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| Research Article

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Automatic Reservoir Equipment

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Annotation In this article, information was provided about automatic reserve input devices and their types, effects on electrical equipment. In this article, electric power and the importance of automatic power switch (AVR) for power supply, which is widely used for power supply. For example, if the power supply is turned off, the AVR will automatically restore power consumption. Automatic power-up according to AVR algorithm and other parameters. It plays an important role in the monitoring process and its use. This system can also operate via frequency or amperage readings.

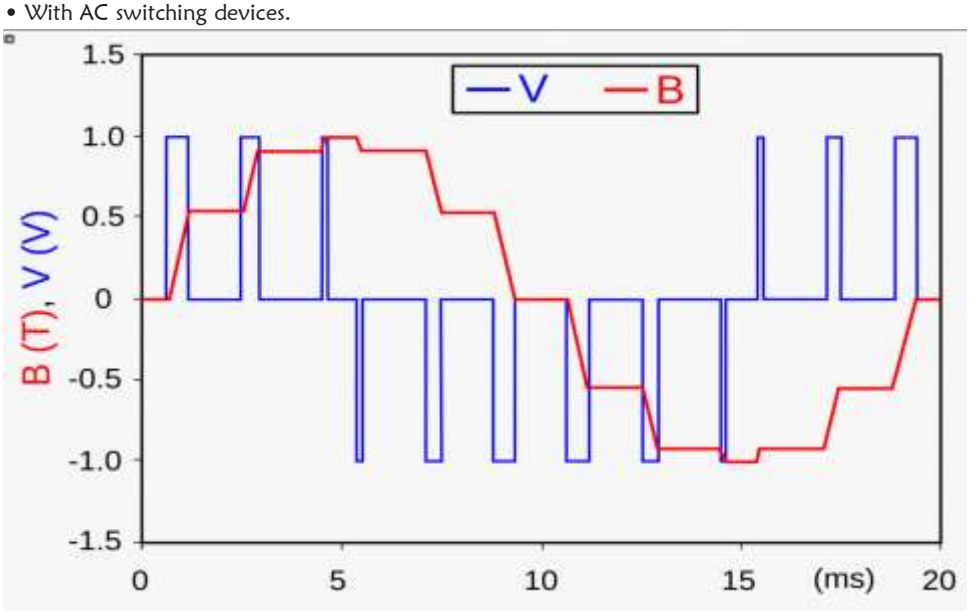
Keywords: : *Energy, energy efficient, alternative energy sources, wind generator, solar panels, alternative energy system.*

INTRODUCTION

Backup Auto Boot - Auto boot device for disabled primary. A wide range of additional options for providing energy consumers with uninterrupted electricity. Automatic power switch (ATS) is a powered automatic device that automatically controls the power supply or turns on a switch that is a network. Automatic backup is part of network automation (relay protection and automation) of energy facilities. An automatic backup device with microprocessor control is designed to transfer the load from the main input to the backup in the event of an accident.

Standard equipment for transferring power from one source to another is divided into:

• With AC switching devices.



- By switching DC sources.
- With alternating current relay-contact switching devices (IEC 60947-6-1)

Automatic power recovery shall be provided for:

- Power receivers of the first category - supplied with electricity from two independent mutually redundant power sources;
- A special group of power receivers of the first category - supplied with electricity from three independent mutually redundant power sources.

AVR is divided into:

- Single acting AVR. In such schemes, there is one working part of the supply network and one reserve. In case of loss of power to the working part, the ATS connects the spare part.
- Bidirectional AVR. In this scheme, each of the two lines can be active or spare.
- AVR with recovery. If voltage reappears at the disconnected input, it is turned on after a time delay and the sectional switch is turned off. If the short-term parallel operation of two sources is not allowed, first the sectional switch is turned off, and then the input is turned on. The circuit is back to its original state.
- AVR without recovery..

