OUR MERIT - SAFE VOLTAGE

Instant-Action Double-Conversion

Voltage Stabilizer

QUANT

QUANT-5,5
QUANT-7
QUANT-9
QUANT-11

Made in Ukraine

User Manual

ТУ У 27.1-22049061-001:2021

Dear customer, thank you for choosing our product. We assure you of the proper quality of our goods.

The QUANT brand is a manufacturer of a Instant-Action Double-Conversion Voltage Stabilizer. Instant-Action occurs within up to 50 microseconds. Quant products are specifically designed to meet the users' need for high-quality power supply in situations where centralized electricity does not meet its actual requirements.

Quant is a stabilizer with a set of protective functions. For instance, it features a unique Consumer Impulse Protection function throughout its entire operational life! Quant represents a new class of products.

The "QUANT" project was created on 24.05.2019 by the development group "Silovolt" (who developed the "Etalon" model range for "VOLTER®") and several manufacturing companies on a permanent and contractual basis.

It all began with the joint development of the technical task (TT), which incorporated all the best aspects, one might say - all the dreams and expectations of the people about the "ideal outlet in the house" or the "ideal stabilizer." Approximately two years before that, the developers improved the necessary stabilizer parameters without sacrificing quality (mainly thanks to fresh solutions), ensuring manufacturability through a more sophisticated design, software, and reduced manual labor.

Therefore, the development of QUANT inverter stabilizers has been completely reimagined, from circuitry, algorithms, software, and components, to design and construction. This allowed for not only technological advancements but also improvements across almost all indicators, from stabilization quality to load protection and the device's own protection.

Simultaneously, the dimensions and weight of the product have been reduced. It will be even easier for users to place QUANT in their homes, which is excellent. Now, the stabilizer can be securely mounted even on a drywall (enhanced suspension contributes to this as well).

QUANT stabilizers do not compromise even in their external appearance – the casing is robust and substantial (given its compact size, of course), featuring an original design and a "velvet metallic" polymer coating. In essence, we did not sacrifice any of the characteristics of the "premium segment" of the market.

Thus, in the process of manufacturing double-conversion protected stabilizers for the mass market, none of the important system characteristics were overlooked!

The "Quant" trademark stands for quality. We are satisfied when you are satisfied.

We strive for excellence - with a high-quality product, friendly service, and prompt delivery!

With respect, LLC RPF QUANT-INGINEERING

USER MANUAL

Instant-Action Double-Conversion

Voltage Stabilizer

QUANT

Single-Phase

Discover everything about **QUANT** stabilizers on our video

https://www.youtube.com/watch?v=xgZz9Y3nHyc

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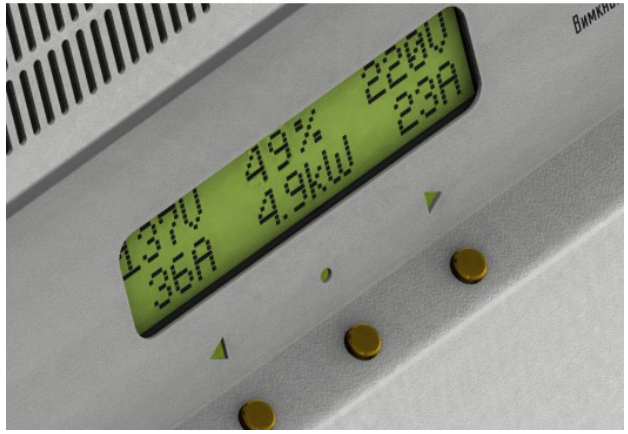
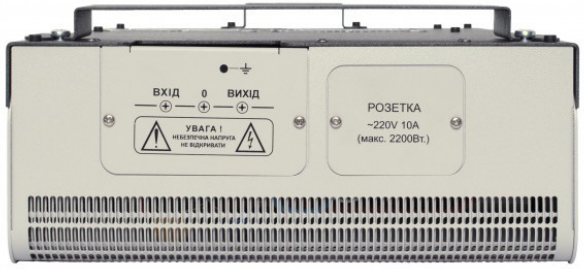
QUANT


QUANT


Вимкн
220V
23A
49%
0.9KW
137V
36A


ВХІД
0
ВИХІД
УВАГА !
РОЗЕТКА
~220V 10A
(макс. 2200Вт.)

1. Safety Measures

Before turning on the stabilizer, read the user manual. Do not attempt to repair or service the stabilizer on your own.

1.1. Electrical Safety

It is prohibited to:

- Operate the device with damaged insulation of the wiring.
- Operate the device without proper grounding.
- Touch bare wires and electrical connections with hands.
- Operate the stabilizer in the presence of direct exposure to liquids (rain, snow, etc.) and in conditions of high humidity.

The voltage stabilizer is sold in a condition that complies with safety regulations. Do not disassemble the stabilizer or remove protective elements of the casing.

1.2. Fire Safety

Do not use the stabilizer near flammable materials. Do not block ventilation openings, and avoid operating the stabilizer in confined spaces (box, cabinet) with insufficient ventilation. Prevent direct sunlight from reaching the stabilizer.

1.3. General Safety Measures

Keep children away from the stabilizer, even when it is not in operation.

Do not cover the stabilizer with foreign objects during operation (this may lead to emergencies or ignition of foreign objects).

Do not allow foreign objects to enter the inside of the stabilizer.

It is prohibited to connect a continuous load that exceeds the maximum load of the voltage stabilizer.

2. Purpose

The AC voltage stabilizer is designed to provide safe, stable voltage of 220V/230V from the grid with unsatisfactory quality. It is also recommended for use in cases where there are increased requirements for the quality and safety of the electrical network.

One of the distinguishing features of QUANT stabilizers is the delivery of a uniform voltage to the load without impulse surges or drops. If there are hazardous spikes or voltage jumps in the network, the preemptive protection, if necessary, disconnects the load and the stabilizer before the surge impulse reaches the load. Most dangerous situations are resolved without disconnecting the stabilizer, ensuring that the load receives clean, filtered voltage of 220V (230V), 50Hz. The consumer does not notice problems that could pose a risk to their electrical equipment.

The stabilizer is designed for continuous 24-hour operation in heated premises at nominal power.

3. Storage and Transportation Rules

Conditions for storing the stabilizer:

- Temperature from 0°C to +40°C,
- Relative humidity up to 80% at a temperature of +25°C.

The stabilizer, when packaged, can be transported by any type of enclosed transport in accordance with the rules of transportation for that type of transport.

It is prohibited to transport the device in a disassembled state. Transportation should be carried out in packaging that prevents mechanical damage, direct exposure of moisture, dust, and dirt to the stabilizer.

Transportation of the stabilizer by any means of transport is permitted. During loading and unloading, it is necessary to adhere to the requirements specified by warning signs on the transport packaging.

Transportation by aviation must be carried out in a sealed compartment. Avoid moisture exposure to the packaging.

The stabilizer should be stored in a heated and ventilated room, protected from atmospheric precipitation, in the manufacturer's packaging.

In extreme temperature conditions, transportation and storage of stabilizers should not exceed 6 hours.

4. Technical Specifications

*More detailed information in section 4.1.

