ZUBR

Overvoltage protection for professionals

R116y

Technical data sheet,
installation and operation manual

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.

The device measures voltage according to the TrueRMS principle, which reduces the influence of mains interference on the voltage measurement accuracy when the voltage waveform differs from the sinusoidal. The internal overheat protection and the non-flammable polycarbonate housing increase the safety of the device during operation.

IN THE BOX

Voltage relay R116y	**1 piece**
Technical data sheet, installation and operation manual and 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	not more than 1,2 sec
Power Volt	not less than 100 V not more than 420 V
Power consumption	not more than 1,5 kWt*h / month
Max load current (for category AC-1)	16 A
Rated power (for category AC-1)	3000 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

Before the installation and operation of the device, PLEASE READ BY THE END OF THIS DOCUMENT. This will help to avoid possible danger, mistakes and misunderstandings.

DURABILITY AND ROBUSTNESS OF PCB RELAY CONTACTS is ensured by turning on the load as close as possible to the point when the voltage sinusoid crosses zero. Small deviations from the zero crossing associated with different break times for different types of PCB relays are possible.

All settings are stored in NON-VOLATILE MEMORY in the event of a power outage.

IT IS FORBIDDEN TO USE VOLTAGE RELAY TO PROTECT EQUIPMENT, which runs from the sources of modified sine, uninterruptible power supply output voltage sinusoid are not Long operation (more than 5 minutes) from the following sources voltage may damage ZUBR and lead to not warranty repair.

CONNECTION

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

To connect the device:
• Insert the plug of the device into the socket;
• Insert the load plug into the socket of the original voltage.

Note that a load capacity of 3 000 VA at 220 V will be 4 400 VA at 270 V. Therefore, do not exceed the nameplate value of the switching power of the device with the maximum possible voltage deviation upwards.

Button of upper limit and increase of parameter

Function menu

Button of lower limit and decrease of parameter

Load voltage indicator

INSTALLATION

The appliance is intended for installation inside residences The risk of moisture or humidity in the installation site should be minimal.The ambient temperature during the installation should be within –5...+45 °C.

For protection against short circuit and excess capacity in circuit load necessarily need to set in front of the appliance, the automatic circuit-breaker, rated not more than 16 A.

To protect against overvoltage caused by lightning strikes, surge arresters must be used together with the device. They are installed at the entrance to the building in accordance with their instructions.

To protect people from electric leakage current, an RCD (residual current device) is installed in the electrical switchboard.

The cross-section of the wires to which the device is connected must match the value of the electric current consumed by the load.

EXPLOITATION

The device will immediately begin to display the voltage on phase. If the voltage is normal, the voltage will be

applied to the load after the set time and the green indicator will light up. If the voltage is over the upper limit, its value will flash alternately with **«U‾‾»**, if over the lower limit, its value will flash alternately with **«U_ _»**.

Use the «≡» button to navigate through the menu. Use the «⭱» and «⭳» buttons to change the parameters. After pressing the button for the first time the parameter will flash, after pressing it for the second time the parameter will change. After 5 sec after pressing — return to the mains voltage display.

Setting trip limits

(factory setting 242 V / 198 V)

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.

When setting the voltage limits USE THE PROTECTED EQUIPMENT TECHNICAL DOCUMENTATION.

FOR PROTECTION OF REFRIGERATION equipment, where there is a compressor, 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.

Button blocking (child and public protection)

In order to enable /disable button blocking press the **«⭱»** and **«⭳»** buttons at the same time for 6 seconds till the **«Loc»** (**«oFF»**) sign appears on the screen.

Delay in the load starting after a failure

(control is described in table 1)

During a voltage jump before the countdown for 1,5 sec, an emergency situation will be displayed, then for 1,5 seconds the current with a flashing dot to the right.

The countdown in seconds («t99.», «t98.»...) will start until the load is turned on.

If you set a delay longer than 100 seconds, the screen will display the current voltage with a flashing dot to the right. If the remaining time is less than 99 seconds, it will display the countdown in seconds.

Reset to factory settings

Hold three buttons (**«⭱», «⭳»** and **«≡»**) for more than 12 seconds until **«dEF»** message appears on the screen. After release, reset to factory settings and reboot will take place, the alarm log is cleared.

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 that you first read the section «Possible problems». If you cannot 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 within 14 business days.

Please see 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:

Table 1. FUNCTION MENU

Menu section	Press «≡»	Screen	Notes
Log for 50 accidents The device stores in non-volatile memory: 1. the voltage values at which the load was interrupted; 2. «oht» overheat triggering (see page 7).	1 time	380 n 0	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: **«---»**.
Delay in the load starting after a failure (factory setting 3 sec, a range of change 3–600 sec, step 3 sec)	2 times	ton	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.
Professional model of the tripping time when the voltage goes beyond the limits (factory setting «oFF»)	3 times	Pro	Does not disable the protected equipment at safe voltage deviations in value and duration. See the table 2 for more details.
Correction of voltage (factory setting 0 V, a range of change ±20 V)	4 times	Cor	You can use correction if voltage indications on the screen of the device and your reference device differ.
Turning on/off the electrical stress	hold 4 sec	on oFF	To change the mode, hold the button for 4 seconds, and then release. Three dashes will appear on the screen, one after another. After power is cut off, the message «oFF» will remain on the screen.
Firmware version	hold 6 sec	15.7	The manufacturer reserves the right to modify the firmware to enhance the device technical characteristics.

Table 2. TIME MODELS of the tripping time when the voltage goes beyond

Model	Limit	Voltage	Time
Regular model (default) Pro oFF	Upper	220–280 V	0,04 sec
	Lower voltage limit	120–210 V	1 sec
		< 120 V	0,04 sec
Professional model Pro on	Upper voltage limit	> 264 V	0,04 sec
		220–264 V	0,5 sec
	Lower voltage limit	176–210 V	10 sec
		154–176 V	0,5 sec
		< 154 V	0,04 sec

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, ensuring the safety of the product.

The deive is 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 you something will not clear, call the Service centre the telephone number listed below.

POSSIBLE PROBLEMS, CAUSES AND WAYS TO OVERCOME THEM

At turning on neither indicator nor screendo not shine

Possible cause: there is no power supply voltage.

It is necessary to: ensure supply voltage presence.

After turning on on the screen normal voltage level, but 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

oht

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»

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.

SAFETY INSTRUCTIONS

Carefully read and become aware of yourself these instructions.

Turning on and off or and 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.

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

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