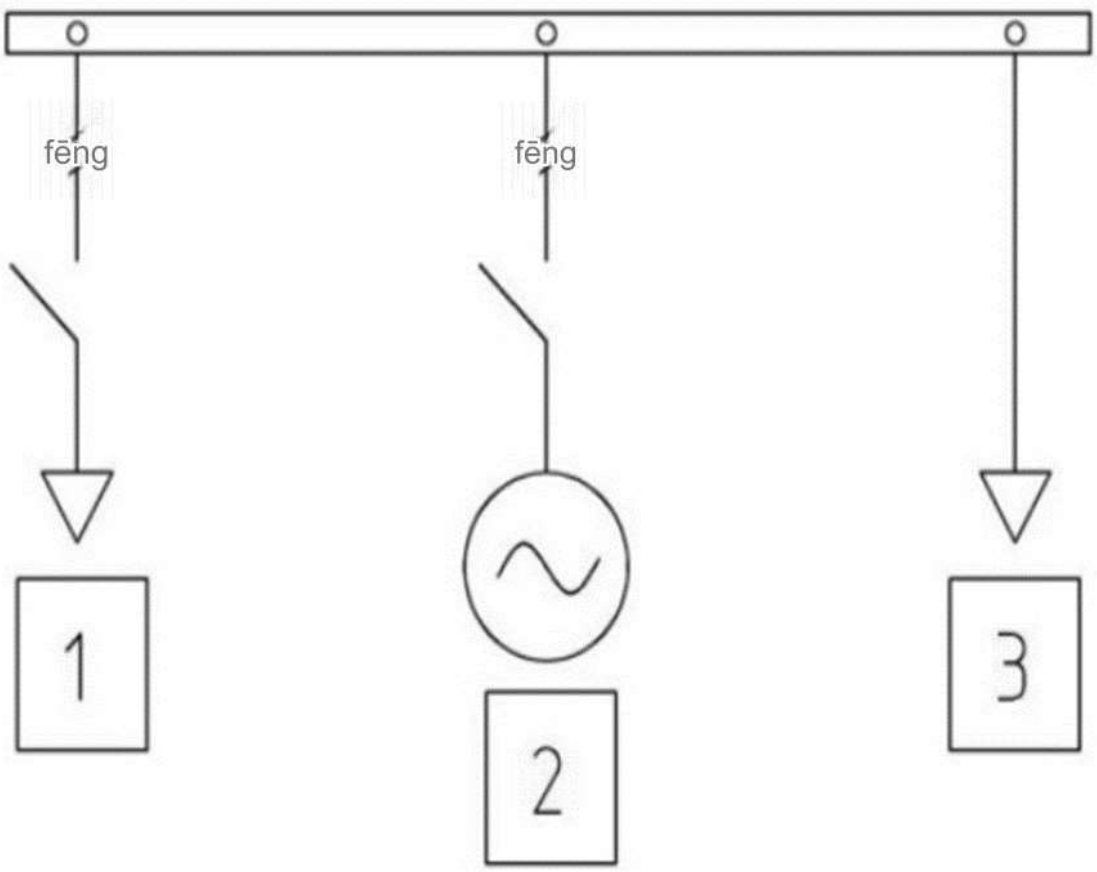
Figure 1. Overview of

AVR.

AVR should work once. This requirement is due to the fact that multiple inputs of backup sources are not allowed in an unresolved short-circuit system. The automatic transfer switch must always operate during a power failure on consumer buses, regardless of the cause. While the arc protection circuit is operating, the ATS can be disabled to reduce short circuit damage. In some cases, a delay in replacing the ATS is required. For example, when starting powerful motors on the consumer side, the voltage drop in the ATS circuit should not be taken into account. Automatic input of backup power (hereinafter ABP) is a device for restoring power to electricity consumers by automatically connecting backup power when a working power source is turned off. The AVR algorithm is activated based on the information received from the control elements. Monitoring is mainly done by voltage, but can also be done by frequency or current.

Types of automatic input of backup power:

1- Main power source;
2- Backup power source;
3 - Download.



If there is no voltage in the network, the backup supply is activated. The battery, generator and backup power line serve as an additional power source. An AVR setup is used to quickly implement additional hardware. To switch to emergency mode, the device must monitor the voltage applied to the inputs and the load current.

The installation is classified according to the following criteria:

- Number of spare parts, two or more;
- Network type; production of three-phase or single-phase power supply units;
- Voltage class from standard to high voltage;
- Variable load power;
- Connection time.

Technical characteristics

Characteristic	Value
Rated operating voltage	220/380 V, 50 Gts
The upper limit of the emergency voltage value (phase) "U peak" min/max	230/270 V
Lower limit of emergency value of voltage (phase) "U lower" min/max	150/200 V
Hysteresis of the lower limit "DUn" min/max	5/30 V
Phase distortion "U high-U low" min/max	10/100 V
Switching contact current (AC1 250 V) max	7A
Total dimensions of the block	71x90x60 mm
Weight, not more	0,3 kg

Warranty period - 2 years.

AVR checks for:

- The presence of malfunctions in the workplace.
- Main access point enabled.
- Output of the backup power supply to the required voltage.

In facilities with the ability to operate autonomously, automatic backup transfer is usually used together for the main power supply network and backup power devices: generators and batteries.

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