Parameters	Quant-5.5	Quant-7	Quant-9	Quant-11
Regulation type	Inverter with advanced protection			
Number of steps	There are no steps. Smooth adjustment.			
Output power at 220V, kW	5.5	7	8.8	8.8
Output power at 110V, kW *1	2.75	3.5	4.4	4.4
Output voltage, V	220 or 230			
Nominal input current, A	25	32	40	40
Overload current and short circuit, A *2	50	60	80	80
Off time with load >125%, sec.	10			
Off time with load >150% - short circuit, sec.	1			
Regulator accuracy, %	0,5			
Input voltage range, V	90-350			
Regulation range, V	90-350			
Operating frequency range, Hz	45-50			
Operating temperature range, °C	+5 ...+40			
Humidity range, %	40...80			
Delay before switching on, sec.	6			
Mounting method	Hinged			
Protection index	IP20			
Cooling	Forced. Low-noise.			
Number of phases	1			
Generator compatibility *3	No			
Reactive load current compensator function	Yes			
Current limiting function *4	Yes			
Power measurement	Yes			
Mechanical Bypass	Yes			
Display	Yes			
Output socket 220/230 V	Yes			
Color	Light grey			
Power consumption, W	15	16	17	21
Fan noise at 100% load, dB *5	60			
Dimensions, mm., HxWxD	435x250x125	435x250x125	435x250x125	435x250x125
Net weight, kg	11	11	11	15
Warranty, months	60			
Country of origin	Ukraine, Zhytomyr			
Goods manufacturer	LLC RPF QUANT-INGINEERING			

4.1. Extended Specifications and Technical Characteristics

*1. Reduction of the maximum output power occurs in a percentage ratio to 220V. At 220V and above, the power is 100%, below 220V is calculated using the formula [input_voltage / 220 * stabilizer_power = maximum_output_power].

*2. The Quant voltage stabilizer supports overload function to provide starting currents for motors, pumps, etc., and also monitors the state of short circuits. The specification for the overload mode operating time is indicated in the technical characteristics.

*3. Connecting a generator directly to the stabilizer input is prohibited, as it can damage both the generator and the stabilizer. The use of a generator and stabilizer is allowed only with the use of an integration unit with the generator. More details are described on the website in the article "Quant and Backup Power. Integration Unit with a Generator."

*4. The Quant voltage stabilizer limits the input and output currents, taking into account double overload. In case the indicator exceeds 200% of the nominal power, the stabilizer will shut off after 1 second.

Thanks to the limiting function, the stabilizer monitors short circuits on the line and prevents uncontrolled power consumption. More details are described in section 06 "Device and Operating Principle."

*5. Fan noise measurements were taken at a distance of 30 cm from the stabilizer and at 100% load, ambient temperature: 25 °C.

⚠ **ATTENTION!** If the input network lacks sufficient power and cannot supply the necessary current to the stabilizer, it will start to settle. If the voltage at the input drops below 90V, the stabilizer will shut off due to low voltage. This is called "network sag" and is NOT a malfunction of the device.

5. Supply Kit

The supply kit includes:

- voltage stabilizer – 1 pcs.
- mounting bar (installed, removable) - 1 pcs.
- stabilizer operational manual – 1 pcs.
- individual transport packaging – 1 pcs.

6. Device and Its Operating Principle

The stabilizer employs the principle of double voltage conversion with the ability to return it to the grid, for example, when working with solar power stations. The power part uses HF-PWM assembled on fast IGBT 5th generation switches, utilizes second-generation DSP algorithms of inverter-type stabilizers, implemented on two STM32 processors, and incorporates specially developed electromagnetic elements for energy conversion and output voltage filtering, as well as interference filtering from the grid.

The input voltage from the grid enters through the input circuit breaker to the stabilizer's input, powering the low-power auxiliary power source and the motherboard, as well as the indicator circuit initially.

The stabilizer starts counting down 6 seconds before supplying voltage to the load, and within this time frame:

- It undergoes several cycles of complete self-testing and factory calibration checks.
- Verifies the input voltage, whether it is within permissible limits, has the correct frequency with the required deviation from the nominal, and more.
- Checks whether the user is holding the control button when turning on to enter the settings.
- Displays the last time it was turned off.

After this, it attempts to supply voltage to the load. If there is a short circuit (short circuit) in the load or the load consumes more current than specified by the nominal value - it provides an overload current to the load for a short time (twice the multiple), then re-enters self-testing mode, and after that, it tries to power the load again. This process is repeated until a successful start (current does not exceed the norm, voltage is normal) - it starts operating, indicating it on the display and switching to the default screen mode - input voltage on the left and input current, on the right nominal output voltage and output current, in the center at the top - percentage of load, in the center at the bottom - current output power. The percentage of load may increase at the same load if the input voltage has changed. The QUANT stabilizer guarantees delivering power not less than what the network can provide at the given input voltage (P=I*U).

The stabilizer consists of two main clearly defined functional parts, united in one case, which always work together:

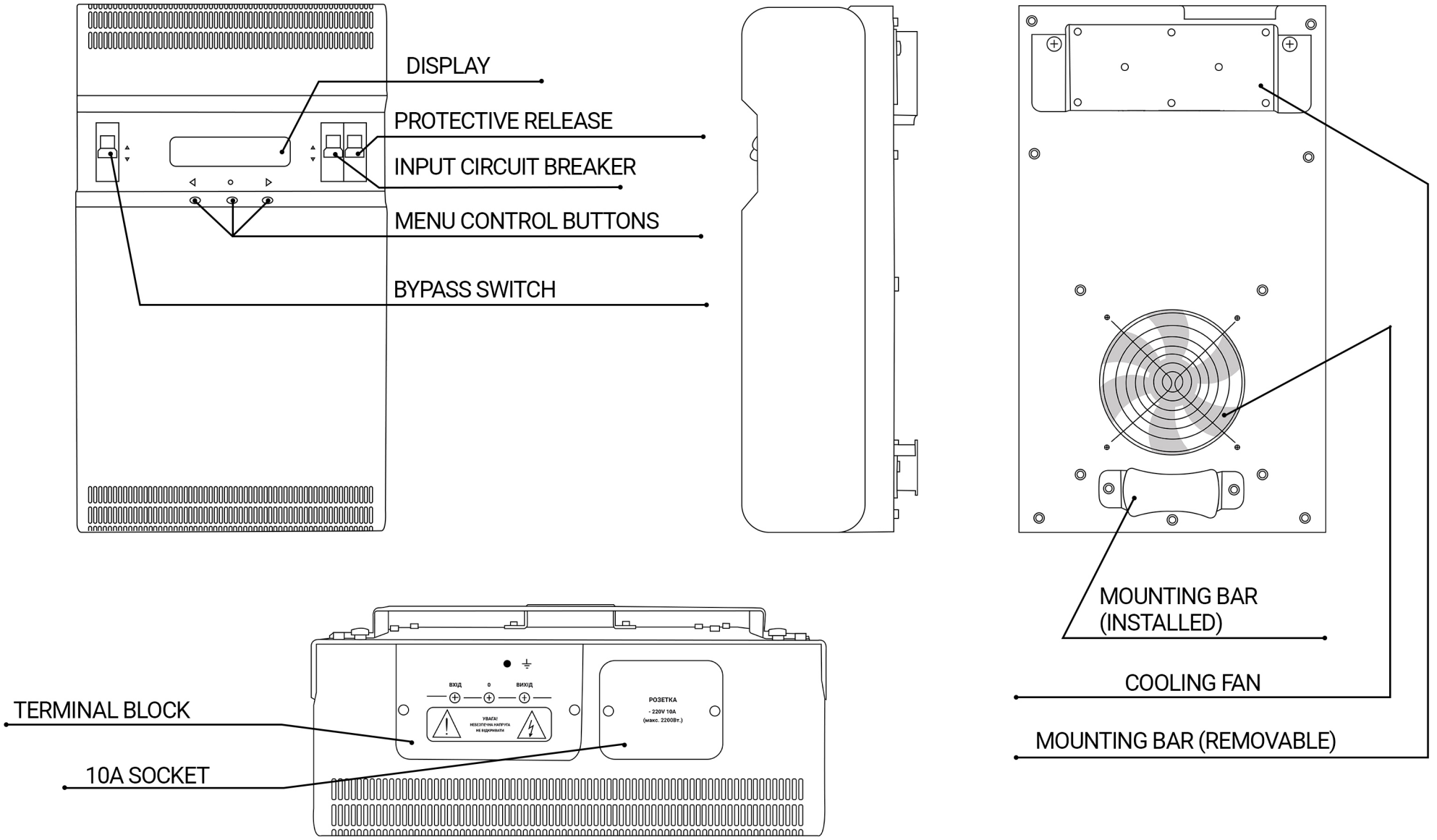
- The stabilizer itself, its input and output filters, compensator for reactive power - for normal operation, which includes any spikes and drops in voltage within the permissible range of the device stabilization.
- The protection module from overvoltages, both continuous and pulse, for reliable protection of the load and stabilization block from dangerous overvoltages (for example, in case of neutral wire break or phase-to-neutral short circuit) or pulse overvoltages, including a

