

Legat 35

AC VOLTAGE STABILIZER



OPERATING MANUAL

Quality control system on the development and production complies with requirements ISO 9001:2015

Before using the unit, study the Operating Manual carefully

Before connecting unit to electrical mains please hold the device within two hours at operational conditions.

Do not use abrasive materials or organic compounds for cleansing the unit (alcohol, benzene. solvents, etc.)



IT IS PROHIBITED TO OPEN UP AND REPAIR THE UNIT ON ONES OWN.

The device components main remain under the mains voltage.



IT IS PROHIBITED TO OPEN AND REPAIR THE PROTECTED EQUIPMENT, IF IT IS CONNECTED TO THE OUTPUT CONTACTS OF THE UNIT.

This unit is safe for use in case of compliance with operating rules.

- connection terminal: input (alternating current), protective grounding, output (load).

CAUTION! The input should be connected using a wire at least 2.5 mm² in section; the output and grounding – a wire at least 1.5 mm² in section. Connection phasing in accordance with terminal marking.

1.3.2. When the stabilizer is switched on, the digital voltage indicator shows the input voltage, stabilizer load percentage and output pressure (updating the values once per 3 seconds) on the appropriate indicators. The load is switched on with a user-defined delay (factory setting – 3 seconds).

1.3.3. In case of outlet overload, the overload indicator is lit. If appliances with high starting currents are used (asynchronous engines, TV kinescope demagnetizing systems, high-power incandescent lamps, etc.), the output voltage may be lowered below the design values during the start phase. This function allows to lower high starting currents and prevent switching off of the stabilizer output.

1.3.4. In case of a load surge exceeding 100%, the load will be switched off according to the power-time linear correlation. In case of a short circuit (SC), the integrated SC-prevention system is triggered, the load is switched off, and the SC indicator is lit. To switch the load back on, switch the stabilizer off and on again using the automatic switch on the front panel, after switching off some of the electric appliances to lower the total consumed power to the acceptable level, or while eliminating the reason for the SC.

1.3.5. If the input voltage is outside the working voltage range, the load will be switched off, and the input emergency indicator will be lit. The stabilizer will switch the load back on automatically after the input voltage is restored (with a user-defined delay).

1.3.6. The stabilizer has overheating protection. In case of overheating, the load is switched off, and the overheating emergency indicator starts blinking. When the unit has cooled off, the load is switched back on, with the set delay.

1.3.7. Table 1 shows the correlation between the possible emergencies and emergency indicators, and methods for troubleshooting.

Table 1

Emergency	Emergency indicator			Troubleshooting
	Input	Short circuit/ overheating	Overload	
Overload	-	-	+	Lower total load power
Output CS	-	+	-	Eliminate CS, switch stabilizer off and on
Input voltage: U _{in} < U _{in min} ; U _{in} > U _{in max}	+	-	-	Stabilizer not usable in current network
Temperature emergency	-	+(blinking)	-	Disconnect stabilizer from network, check fan operation

1.4 PACKAGE CONTENTS

- Legat 35** single-phase voltage stabilizer.....1 pc.
- Operating manual 1 pc.
- Cable gland PG-11.....2 pc.
- Packing..... 1 pc.

2. SUITABLE APPLICATION

2.1. PREPARING STABILIZER FOR USE

Before connecting to the stabilizer loading it is necessary:

- external inspection of the stabilizer in order to identify availability of possible housing and power cable damages;
- set the circuit breaker in lower (OFF) position;
- **important! Network socket must be grounded;**
- **connect the stabilizer when de-energized cable network;**
- to remove the right side cover;
- set the Cable gland PG-11 (2 pc.) at the side cover;
- set input and output cables (network and load) via cable glands;

- connect the cable network and load cable according to marking of stabilizer terminal block;
- to fix a side cover of the stabilizer by means of screws;
- screw of cable glands tightly from the direction of cable.

ATTENTION! Legat-35 stabilizer is a condensive load (of about 20 μ F) for the supply network. Using an isolated gasoline/diesel generator may create unwanted resonance between the generator winding with the above condensive load, causing increase of output voltage from a load-free generator and, consequently, the input voltage for the stabilizer (as displayed on the Uin screen).

To limit the voltage increase caused by the resonance to 10÷20%, ensure that the total generator capacity is at least 3 times the stabilizer's capacity.

2.2. SETUP

2.2.1. Adjustments

Value of setting parameters indicated at the digital voltage indicator.

Economy mode. To set up the economy mode, set the bottom and top values of the output voltage range when the output voltage equals input voltage.

To set the bottom value of the range, press the bottom Uout button once. The bottom button will be lit, indicating that the bottom range value editing mode is active. The value can be edited using the top and bottom buttons. To save the value and leave the menu, wait 2 seconds.

To set the top range value, repeat the above with the top button.

When the top and bottom values of the range are the same, the stabilizer is set to **VIP-mode**.

