M**

***Congratulations on your purchase of the REAL-EL automatic voltage regulator!***

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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 goods number 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.

## **2. 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 consumer devices against overload, influence of high frequency and impulse interferences.

### 3. 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.real-el.com](http://www.real-el.com)**.
- 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.
- This device is not intended for use by persons (including children) with reduced physical, mental capabilities, lack of experience or knowledge; use of the device by such persons is permitted only under the condition of supervision or instructions for the use of household appliances by persons responsible for their safety.
- Children should be supervised by authorized personnel to exclude their playing with the appliance.
- Do not use the appliance with a damaged power cord or plug, or after handling liquids, falling or any other damage. To avoid electric shock, do not attempt to disassemble or repair the appliance yourself. If necessary, contact a specialized service center.

***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.



***Caution! There is high voltage inside on the insulation elements which can result in electric shock.***

### 4. PACKAGE CONTENTS

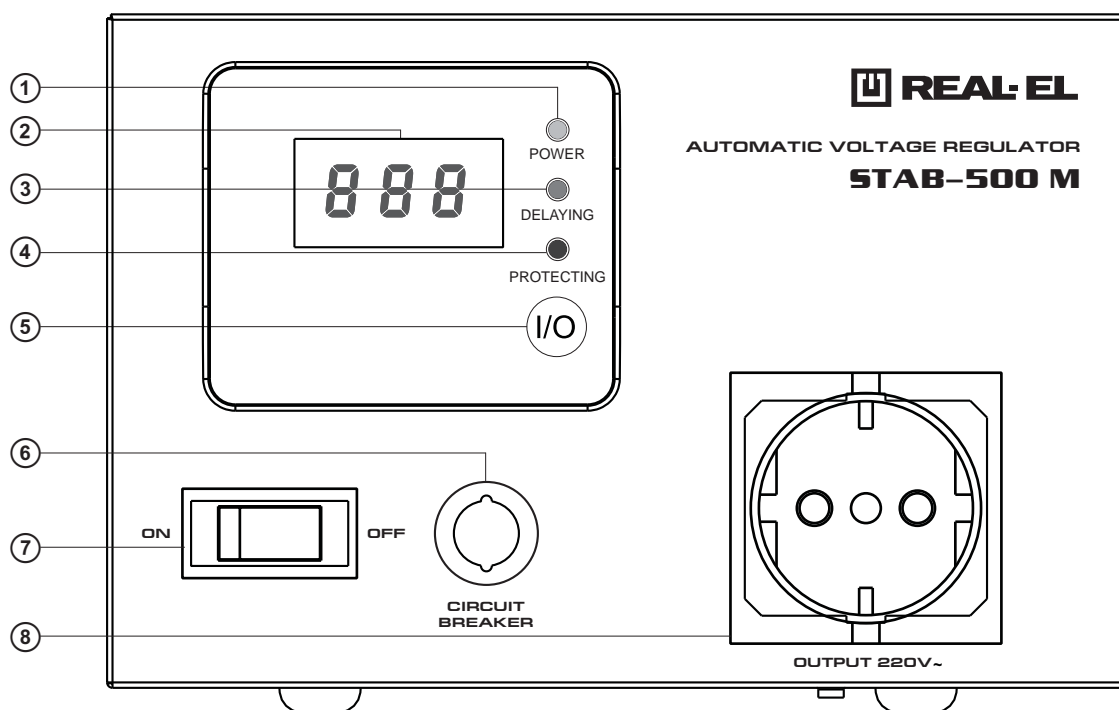
- Automatic voltage regulator – 1 pc
- Operation Manual – 1 pc
- Warranty card – 1 pc

**Features**

- LED Display
- Toroidal transformer with automatic overload protection
- Delay of switching on 180 sec
- Zero-cross switching technology
- Microprocessor control
- Maximum protection against high voltage, low voltage, short circuit, overheating and overload

**5. DESCRIPTION**

- ① GREEN LED (indicator of "Power On")
- ② LED Display: input/output voltage
- ③ YELLOW LED (indicator of "Delaying")
- ④ RED LED (indicator of "Protecting")
- ⑤ Select of "Input Voltage/Output Voltage"
- ⑥ CIRCUIT BREAKER: automatic fuse
- ⑦ AVR power switch
- ⑧ Output socket