unique, non-wearing-out protection against switching overvoltages, unlike traditional "UPZP", for the entire service life of the stabilizer and is capable of handling hundreds and thousands of daily switches of powerful loads in the input network of the stabilizer (for example, if there is a workshop with powerful machines, transformer welding machines, etc.) that create pulse surges in the network.

The protection module copes with pulses of switching overvoltages in long overhead lines with a large self-inductance, easily suppressing overvoltage pulses with an amplitude of 4kV and above, with a current in the pulse up to 250A and a duration of more than 30ms, which is multiple times higher than the regulatory requirements for power quality in terms of switching overvoltages.

⚠ **ATTENTION!** The stabilizer's case during operation may exceed the ambient temperature by 5°C, which is normal for the device's operation.

STABILIZER DIAGRAM



7. Installation and Connection

If you purchase the stabilizer from authorized dealers, you will be offered paid or free (bonus) installation and connection of the new stabilizer.

Otherwise, use the services of a qualified electrician.

1. Unpack the stabilizer. If it was transported in cold weather or stored in a cold room, let it sit for at least 5 hours in a room with room temperature to equalize the temperature and dry any possible condensation.

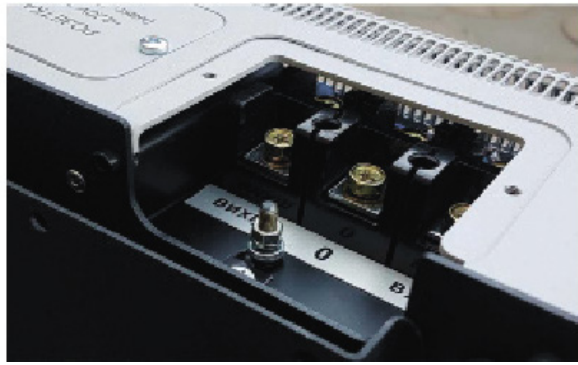
2. Prepare the placement location. The primary placement of the stabilizer is vertical suspension on the wall. To do this, the detachable (upper) suspension bracket needs to be attached to the wall. Do not install it on walls made of flammable materials.

⚠ **ATTENTION!** Before attaching the bracket, make sure there are no power lines passing through the attachment point. It is advisable to use special equipment or check the building's plan. If you are unsure about the absence of power lines in this location, change the installation location!

3. Disconnect the input circuit breaker at the distribution panel! There should be no voltage on the input phase during the connection and installation of the stabilizer. Check only with specialized tools, such as a multimeter in "phase search" mode or an indicator screwdriver.

Do not check for the presence of a phase with bare hands! This is dangerous for your health and can lead to serious injuries or a fatal accident.

4. Unscrew the two screws and remove the cover that covers the connection terminals.



5. Clean and equip the end of the protective grounding wire with a connector, and secure it with a nut on the screw next to the terminal in the terminal compartment.

6. Clean and equip the ends of three wires - the phase of the power supply network, the neutral of the power supply network (which is also the output neutral), and the load output. The length of the wires should be as short as possible and, if possible, not exceed one and a half meters.

⚠ **ATTENTION!** The cross-sectional area of the wire is perhaps the most crucial criterion for its selection. The cross-section determines the amount of current that can safely flow for a certain period, so choose the wire gauge according to the current and power values of the stabilizer.

7. Unscrew the bolts from the terminal block, attach the wires according to the markings, wrap and tighten the bolts, check the tightness of the fastening. It is not advisable to use a powerful (end) wrench, as it can strip the thread in the terminal block. It is recommended to use a cross-head screwdriver. Be sure to use the spring washers "star" available on the screws/ bolts of the terminal block - this will ensure the strength of the connection and protect against overheating.

8. Hang the stabilizer carefully so that the suspension screws on the rear panel enter the slots of the suspension bracket. Check the accuracy of fitting by trying to move the stabilizer (holding it to prevent it from falling) left and right and gently pulling down.

9. Connect the input and output wires of the stabilizer according to their markings.

⚠ **ATTENTION!** It is crucial not to confuse the phase and neutral during the connection of the stabilizer. Use an indicator to identify the phase and neutral in the network.

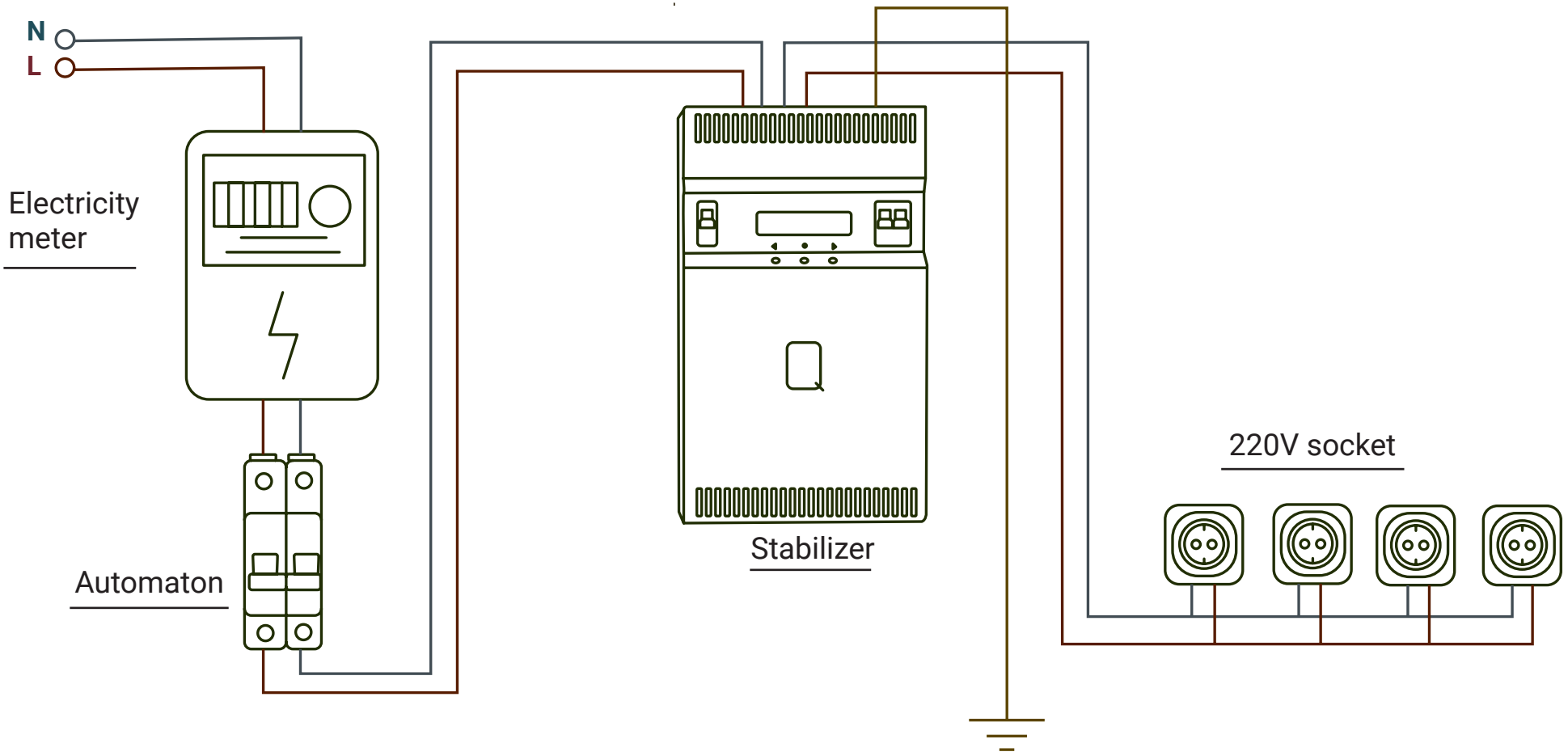
10. Check if both circuit breakers on the front panel of the stabilizer are turned off, if necessary, disconnect them from the network.

