

# D16, D25, D32 D40, D50, D63

Overvoltage protection for professionals

**Voltage relay ZUBR D** (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.

### IN THE BOX

- Voltage relay ZUBR D** 1 piece
- Technical data sheet and installation and operation manual and warranty card** 1 piece
- The packing box** 1 piece

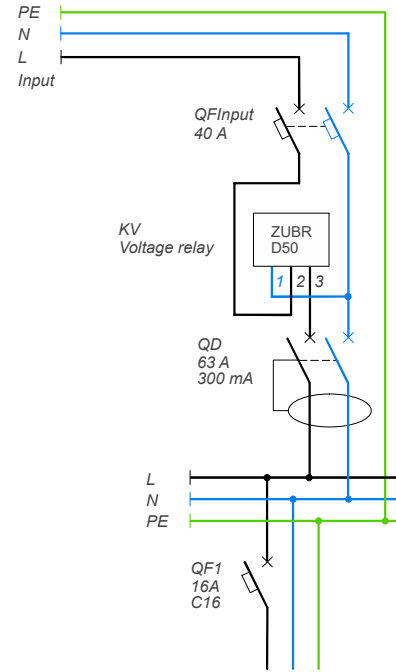
### TECHNICAL DATA

Voltage limit	upper 220–280 V lower 120–210 V	
Power Volt	not less than not more than	100 V 420 V
Power consumption, not more than	1,5 kWt*h / month	
Device weight	0,21 kg ±10 %	
Overall dimensions	66 x 85 x 53 mm	
Connection, not more than	16 mm <sup>2</sup>	
IP to GOST 14254	IP20	

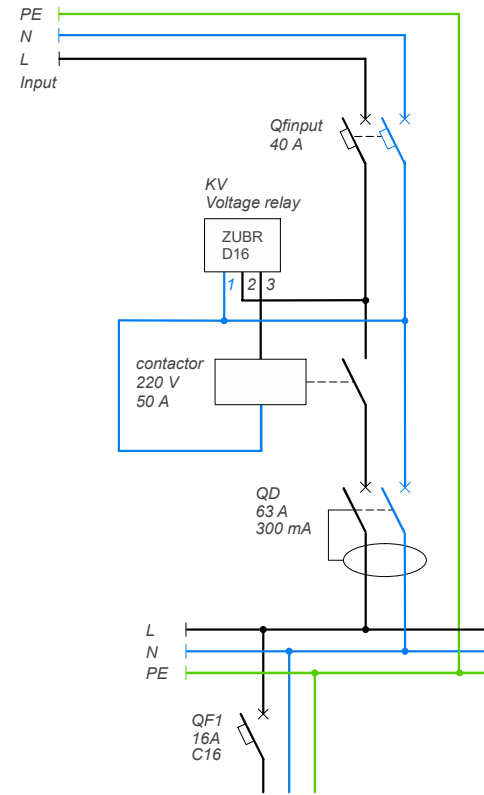
Model	D16	D25	D32	D40	D50	D63
Rated load current (for category AC-1)	16 A	25 A	32 A	40 A	50 A	63 A
Max load current, in 10 minutes (for category AC-1)	20 A	30 A	40 A	50 A	60 A	80 A
Rated power (for category AC-1)	3 500 VA	5 500 VA	7 000 VA	8 800 VA	11 000 VA	13 900 VA
Break-time at increasing	0,01–0,03 sec			not more than 0,03 sec		
Break-time at lower	> 120 V < 120 V	not more than 1,2 sec 0,01–0,03 sec			not more than 1,2 sec not more than 0,03 sec	
The number of operating cycles under load	not less 100 000 cycles			not less 10 000 cycles		
The number of operating cycles without load	not less 1 000 000 cycles			not less 500 000 cycles		
Relay type	electromagnetic			polarized		