Turn-on time of stabilizer. To change the stabilizer switch on time, press both buttons Uout simultaneously and set the required time in seconds after the time regulation mode is activated. The stabilizer will leave the setup mode automatically, 3 seconds after any of the buttons has been last pressed.

When stabilizer work with input voltage within the limits $U_n \pm 5V$,

where U_n – output voltage setting, typical clicks can be audible (it electromagnetic relays are switched). It is possible to decreasing number of relay actuatings by reduction of accuracy (no more $\pm 4\%$).

For that press both Uout buttons simultaneously and hold theirs for 3 seconds.

The digital indicator will display **Uxx**,

where **xx** – it's possible deviation of output voltage from setting voltage

The stabilizer will leave the setup mode automatically, 5 seconds after any of the buttons has been last pressed.

CAUTION! No objects can be placed on the top cover of the stabilizer, as they may block the fan's air flow.

2.3. SAFETY MEASURES

When choosing a stabilizer, bear in mind the total consumed power load. The stabilizer contains potentially lethal voltage.

The following is forbidden:

- dismantling the stabilizer;
- connect and use an ungrounded stabilizer;
- use the stabilizer if any parts of the housing are deformed in a way that causes them to come in contact with conductive parts;
- use the stabilizer if the switch is malfunctioning, or in the presence of smoke or a smell typical for burning insulation;
- store or use the stabilizer in areas with a chemically active or explosive environment.

Do not use the stabilizer in corrosive environments with the air containing acids, alkalis, oils, etc.

Do not allow any water on the contacts of the connecting blocks or inner elements of the unit.

Stabilizer complies with requirements of:

EN 60947-1; EN 60947-6-2; EN 55011.

The harmful matters in unallowable content are not present.

3. MAINTENANCE

ATTENTION! BEFORE ANY MAINTENANCE WORKS, DISCONNECT THE POWER SUPPLY PLUG.

For reliable stabilizer operation, dedusted the fan at least once per six months and vacuum-blow the entire stabilizer at least once per year.

To dedust the fan, remove the lid on the base side. Before vacuum-blowing the stabilizer, remove the lid, the top grate and the side panel to gain access to the internal cavity of the device.

4. TRANSPORTATION, STORAGE AND OPERATIONAL CONDITIONS

The stabilizer can be transported by any transport, while kept vertically.

The stabilizer should be stored at temperatures between -40° and +60°C, with relative air humidity not exceeding 80%.

The storage area should be free of dust, and acid or alkali fumes that cause corrosion.

5. WARRANTIES

Warranty period is 3 years upon the day of sale.

The manufacturer shall repair the unit, in the compliance with the operating manual by the user, within the warranty period.

Legat 35 is not subject to the warranty service in the following cases:

- expiry of the warranty period;
- availability of mechanical damages;
- attempts to open and repair;
- traces of moisture attack or in the presence of foreign items inside the unit;
- damage is caused by electric current or voltage in excess to the permissible values as indicated in the Operating manual.

Warranty service is provided in the place of purchase Post-warranty service shall be provided by the manufacturer.

The manufacturer's warranty does not cover compensation for direct or indirect losses associated with the unit transportation to the place of purchase or manufacturer's plant.

Earnest request: indicate the reason for return in the notice of faults field at the return of the device or in case of submitting for warranty service or post-warranty service.

6. ACCEPTANCE CERTIFICATE

Legat 35 stabilizer was manufactured and accepted according to the requirements of the current technical specifications and deemed fit for use.

SEAL

Chief of Quality Department

Production date

Sale date _____

7 DATA ON CLAIMS

Company is grateful to you for the information about the quality of the product and suggestions for its operation.



Should a need arise for any questions or clarifications please contact the Manufacturer as follows:

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Important Factors for Choice of Stabilizer

When choosing a stabilizer, bear in mind the total load power you plan to connect to it. Total power is the entire power consumed by the electric appliance, consisting of the active and reactive power (depending on the load type). Active power is always indicated in watts (W), while total power – in volt-amperes (VA). Consumer devices have both the active and reactive power components. The total power (VA) and reactive power (W) are linked by the $\cos \varphi$ ratio.

Active load. All consumed energy is transformed into heat. For some appliances, this is the main power component. Examples: incandescent lamps, heaters, electric ovens, irons, etc.

Reactive load. The rest. The reactive power component gives no useful yield, but serves to create magnetic fields in inductive receiver, continuously circulating between the source and the consumer.

High starting currents. Any electric engine consumes several times more energy during startup compared to normal operation. When using an appliance with an electric engine as the main power consumer (e.g., submersible pump, refrigerator), multiply its nominal operating power by 3 to avoid stabilizer overload during startup.

Based on the above, it is recommended to choose a stabilizer model with a 25% spare capacity. This will allow the stabilizer to work without overloading, therefore extending its useful life.