11. The work is completed; you can supply voltage with the input circuit breaker, after which turn on the stabilizer by switching the switch of the circuit breaker to the upper position.

⚠ **ATTENTION!** If it is necessary to move the voltage stabilizer in the installation locations or between different rooms, disconnect it completely from the network!

⚠ **ATTENTION!** When interfering with the internal structure of the device, electric shock is possible, and the stabilizer itself may become inoperab

VOLTAGE STABILIZER INSTALLATION CHART



8. Operation of the Quant Stabilizer

The stabilizer ensures:

- Stabilization of the output voltage at 220V ± 0.5% with a change in input voltage from 90V to 350V, at a frequency of 50 ± 5Hz.
- Protective disconnection of consumers in case of increased input voltage above 350V with disconnection of the input automatic switch.
- Protection against short circuits and prolonged overloads on the output.
- "Transit" ("Bypass") mode in case of emergency.
- Protection of the consumer from overvoltage in "Transit" mode with a threshold of 260 ± 5V.
- Thermal protection of the stabilizer in the temperature range of 75–85°C.
- Operation across the entire load range from no-load to nominal.
- Disconnection of electrical consumers during short-term power outages (preventing damage to user's power supplies).
- The stabilizer does not introduce distortions into the shape of the output voltage and, in the presence of distortions in the power supply network, reduces the content of higher harmonics (corrects the voltage waveform) to reduce heating and buzzing of electric motors and transformers.
- In the presence of both smooth and sharp voltage spikes in the network (at the input of the stabilizer), if they do not exceed the allowable stabilization range, the output voltage of the stabilizer remains unchanged, without sags and surges, even during short-term (anticipatory regulation). This is done for the safety of electronics to ensure it is always powered by the nominal voltage of 220V (or 230V if selected) and to prevent flickering of incandescent lamps or other lighting devices.
- The idle power consumption of the stabilizer is no more than for models: QUANT-5.5 – 15W; QUANT-7 – 16W; QUANT-9 – 17W; QUANT-11 – 21W.
- The stabilizer contains a compensator for reactive currents. It reduces reactive consumption by a maximum of 700kVA/month, reducing payment for excess reactive consumption.
- Operation of the stabilizer with generators: connect the generator only after the stabilizer. Connecting the generator as a backup power source to the stabilizer is possible only with the presence of a special integration block with the generator.

Operation of the stabilizer with welding machines:

Transformer welding machines produce dangerous switching voltage pulses during operation (especially with weak and long power lines). If such a welding machine is connected

"before" the QUANT stabilizer, the load of the stabilizer will be reliably protected from these surges and voltage spikes. It is strongly not recommended to connect such welding to the output of the QUANT stabilizer (as well as to use outdated and low-quality transformer welding machines in general). The reason is that although the stabilizer itself maintains the voltage within the norm, the internal line after it will simultaneously power other loads and the welding machine. In this case, being on the same line, the welding machine will directly negatively affect other loads, despite the stable voltage at the terminals of the stabilizer.

Inverter welding machines can be used without restrictions, both on the input and output of the stabilizer.

9. Indication of Stabilizer Parameters

9.1. Information about the device

IInformation about the device is displayed for the first seconds after the power supply to the voltage regulator. In the first line the name (QUANT I or QUANT II) and power of model are displayed.

The second line contains service information, needed only so that the user can pass it to the service in case of problems (for consultations about screens and variables if they differ from those described here)

QUANT I or «Small model» is a model with smaller size and weight.List of capacities: 5,5 kW, 7 kW, 9 kW, 11 kW. Dimensions: 435 mm x 250 mm x 125 mm.

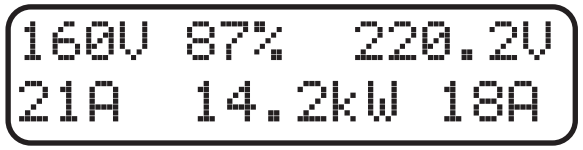
9.2. First level menu screens and second level menu screens

There are two types of menus in the voltage regulator: the first level menu and the second level menu

FIRST LEVEL MENU SCREENS

First level menu screens are available as soon as the device is turned on. They are switched with the "Left" and "Right" buttons below the screen (left and right buttons). Information screens without settings.

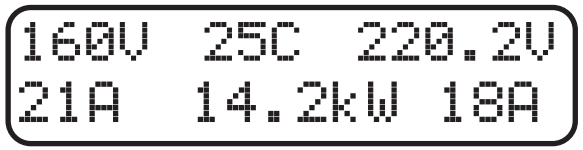
MAIN SCREEN



It is displayed by default. In the first line from left to right: input voltage, in Volts; the percentage of load from the maximum possible power at current voltage and output power; output voltage in Volts and tenths of a Volt. In the second line from left to right: input current, in Amperes; output power, in kilowatts; output current, in Amperes.

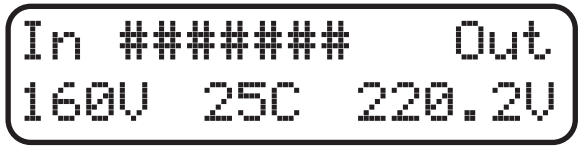
The information on the stabilizer's display is informative. Currents below 2A and power below 400W may not be displayed, so for accurate measurement of current, voltage, and power, use specialized measuring instruments.

- **ADDITIONAL SCREEN NO.1**



Displayed after pressing the "Right" button once. From left to right: input voltage, in Volts; the percentage of load from the maximum possible power at the current input voltage; output voltage in Volts and tenths of a Volt.

- **ADDITIONAL SCREEN NO.2**



Displayed after double-pressing the “Right” button.

