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
Installation and Operating Manual	1 piece
The packing box	1 piece

TECHNICAL DATA

Voltage limit		upper 230–280 V lower 100–210 V
Break-time at increasing		not more than 0,04 sec
Break-time at lower:	upper 100 V lower 100 V	no more than 1,1 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 s
Maximum load current (for AC-1 category)		16 A
Maximum load power (for AC-1 category)		3600 VA
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 16 A.

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 3600 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.

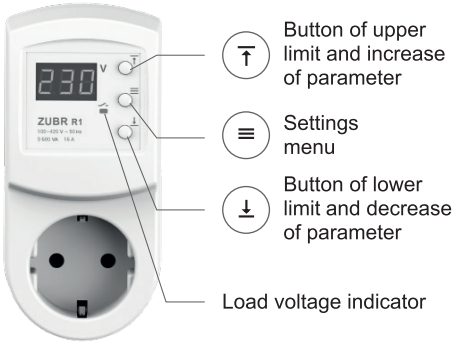
When the device is turned on, it displays the current value of the mains voltage. If the voltage is within the permissible limits, the load is switched on and the green indicator lights up. If the voltage exceeds the upper limit, its value will blink alternating with "U ¯ ¯", if it exceeds the lower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

Setting trip limits

(factory setting 253 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.

Switching off / on load

(factory setting "on", a range of change "on", "oFF")



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.

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.

Reset to factory settings



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

WARRANTY TERMS

The warranty for ZUBR device 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.

For returns, repairs, and warranty service, contact the place of purchase. If a defect caused by our fault is found, we will carry out warranty repair or replacement of the device within 14 working days. Warranty and service details are available at https://www.ds-electronics.company/support

SERVICE CENTER CONTACT:
+38 (091) 481-91-81
Viber, WhatsApp, Telegram
@dselectronics_bot
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: SELECTING A PARAMETER USING THE "≡" BUTTON

Use the "▼" or "▲" buttons to change parameters. The first press will cause the parameter to blink, and the next press will change its value. After 5 seconds of inactivity, the display will return to showing the mains voltage.

PARAMETER	Screen	Notes
Log of events for 50 notes		The device stores in non-volatile memory the voltage values at which the load was switched off, as well as the "oht" overheating trip (see column 7 for details). 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: "---".
Time delay before the load is switched on factory setting 3 sec, range of change 3–600 sec	 	It is used to protect compressor equipment. It is recommended to set a delay of turning on load 120–180 sec. It will allow to increase the service life of the compressor. To set the delay, press the menu button twice until "ton" appears on the screen. If a voltage surge occurs, the device will first display the maximum voltage, then the current voltage with a flashing dot on the right. After that, a countdown in seconds ("t99.", "t98."…) will begin until the load is switched on. If you set a delay time longer than 100 seconds, the display will show the current mains voltage with a flashing dot. When the remaining time is less than 99 seconds, the countdown until the load is switched on will be displayed.
Pro mode of Switch-off time when undervoltage and overvoltage occurs factory setting "oFF"		Useful for low-quality AC power grids or grids overloaded with powerful equipment. Activate to prevent equipment from shutting down during voltage deviations that are safe in terms of magnitude and duration. Table 1. Load disconnection time when the voltage goes out of range

Pro Mode **OFF**	upper limit "U‾‾"	230–280 V	not more than 0,04 s
	lower limit "U_ _"	100–210 V	1,1 s
		< 100 V	not more than 0,04 s
Pro Mode **on**	upper limit "U‾‾"	> 276 V	not more than 0,04 s
		230–276 V	0,5 s
	lower limit "U_ _"	184–210 V	10 s
		161–184 V	0,5 s
		< 161 V	not more than 0,04 s

Generator Compatibility Mode factory setting "oFF"		Necessary in case of a shutdown below the lower voltage threshold when operating from a generator. It can also be used with other alternative power sources.
Correction of voltage factory setting 0 V, a range of change ±20 V		You can use correction if voltage indications on the screen of the device and your reference device differ.

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 center.

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

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 center, the telephone number is listed below.

version: dtr.3G.8.5

RoHS Directive 2011/65/EU

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

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