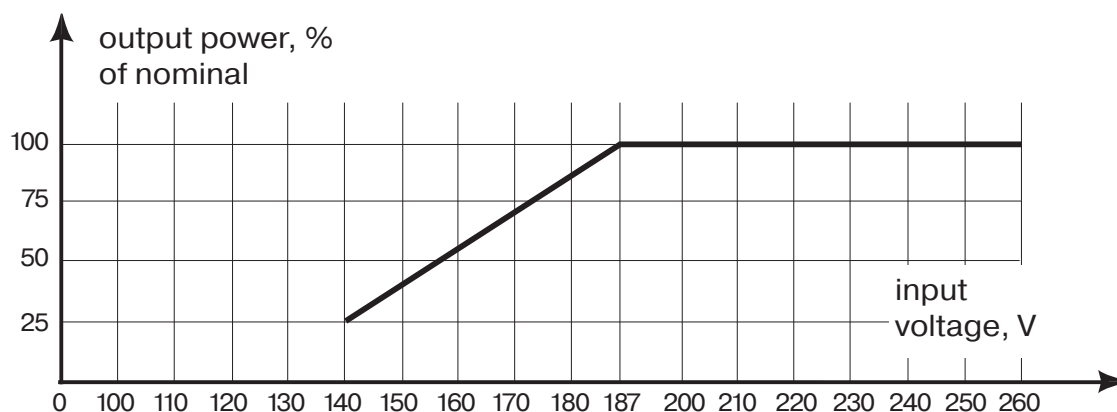


## 6. INSTALLATION

**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. Adhere strictly to such dependence. If the condition stated above is not adhered to, warranty servicing becomes void!**

- Consumer devices should be connected to the AVR when it is off.
- Connect the AVR to 220 V household mains and switch it on using switch ⑦.
- If the AVR operates properly, digital indicator ② will display the voltage on the AVR output, i.e. the output voltage. Connected consumer devices must be turned on after that only.
- If the mains voltage exceeds the operating range (140 – 260 V), the AVR disconnects the load automatically (connected devices).

**Attention! If the AVR is not used for a long time, it is recommended to disconnect the AVR and all consumer devices from the power supply network.**

**7. NOT A FAULT**

Problem	Cause	Explanation
The AVR often clicks.	Relay switching	The phenomenon is normal. The AVR regulates the output voltage.
Input and output voltage indicators are the same within $\sim 230\text{ V} \pm 10\%$ (207-253V)	The input voltage is unstable	Not a fault. According to standard EN 50160:2010, the voltage in the mains should be $230\text{V} \pm 10\%$ , where 10% is the maximum permissible deviation from the standard value! All connected household devices work normally. Regulation of the input voltage by the AVR occurs with deviations from the norm of $\pm 8\%$ (211-248 V).

**8. TROUBLESHOOTING**

Problem	Cause	Solution
The AVR does not start.	<ol style="list-style-type: none"> <li>1. The switch is off.</li> <li>2. There is no voltage in the power supply network.</li> <li>3. The fuse has activated.</li> <li>4. The load connected is too powerful.</li> </ol>	<ol style="list-style-type: none"> <li>1. Press the switch once again.</li> <li>2. Make sure that power supply is available.</li> <li>3. Disconnect the AVR from the power supply and change the fuse.</li> <li>4. Disconnect some load.</li> </ol>
The AVR is turned on, but there is no output voltage.	The AVR is out of order.	If the problem is not eliminated, please address an authorized service center.
The AVR often produces clicking sounds.	Input voltage is very unstable.	It is normal. The AVR regulates output voltage.
The AVR has disconnected the load. Active red indicator.	Input voltage is beyond possible regulation range of 140 – 260 V.	When input voltage is normalized, the AVR turns 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 by yourself.

**9. SPECIFICATIONS**

Maximum load, VA/W	500 / 400
Safety fuse, A	5 A
Input voltage, V/Hz	~140–260 / 50
Output voltage, V/Hz	~220 ± 10 % / 50
Switching time, ms	≤ 10
Short circuit protection	available
Environment temperature, °C	0 – 40
Humidity, %	up to 90
Dimensions, mm	170 × 125 × 190
Weight, kg	1.9

## 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 TM REAL-EL production.



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