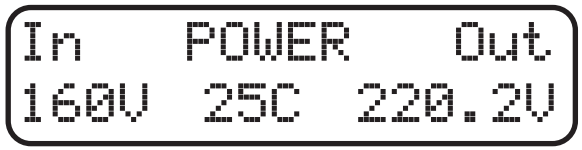
Graphic load percentage indicator shows the fraction of the maximum possible power at the current input voltage.

The inscription "in" indicates the input voltage in the second line.

The inscription "out" indicates the output voltage in the second line.

From left to right: input voltage, in Volts; the percentage of load from the maximum possible power at the current input voltage; output voltage in Volts and tenths of a Volt.

- **ADDITIONAL SCREEN NO.3**



Displayed after triple-pressing the “Right” button.

From left to right: input voltage, in Volts; the percentage of load from the maximum possible power at the current input voltage; output voltage in Volts and tenths of a Volt.

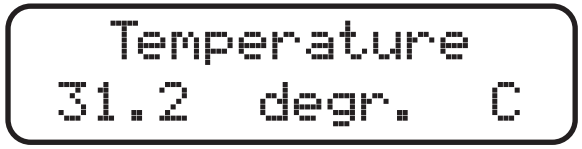
SECOND LEVEL MENU SCREENS:

The second level menu screens are intended for the advanced user. In addition to monitoring the parameters, some of the screens enable to change the operation of the device, be careful! You can change the output voltage: precise regulation within ±3% and switching from 220V to 230V and back. It is also possible to test coolers (set the speed to check the quality of the coolers, the absence of unnecessary noise). To enter the second

level menu, long press the left button under the screen (not less than 6s).

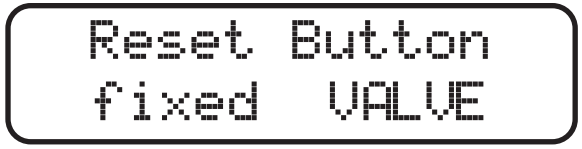
To exit these menu items to the default screens either turn off the power or long press the left button again.

- **SCREEN NO.1. TEMPERATURE SCREEN**



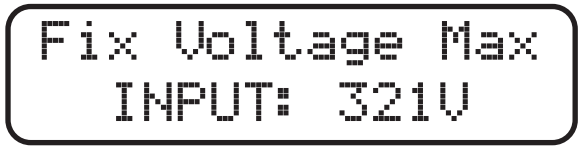
The temperature of the main elements of the device, in degrees Celsius (°C). The maximum temperature may not exceed 80 degrees, otherwise the device will shut down.

- **SCREEN NO.2. MAXIMUM VALUES INFO SCREEN**

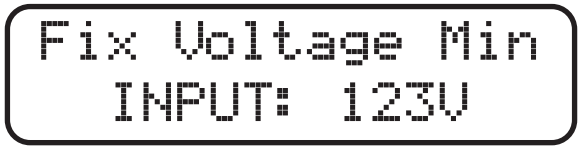


Hint for the following three screens. On the peak screens, press the middle button to reset it. There are no functions for the middle button on this screen.

- **SCREEN NO.3. MAXIMUM RECORDED LOAD**

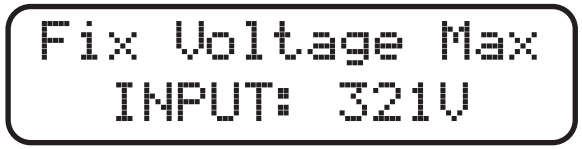


- **SCREEN NO.4**



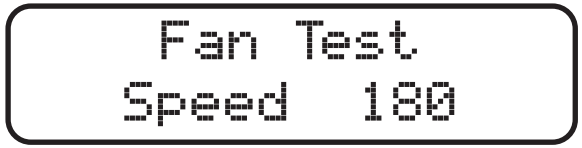
Minimum recorded input voltage from the last switching on of the device. It is reset when the regulator is switched off. It can also be reset by pressing the middle button.

- **SCREEN NO.5**



The maximum recorded input voltage from the last switching on of the device. It is reset when the regulator is switched off. It can also be reset by pressing the middle button.

- **SCREEN NO.6. COOLING SYSTEM TEST SCREEN**



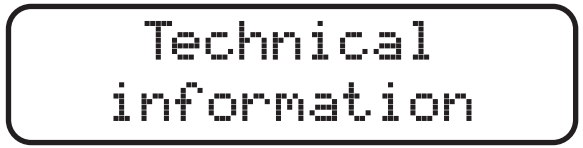
Here you can test the operation of the cooling system fans. To do this, press the middle button of the device. By pressing the right button, you will increase the number of fan rotations per minute. It will be possible hear a slight noise inside the housing

while gradually increasing the RPMs.

To exit the menu, press the middle button again. You can safely move further on the menu - the device will return the cooling system to normal mode.

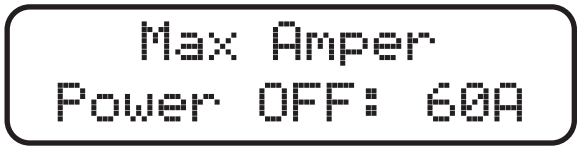
The value is not saved.

- **SCREEN NO.7. TECHNICAL SECTION HEADING**



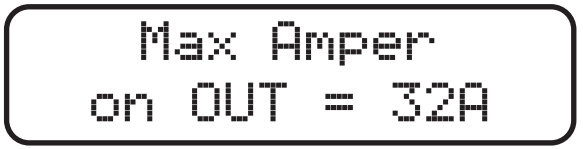
This heading is displayed before the technical data is listed. There is no functionality for the middle button.

- **SCREEN NO.8. DEVICE MAXIMUM CURRENT AT THE INPUT**



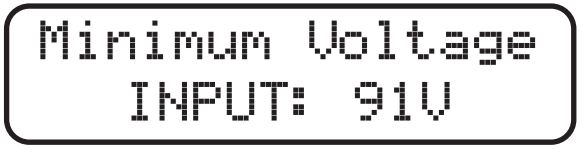
The maximum allowable current at the input of the regulator is displayed here. If this current consumption threshold is exceeded, the device will switch off, but at different intervals when overloaded more than 125% of this current - after 12 seconds, more than 150% - after 1.5 seconds.

- **SCREEN NO.9. DEVICE MAXIMUM CURRENT AT THE OUTPUT**



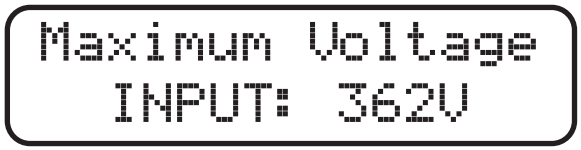
The maximum output current at voltages above 220V is displayed here. Note that the input current and the output current values may not match at low voltage. In this case, the amount of current at the output will be lower than at the input. The values will match at higher voltages (over 220V). This is due to the fact that the regulator requires more current to provide a stable 220V at the output at low voltage than at high voltage.

- **SCREEN NO.10. MINIMUM INPUT VOLTAGE.**



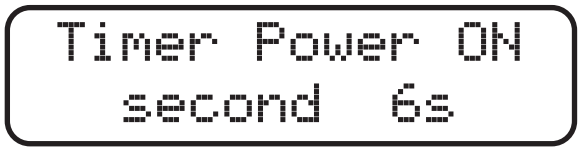
The minimum input voltage at which the regulator will operate and put out are displayed here. Note that in the case of such a low voltage, the output power of the regulator decreases in percentage correlation. For example, if the input of the regulator is 110V, and this is only 50% of 220V, then the power of the regulator will only be 50% of the nominal. If this threshold is exceeded, the regulator will limit the input current and shut down soon.

