ZUBR | Technical data sheet, installation and operation manual

R116y

Overvoltage protection for professionals

Voltage relay ZUBR R116y (hereinafter referred to as the device) designed to protect electrical equipment from critical mains voltage surges. Equipment sensitive to line voltage deviations: refrigerators, TVs, video and audio equipment, computers, etc.

Why do professionals choose ZUBR?

The device measures voltage with high accuracy using the TrueRMS algorithm, which significantly improves the accuracy of voltage measurement in the event of interference in the network in cases where the voltage waveform differs from the sine wave.

The body of the device is made of non-combustible polycarbonate, which is the best type of plastic for fire protection requirements. For additional protection against overheating in case of poor contact between the relay and the connected device, there is a temperature sensor inside.

All settings are securely stored in non-volatile memory in the event of a power outage.

The durability and reliability of the power relay contacts is ensured by switching on the load as close as possible to the moment when the voltage sine wave passes through zero. Small deviations from the zero crossing are possible due to the different tripping times of different device samples.

Please read this document in its entirety before installing and using the device. This will help to avoid possible hazards, errors, and misunderstandings.

Do not use the device to protect equipment powered by modified sine wave sources or uninterruptible power supplies whose output voltage is not sinusoidal. Prolonged operation (more than 5 minutes) from such voltage sources may damage the device and lead to non-warranty repairs.

IN THE BOX

Voltage relay	1 piece
Technical data sheet, installation and operation manual, warranty card	1 piece
The packing box	1 piece

TECHNICAL DATA

Voltage limit	upper 220–280 V lower 120–210 V
Break-time at increasing	not more than 0,04 sec
Break-time at lower: upper 120 V lower 120 V	 no more than 1 s no more than 0,04 s
Power Volt	not less than 100 V, not more than 420 V
Power consumption	not more than 1,5 kWt*h / month
Switch-on delay	3–600 sec
Maximum load current (for AC-1 category)	16 A
Maximum load power (for AC-1 category)	3000 BA
The number of operating cycles under load, not less	50 000 cycles
The number of operating cycles without load, not less	20 000 000 cycles
Device weight	0,185 kg ±10 %
Overall dimensions (w x h x d)	124 x 57 x 83 mm
IP to GOST 14254	IP20

INSTALLATION

The device is intended for indoor installation. The risk of moisture and liquid ingress at the installation site should be minimal.

The ambient temperature during operation and installation should be within –5...+45°C.

The device is installed in a socket, which must be protected against short circuit and overcurrent by a circuit breaker (CB) with a rating of no more than 16A.

The circuit breaker is located in the switchboard and mounted in the phase wire break.

To protect against overvoltage caused by lightning discharges, it is necessary to use arresters together with the device. They are installed at the entrance to the building in accordance with their instructions.

To protect a person from electric shock in the event of a leakage, an RCD (residual current device) is installed in the electrical distribution panel.

The wiring to which the device is connected must correspond to the power consumed by the load.

EXPLOITATION

The plug of the device is plugged into a standard 230 V ~ 50 Hz grounded socket. The socket must be designed for a current of at least 16 A. The design of the socket must ensure reliable contact.

The maximum power connected to the device should not exceed the passport values of 3000 VA. For long-lasting operation, it is desirable that the device switches a current or power not exceeding 2/3 of that specified in the passport.

To connect the device:

- plug the device into a power outlet;
- plug the load plug into the output voltage socket.

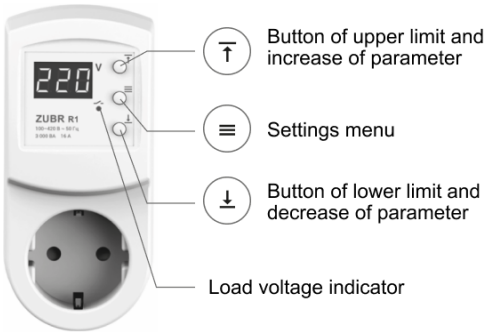
When the device is turned on, it displays the current value of the mains voltage. If the voltage is within the permissible limits, the load is switched on and the green indicator lights up. If the voltage exceeds the upper limit, its value will blink alternating with "U ¯¯", if it exceeds the lower limit, its value will blink alternating with "U_ _".