### CONNECTION SCHEMES

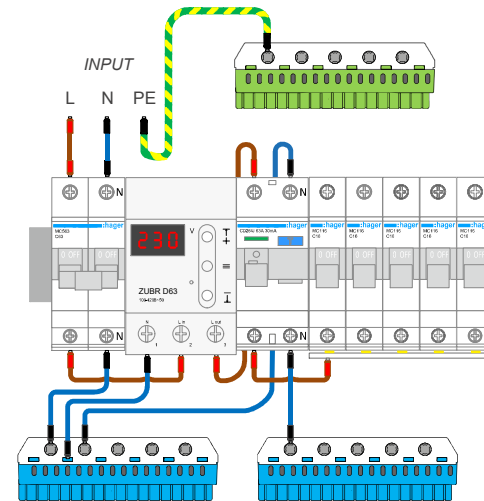
Supply voltage (100 – 420 V, 50 Hz) served on terminals 1 and 2, phase (L) is connected to terminal location 2, and the neutral conductor (N) to terminal 1. The connecting wires of the load phases are connected to the terminal 3 and to the neutral terminal block (not included).



Scheme 1. Option of wiring diagram



Scheme 2. Option of wiring diagram ZUBR D16 and contactor with 230 V winding



Scheme 3. Option of the connection diagram

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.

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.

IF A NEUTRAL TERMINAL IS NOT USED TO CONNECT A NEUTRAL WIRE TO THE DEVICE, the connection of the mains neutral wire to the load neutral in terminal 1 of the device is allowed only if it is crimped in the sleeve.

### 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.com.ua/en/>. If you have a warranty case, please, contact the General distributor in your area.



**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:	

## 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  $-5...+45\text{ }^{\circ}\text{C}$ .

The appliance is installed in a special box, which allows to conduct the easy installation and operation. Cabinet should be equipped with standard mounting rail 35 mm width (DIN rail). The appliance takes in width of 3 standard module on 18 mm. The height of the appliance should be in the range 0.5...1.7 m from the floor.

For protection against short circuit and excess capacity in circuit load necessarily need to set in front of the appliance, the automatic circuit-breaker (QF). The automatic switch off is established in the open-phase fault wire, as shown at the schemes 1, 3. To protect person from electric shock leak is set safety shutdown device.

Terminals of the device designed for wire cross section 2 up to 16 mm<sup>2</sup>. It is advisable to use a soft wire, which is tightened in the terminals with a screwdriver with a tip width of no more than 6 mm with a torque of 2.4 Nm. A screwdriver with a blade more than 6 mm wide can cause mechanical damage to the terminals. Doing so will void your warranty claim.

Cutting wires of wiring to which connects voltage relay should meet the value of electric current, which consumes voltage.

It is also necessary to take into account that the load power of 3 000 VA at 220 V will be 4 400 VA at 270 V. Therefore, please, do not allow the relay power handling to exceed its certified value at the maximum voltage deviation to the upper limit. If the relay power handling exceeds its certified value use the electric contactor (magnetic starter, power relay) which is designed for this power capacity (see diagram 2).

## 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<sub>---</sub>», if over the lower limit, its value will flash alternately with «U<sub>-</sub>».

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.

All settings are stored in NON-VOLATILE MEMORY

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

### 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.

### Viewing of firmware version


Hold the button «≡» for 6 sec. The manufacturer reserves the right to modify the firmware to enhance the device technical characteristics.


### Reset to factory settings

Hold the three buttons «-», «+» and «≡» until «dEF» message appears on the screen. After release, reset to factory settings and reboot will take place, the alarm log is cleared.

## 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.

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.

## 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.

## 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 device 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.

## SAFETY INSTRUCTIONS

Carefully read and become aware of yourself 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 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 °C 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.

Table 1. FUNCTION MENU	Press «≡»	Screen	Notes
<b>Log for 50 accidents</b> The device stores in non-volatile memory the voltage values at which the load was interrupted.	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.  <b>To reset</b> 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: «---».
<b>Delay in the load starting after a failure</b> (factory setting 3 sec, a range of change 3–600 sec)	2 times		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.
<b>Correction of voltage</b> (factory setting 0 V, a range of change $\pm 20\text{ V}$ )	3 times		You can use correction if voltage indications on the screen of the device and your reference device differ.

vd57\_220610  
dtr61



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

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