- **SCREEN NO.11. MAXIMUM INPUT VOLTAGE.**



The maximum allowable voltage at the input of the regulator. If this threshold is exceeded, the regulator will shut down.

- **SCREEN NO.12. TURN-ON DELAY.**



Shows how many seconds after start (switching on the automatic circuit breaker) the regulator will supply voltage to the output.

- **SCREEN NO.13. SELECTION OF OUTPUT VOLTAGE 220V/230V**

Allows you to select the point relative to which the output voltage 220V or 230V will be regulated.

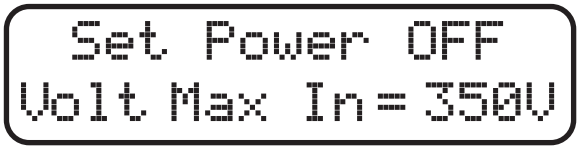
To select the output voltage (switching from 220V to 230V or vice versa), press the middle button below the screen. When the value flashes, you can change it with the right and left buttons under the screen. After selecting the desired value, press the middle button again and the value will stop flashing. Next, if you want to save the selection, exit this screen with the right button, if you do not want to save it - exit with the left button.

- **SCREEN NO.14. OUTPUT VOLTAGE CORRECTION.**

For more precise adjustment of the output voltage. Correction is possible within ± 3% at a pitch of 0.1%.

To make the correction, press the middle button below the screen (the value flashes), and use the "left-right" buttons (left and right buttons, respectively) to adjust the desired value, then press the middle button again (the value flashing should stop). After that, you need to exit the current screen with the right button, so the settings are saved. If it's neccessary to cancel the settings, you must exit the screen with the left button.

- **SCREEN NO.15. SETTING THE REGULATOR SWITCH OFF THRESHOLD.**



This menu allows you to set the regulator switch off threshold by input. To set, press the middle button, then press

the left (to reduce) and right (to increase) buttons to set the desired threshold. To save, press the middle button again.

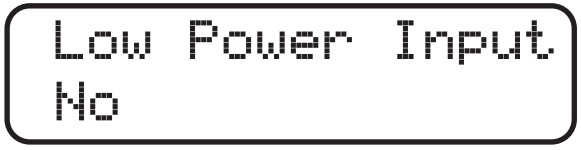
⚠ **ATTENTION!** Changing this parameter may cause the regulator to shut down immediately after switching on, if the mains voltage is steadily increased. It is not recommended to change this parameter without consulting a specialist!

Remember - the Quant voltage regulator provides a stabilized 220V power supply within the range from 90V to 350V, this is its normal 24/7 mode

- **SCREEN NO.16. BACKLIGHT AUTO OFF.**

The display allows to set the time intervals after which the regulator screen will be turned off. Adjustable in minutes by pressing the middle button beforehand.

- **SCREEN NO.17. WEAK NETWORK MODE.**



Weak network mode setting. The mode is designed for operation in a weak network.

⚠ **ATTENTION!** The decision to enable this setting can be made only after prior consultation with the manufacturer. The regulator may have a negative effect on the operation IF THE SETTING IS TURNED ON INDEPENDENTLY WITHOUT CONSULTATION.

9.3. Regulator bypass mode operation

Alarm that the device is in Bypass (Transit) mode. The voltage at the input and output of the regulator has the same value.

To switch on this mode, the transit switch (to the left of the indicator) must be in the upper position.

⚠ **ATTENTION!** The Bypass (Transit) mode can be switched on / off only when the regulator is switched off. If you try to do this while the regulator is running (in Regulation mode or in Bypass mode (Transit)), the input circuit breaker will shut off to avoid accidental activation/deactivation of the Bypass mode.

Such actions are important for long-term operation of the cut-out unit.

⚠ **ATTENTION!** By activating the Bypass mode, you leave the equipment without regulation and protection of the QUANT regulator, because it is connected directly to the grid, which can be dangerous for the equipment in the event of power surges.

10. Built-in Protections of the Quant Stabilizer:

- The stabilizer includes built-in protection against impulse overvoltages according to the quality standards of voltage in power grids – microseconds 1/50 and 16/700, i.e., protection from indirect lightning strikes and, most importantly, from switching overvoltages. Moreover, it is guaranteed that neither of these will affect the load if they do not exceed the stiffness level of 4 according to regulatory values. The protection against switching overvoltages is designed with a margin greater than the maximum stiffness category, taking into account the realities of our networks – with a current of 300A instead of 100A in the impulse and a duration of up to 30,000 μs instead of the permissible minimum of 700 μs.
- The stabilizer protects against the instantaneous supply of voltage to its input up to 420-450V, for example, in the event of a neutral wire break or a phase-to-neutral short circuit in the network, maintaining the voltage safely for 20-50 milliseconds, and only then disconnecting the input circuit breaker (if such short-term jumps are present, without interrupting operation, the voltage on the load remains nominal, without any surges or jumps).
- The protection does not contain wearing parts, unlike traditional protective devices, and can be used in industrial conditions with the presence on the same power line of powerful machines that generate large overvoltages during switching (or transformer welding machines that generate such impulses with every arc break or attempt to ignite the arc), even if thousands of such dangerous impulse overvoltage events occur on the line during the day.

Read more in the publication on the website:

ATTENTION!

The stabilizer will protect the load even in case of regular short circuits of the phase to neutral or poor contact in the neutral wire (if the voltage is higher than 350V - it will disconnect). However, these are emergency situations, and it is still not advisable to operate in such conditions. It is necessary to immediately stop work and ensure the repair of the network, despite the stabilizer functioning normally and providing the load with a safe nominal voltage.

REMEMBER!

If the voltage in the network is above 290V for a long time, it is most likely a dangerous emergency situation that needs to be eliminated immediately (there may already be a fire or dangerous current leakage on the line or the neutral wire is under voltage). The stabilizer may work normally and provide the load, but the network cannot stay in an emergency state for long, and the power supply may stop sooner or later.

CAUTION!

If the input circuit breaker of the stabilizer trips, there is probably a reason for this in the stabilizer. Try to find out the reason for this disconnection (short circuit in the load, neutral break, phase-to-neutral short circuit in the power supply network, other reasons). Do not rush to switch to "Transit" mode – you may supply emergency voltage directly from your network to the load. In "Transit" mode, the stabilizer cannot provide complete protection for your load, only limiting it to 530V (~ 380V eff.), which can be dangerous for many electronic devices. If the input circuit breaker trips even in "Transit" mode, the malfunction may be serious, and work should be stopped immediately to investigate the reasons for disconnection.

QUANT stabilizers are very reliable, so a malfunction of the stabilizer is rarely the cause of such disconnections.

11. Warranty Service

The manufacturer guarantees a long operating period, not less than 15 years, and compliance of the stabilizer with the technical specifications TU U 27.1-22049061-001:2021, provided that the owner of the stabilizer follows the rules outlined in this manual.

The warranty period for the device is 60 months from the date of sale of the stabilizer. The date of sale should be specified, and if it is not indicated, it is determined from the date of the product's production.

The warranty covers any malfunctions of the product caused by manufacturing defects, components, or materials. The warranty does not apply to malfunctions caused by the following factors:

- Use in violation of the requirements of this operating manual.
- Mechanical damage to the product resulting from impact, falling, or careless actions by the buyer or third

parties.