Setting trip limits

(factory setting 242 V / 198 V)

When setting the trip limits, refer to the technical documentation for the protected equipment.

To view the upper limit, press the "⊼", button, to view the lower limit, press the "⊻" button. Then use the "⊼" and "⊻" buttons to change the limit as necessary.



Button lock

Hold the buttons "⊼ " and "⊻" for more than 6 seconds until the message "Loc" ("oFF") appears on the screen.

Reset to factory settings

Hold three buttons for more than 12 sec until **"dEF"** message appears on the screen. When you release the button, the settings are reset and the device reboots.

Switch-on delay

To extend the service life of the refrigerating equipment with a compressor, it is recommended to set the delay after an accident to 120–180 seconds. To set the delay, press the menu button twice until "ton" appears on the screen.

If a voltage surge occurs, the device will display the maximum voltage for 1,5 sec, then the current voltage for 1,5 sec with a flashing dot in the rightmost digit.

The countdown in seconds ("t99.", "t98."..) until the load is switched on will start.

If you set a delay time longer than 100 seconds, the screen will display the current mains voltage with a flashing dot. When the time is less than 99 seconds, the countdown to switching on the load is displayed.

WARRANTY TERMS

The warranty for ZUBR devices is valid for 60 months from the date of sale, provided that the instructions are followed. The warranty period for products without a warranty certificate is counted from the date of production.

If your device is not working properly, we recommend you to read the section "Possible problems" firstly. If you can not find an answer, contact Service Center. In most cases, these actions resolve all issues.

If you continue to have issues with the device, please send it to a Service Center or to the store where you purchased the device. If your device is defective due to our fault, we will repair or replace it under warranty terms within 14 business days.

Please look through the full text of the warranty and the data you need to send to your Service Center on the website https://www.ds-electronics.company. If you have a warranty case, please, contact the General distributor in your area.

ZUBR

SERVICE CENTER CONTACT:
+38 (091) 481-91-81
Viber WhatsApp Telegram
support@dse.com.ua

WARRANTY CARD

serial №: date of sale:

a seller, a seal: place of a seal

an owner contact for a service center:

Menu

- Press “≡“ to select a menu item.
- To change the parameters, use “⤒“ or “⤓“ The first press on “⤒“ or “⤓“ causes the parameter to flash, the next press changes it. The display returns to the mains voltage display 5 seconds after the last press.

Firmware version

Hold the ≡ button 6 seconds to veiw Firmware version. The manufacturer reserves the right to modify the firmware to enhance the device technical characteristics.

Menu	Press ”≡”	Screen	Notes
Alarm log for 50 accidents The device stores in non-volatile memory: • the voltage values at which the load was interrupted; • “oht” overheat triggering (see column 7).	1 time		Log entries are displayed in order from the last to the oldest (“n 0” is the last entry, “n49” is the oldest). To navigate through the general log use the “⤒“ or “⤓“ buttons. When viewing the alarm voltage, the relay will briefly display the alarm number after 1 second. To reset the log, hold down “≡” while viewing the log for 6 seconds until the inscription “rSt.” appears. After releasing the button the log will be cleared and the screen will display: “---”.
Switch-on delay (factory setting 3 s, a range of change 3–600 s, step 3 s)	2 times		It is used to protect compressor equipment. It is recommended to set a delay of turning on load 120–180 seconds. It will allow to increase the service life of the compressor.
Professional model of the tripping time when the voltage goes beyond the limits (factory setting “oFF”, a range of change “on”, “oFF”) A professional model of the tripping time is useful for a low quality AC mains or a mains overloaded with high-powered equipment. This function is disabled from the factory.	3 times		Activate the Professional Model to keep the equipment running during safe voltage deviations in terms of magnitude and duration. The time to turn off the load when the voltage goes beyond the limits is described in the table below.