- Any third-party intervention in the design of the product or violation of the integrity of warranty seals.
- If the serial number is changed, erased, or damaged and cannot be established.
- Entry of liquids, dirt, or foreign objects inside the product or exposure to extreme temperatures.
- Force majeure (accident, fire, flood, direct lightning strike to the line or product, etc.).

Warranty conditions do not include instruction, consultation, training of the buyer, delivery, installation of the stabilizer, or the dispatch of a specialist to diagnose the electrical network and determine the nature of the stabilizer malfunction

User Actions in Warranty/Non-Warranty Cases:

If you encounter a warranty/non-warranty case, send the faulty stabilizer to the official Quant service center.

In any situation, use the contact information provided in the warranty certificate or call **+380985279888.**

Basic information and serial number on the device's case:

12. Technical Maintenance

The stabilizer does not require special maintenance measures, except for periodic external cleaning of ventilation openings from dust and dirt that may accumulate over time.

To clean the surface of the stabilizer and the ventilation grille, use a dry flannel cloth, and disconnect the stabilizer from the power grid completely (switch off the device's circuit breaker and the input circuit breaker).

⚠ **ATTENTION!** In case water or foreign objects get inside the stabilizer through the ventilation openings - immediately disconnect the device!

⚠ **ATTENTION!** The use of abrasive materials, synthetic cleaning agents, chemical solvents can damage the surface of the stabilizer's casing, control elements, and indicators. Ingress of liquids, sprays, powders, and other foreign objects inside the stabilizer can lead to its malfunction.

Periodically, during the operation of the stabilizer, it is recommended to check and identify:

- The reliability of the grounding wire connections, power supply network, and consumer load.
- The absence of serious mechanical damage to the casing that could lead to contact with current-carrying parts.
- The presence of a burning insulation odor.
- The appearance of increased noise or vibration.
- Unimpeded access of cold air through the ventilation openings.

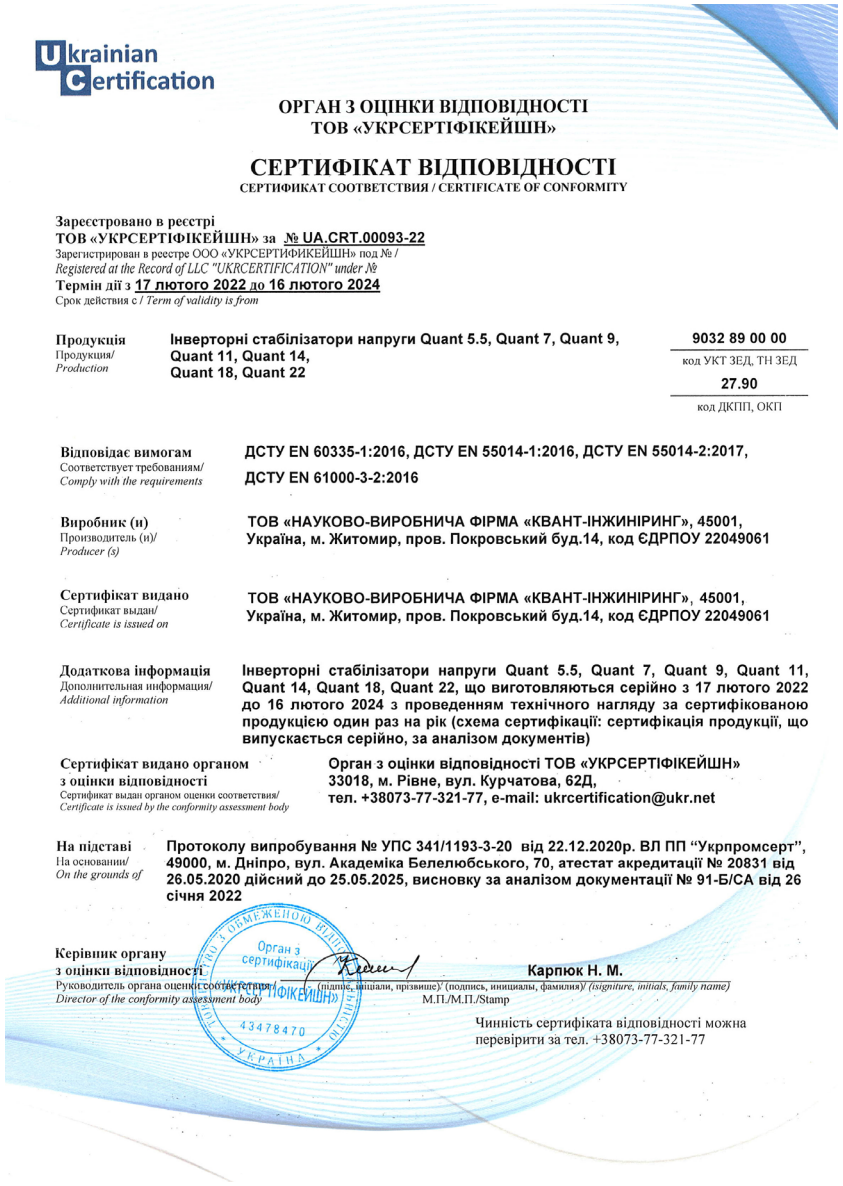
13. Possible Malfunctions and Methods of Troubleshooting

Type of malfunction	Reason for malfunction	Way of rectification
When the stabilizer is plugged in, there is no indication on the front panel, and the voltage output is absent.	The input voltage from the power supply network is absent.	Check the input automatic switch in the distribution panel. If the automatic switch is functional and turned on, wait for the appearance of power supply voltage in the network.
	Stabilizer failure.	Contact the service center.
The automatic switch on the front panel of the stabilizer is activated.	Short circuit in the load circuit.	Disconnect the power cable of the load from the stabilizer output. Turn on the stabilizer. If the circuit breaker does not trip again, check the load.
	The load power exceeds the nominal capacity of the stabilizer.	Disconnect a portion of the load.
	Stabilizer or automatic switch failure.	Contact the service center.
The input automatic switch in front of the stabilizer is triggered.	The load power of the consumer exceeds the nominal current of the input automatic switch.	Disconnect a portion of the load or replace the input automatic switch (after coordination with the energy supply authorities).
	Fault in the input automatic switch.	Replace the input automatic switch (after coordination with the energy supply authorities).
The screen displays: **Max. Input Voltage.**	The input voltage exceeds the maximum allowable voltage.	Wait for the stabilizer to reboot. In case of repeated overloads, contact the power grid maintenance company.
The screen displays: **Input voltage is low.**	Low voltage at the stabilizer input.	Wait for the power to be restored in the grid; excessive power consumption for the network may occur.
The screen displays: **Maximum Power Exceeded.**	The power is too high for the stabilizer, exceeding 125% of the rated capacity.	Reduce power consumption or disconnect devices with high startup currents.
The automatic switch on the front panel of the stabilizer triggers suddenly after prolonged operation.	The input voltage is artificially limited on the stabilizer itself, reaching the peak voltage at the input.	Increase voltage limits through the engineering menu.
	Sudden sharp surge in voltage upwards.	Restart the voltage stabilizer using the switch on the front panel.
The automatic switch trips immediately after turning on.	The voltage in the network is exceeded.	Wait for the voltage to drop and then switch on again after a minimum of 10 seconds.
	The stabilizer reports a past voltage surge.	Wait for 10 seconds and switch the switch back on.
	Internal malfunction of the stabilizer's protection system.	Contact the service center.

14. Manufacturer Information

Manufacturer:
Limited Liability Company "Scientific and Production Firm "Quant-Engineering"
Ukraine, 10006, Zhytomyr region, Zhytomyr city,
Pokrovsky Lane, 14.
Tel. +380985279888,
e-mail: office@quant.ua

15. Declaration of Conformity



Ukrainian Certification

ОРГАН З ОЦІНКИ ВІДПОВІДНОСТІ
ТОВ «УКРСЕРТІФІКЕЙШН»

СЕРТИФІКАТ ВІДПОВІДНОСТІ
СЕРТИФИКАТ СООТВЕТСТВИЯ / CERTIFICATE OF CONFORMITY

Зареєстровано в реєстрі
ТОВ «УКРСЕРТІФІКЕЙШН» за № UA.CRT.00093-22
Зарегистрирован в реестре ООО «УКРСЕРТИФИКЕЙШН» под № /
Registered at the Record of LLC "UKRCERTIFICATION" under №
Термін дії з 17 лютого 2022 до 16 лютого 2024
Срок действия с / *Term of validity is from*

Продукція / Продукция / *Production*	Інверторні стабілізатори напруги Quant 5.5, Quant 7, Quant 9, Quant 11, Quant 14, Quant 18, Quant 22	9032 89 00 00 (код УКТ ЗЕД, ТН ЗЕД) 27.90 (код ДКПП, ОКП)
Відповідає вимогам / Соответствует требованиям/ *Comply with the requirements*	ДСТУ EN 60335-1:2016, ДСТУ EN 55014-1:2016, ДСТУ EN 55014-2:2017, ДСТУ EN 61000-3-2:2016	
Виробник (и) / Производитель (и)/ *Producer (s)*	ТОВ «НАУКОВО-ВИРОБНИЧА ФІРМА «КВАНТ-ІНЖИНІРИНГ», 45001, Україна, м. Житомир, пров. Покровський буд.14, код ЄДРПОУ 22049061	
Сертифікат видано / Сертификат выдан/ *Certificate is issued on*	ТОВ «НАУКОВО-ВИРОБНИЧА ФІРМА «КВАНТ-ІНЖИНІРИНГ», 45001, Україна, м. Житомир, пров. Покровський буд.14, код ЄДРПОУ 22049061	
Додаткова інформація / Дополнительная информация/ *Additional information*	Інверторні стабілізатори напруги Quant 5.5, Quant 7, Quant 9, Quant 11, Quant 14, Quant 18, Quant 22, що виготовляються серійно з 17 лютого 2022 до 16 лютого 2024 з проведенням технічного нагляду за сертифікованою продукцією один раз на рік (схема сертифікації: сертифікація продукції, що випускається серійно, за аналізом документів)	
Сертифікат видано органом з оцінки відповідності / Сертификат выдан органом оценки соответствия/ *Certificate is issued by the conformity assessment body*	Орган з оцінки відповідності ТОВ «УКРСЕРТІФІКЕЙШН» 33018, м. Рівне, вул. Курчатова, 62Д, тел. +38073-77-321-77, e-mail: ukrcertification@ukr.net	
На підставі / На основании/ *On the grounds of*	Протоколу випробування № УПС 341/1193-3-20 від 22.12.2020р. ВЛ ПП "Укрпромсерт", 49000, м. Дніпро, вул. Академіка Белелюбського, 70, атестат акредитації № 20831 від 26.05.2020 дійсний до 25.05.2025, висновку за аналізом документації № 91-Б/СА від 26 січня 2022	

Керівник органу з оцінки відповідності / Руководитель органа оценки соответствия / *Director of the conformity assessment body* — Карпюк Н. М. (підпис, ініціали, прізвище)/ (подпись, инициалы, фамилия)/ *(signature, initials, family name)*
М.П./М.П./Stamp

Чинність сертифіката відповідності можна перевірити за тел. +38073-77-321-77

ДЕКЛАРАЦІЯ
про відповідність

Об'єкт декларації:	***Інверторні стабілізатори напруги Quant 5.5, Quant 7, Quant 9, Quant 11, Quant 14, Quant 18, Quant 22 код ДКПП 27.90***
Найменування та місцезнаходження виробника:	***ТОВ «НАУКОВО-ВИРОБНИЧА ФІРМА «КВАНТ-ІНЖИНІРИНГ», 45001, Україна, м. Житомир, пров. Покровський буд.14, код ЄДРПОУ 22049061***
Найменування та місцезнаходження уповноваженого представника:	***ТОВ «НАУКОВО-ВИРОБНИЧА ФІРМА «КВАНТ-ІНЖИНІРИНГ», 45001, Україна, м. Житомир, пров. Покровський буд.14, код ЄДРПОУ 22049061***
Об'єкт декларації, описаний вище, відповідає вимогам відповідних технічних регламентів:	***Технічний регламент з електромагнітної сумісності обладнання (ПКМУ від 16 грудня 2015 р. N 1077), Технічний регламент низьковольтного електричного обладнання (ПКМУ від 16 грудня 2015р. N 1067)***
Стандарти з переліку національних стандартів, що були застосовані:	***ДСТУ EN 60335-1:2016, ДСТУ EN 55014-1:2016, ДСТУ EN 55014-2:2017, ДСТУ EN 61000-3-2:2016***
Додаткова інформація:	***Інверторні стабілізатори напруги Quant 5.5, Quant 7, Quant 9, Quant 11, Quant 14, Quant 18, Quant 22, що виготовляються серійно з 17.02.2022 по 16.02.2024***

Декларацію складено під цілковиту відповідальність уповноваженого представника:
ТОВ «НАУКОВО-ВИРОБНИЧА ФІРМА «КВАНТ-ІНЖИНІРИНГ»

Директор
ТОВ «НАУКОВО-ВИРОБНИЧА ФІРМА «КВАНТ-ІНЖИНІРИНГ _____ **Волошінська І.В.**

МП
17.02.2022
(дата)

Декларація про відповідність зареєстрована ТОВ «УКРСЕРТІФІКЕЙШН»,
33018, м. Рівне, вул. Курчатова, 62Д, тел. +38073-77-321-77, e-mail: +38073-77-321-77

Реєстраційний номер декларації **UA.TR.D.00013-22**
Зареєстровано *17.02.2022* термін дії до *16.02.2024*

Достовірність зазначеної інформації можна перевірити за телефоном +38073 77 321 77

ЗАРЕЄСТРОВАНО

QUANT

Instant-Action Double-Conversion

Voltage Stabilizer

5 Years Warranty
Components are from verified suppliers or in-house production, designed for operation in an underloaded mode - the basis for long-term device operation.

Wide range of input voltages
The stabilizer not only operates at very low and very high voltages in the network but also functions correctly during fluctuations from low to high and vice versa.

Interference filter
Special filtration at the input and output of the stabilizer will protect against interference in the power grid.

Lightweight and compact size
Fits into any interior without taking up much space. The small weight ensures easy and straightforward installation.

Surge absorber
The "eternal" protection against impulse surges is applied for the first time, effectively limiting impulses throughout the entire service life without replacing cartridges, similar to UPS.

Durability
All load-bearing elements are designed with a margin for long-term operation without wear and degradation. Elements with a limited service life are not used, even for protection against voltage impulses.

Silent Operation
Special chokes-reactors in the form of a monolithic design, developed and manufactured in-house, produce no sound even at maximum power.

Safety and Reliability
Ensures stable and reliable operation of your devices.

24/7 Availability
Continuous operation 24/7 with 100% load

Inverter type
Double conversion "on the fly."

Instant-Action Double-Conversion

Voltage Stabilizer

QUANT

OUR MERIT - SAFE VOLTAGE

QUANT.UA