Pro Model (factory setting) 	Upper voltage limit	220–280 V	0,04 s
	Lower voltage limit	120–210 V	1 s
		< 120 V	0,04 s
Pro Model 	Upper voltage limit	> 264 V	0,04 s
		220–264 V	0,5 s
	Lower voltage limit	176–210 V	10 s
		154–176 V	0,5 s
		< 154 V	0,04 s

Correction of voltage (factory setting 0 V, a range of change ±20 V)	4 times		You can use correction if voltage indications on the screen of the device and your reference device differ.
Switching off / on load (factory setting “on”, a range of change “on”, “oFF”)	hold 4 s		To disconnect the load, hold down the menu button 4 seconds until “oFF” is displayed. While holding down the button, three dashes will appear on the screen one after the other. When the load is switched off, the “oFF” message remains on the screen.

POSSIBLE PROBLEMS, CAUSES AND WAYS TO OVERCOME THEM

At turning on neither the indicator nor the screen don't light up

Possible cause: there is no power supply voltage. It is necessary to: ensure supply voltage presence.

Screen normal voltage level, load is not turning on

Possible cause: the current voltage in the network is close to the established limits and not stable.

It is necessary to: check the values of the limits; increase their values so that the protected equipment is tolerated to them. In other cases, please, address to a service centre.

The load is disabled, “oht” flashes on the screen

The temperature inside the housing exceeded 80 °C and triggered protection against internal overheating. The screen shows “oht” once for 1 second.

Possible cause: inner overheating of the device to which can lead: the socket supplying the device or the load plug is not designed for the required power, high ambient temperature or the power of the switched load is exceeded.

It is necessary to: check that the socket, power supply unit or the load plug is rated to the required power, make sure that the switching load does not exceed the permissible.

Feature of protection against internal overheating: the device will resume operation if the temperature inside the housing drops below 60 °C. If the protection is triggered more than 5 times within 24 hours, the device will lock until the temperature inside the housing drops below 60 °C (“oht” will not flash) and one of the buttons is pressed. To view the temperature of the thermal protection sensor, press “≡” when the device is overheated.

Every 5 sec the screen displays “Ert”

Possible cause: open or short circuit of the internal overheating sensor. Control over inner overheating will not be done.

It is necessary to: send the device to the Service Center. Otherwise, control over inner overheating will not be done.

Technical Support Chat

If you haven't found the answer, please contact our technical support engineer

dselectronics_bot
zubr_rbuz_official

SAFETY INSTRUCTIONS

Carefully read and become aware of these instructions.

Connection of the device must be done by a qualified electrician.

Before the installation (dismantling) and connection (disconnection) of the device, turn off voltage supply and also act according to the “Rules of an arrangement of electric installations”.

Turning on and off, configure the device should be with dry hands.

Do not connect the device to the network disassembled.

Avoid hitting of water or moisture to the device.

Do not expose the device to extreme temperatures (higher than 40 ºC or below –5 °C) and high humidity.

Never clean the device with the use of chemicals such as benzene, solvents.

Do not store the device and do not use it in areas with the dust.

Do not attempt to disassemble and repair the device.

Do not exceed the landmarks value adaptor and power.

To protect against overvoltage caused by lightning discharges, use a lightning protector.

Protect the children from games with the working device, it is dangerous.

ADDITIONAL INFORMATION

Do not fire and do not throw away the device with the household waste.

After the end of its service life, the product must be disposed of in accordance with applicable law.

Transportation of goods carried in the package ensures the safety of the product.

The device can be transported by any kind of transport (rail, sea, motor, air transportation).

Date of manufacture is on the back side of device. Application time is unlimited.

The device does not contain harmful substances.

If you have any questions or something is not clear, call the Service centre, the telephone number is listed below.

version: dtr10.1 | dtr.82.0.5 | 157

EMC Directive 2014/30/EU
Low Voltage Directive 2014/35/EU

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www.ds-electronics.company