



Overvoltage protection for professionals

## D2-40, D2-50, D2-63 D2-40 red, D2-50 red, D2-63 red

Technical passport and installation  
and operation manual

**Voltage relay ZUBR D2** (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.

### SUPPLY PACKAGE

<b>Voltage relay ZUBR D2</b>	<b>1 piece</b>
<b>Guarantee card, technical passport, manual</b>	<b>1 piece</b>
<b>Shipping box</b>	<b>1 piece</b>

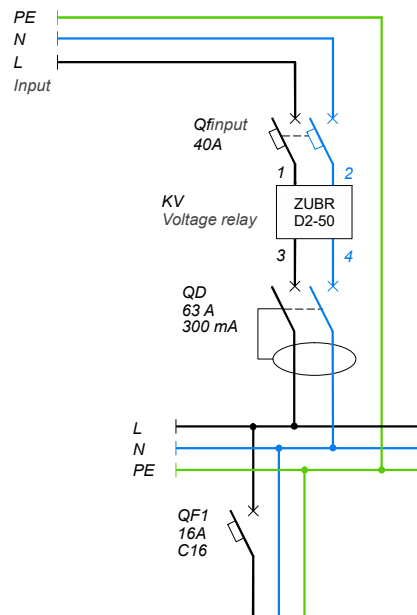
### TECHNICAL DATA

Model	D2-40 D2-40 red	D2-50 D2-50 red	D2-63 D2-63 red
Rated load current	40 A	50 A	63 A
Rated power, in 10 minutes	50 A	60 A	80 A
Rated power	8 800 VA	11 000 VA	13 900 VA
Voltage limit	upper 220–280 V lower 120–210 V		
Break-time at increasing	not more than 0,04 sec		
Break-time at lower:	> 120 V 0,1–10 sec < 120 V not more than 0,04 sec		
Power Volt	not less than 100 V not more than 420 V		
Power consumption	not more than 0,35 kWt / month		
The number of operating cycles under load	not less 10 000 cycles		
The number of operating cycles without load	not less 500 000 cycles		
Relay type	polarized		
Connection	not more than 16 mm <sup>2</sup>		
Device weight	0,17 kg ±10 %		
Overall dimensions (w x h x d)	36 x 85 x 66 mm		
IP to GOST 14254	IP20		

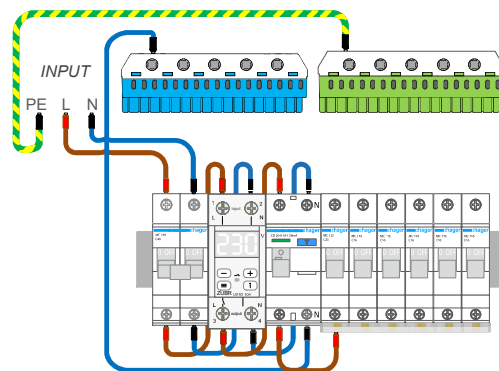
### CONNECTION SCHEMES

Supply voltage (100 – 420 V, 50 Hz) served on terminals 1 and 2, phase (L) is connected to terminal location 1, and the neutral conductor (N) to terminal 2. If a circuit without a neutral bypass through D2 is used, the neutral wire can also be connected to terminal 4.

The connecting wires of the load phases are connected to the corresponding terminals 3, 4 (phase (L) is connected to terminal location 3, and zero (N) is connected to terminal location 4).



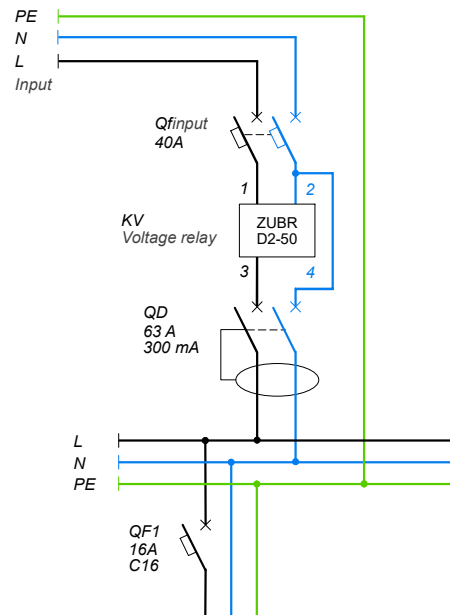
*Scheme 1. Option of wiring diagram  
with a neutral bypass through D2*



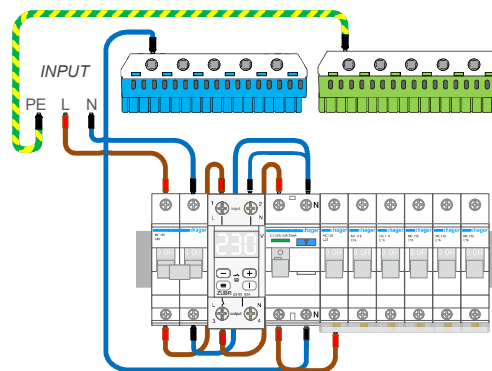
*Scheme 2. Option of the connection diagram  
with a neutral bypass through D2*

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.

All settings are stored in NON-VOLATILE MEMORY



*Scheme 3. Option of wiring diagram  
without a neutral bypass through D2*



*Scheme 4. Option of the connection diagram  
without a neutral bypass through D2*

### 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.

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 two  
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.

### 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. The website address  
can be found in the instructions in the Contacts section.



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

### GUARANTEE CARD

serial №:	date of sale:
a seller, a seal:	place of a seal
an owner contact for a service center:	

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.

Use the «**≡**» button to navigate through the menu. Use the «**+**» and «**−**» buttons to change the parameters. To browse the abbreviation expansion of the menu item, use the «**i**» button. 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.

WHEN SETTING THE VOLTAGE limits use theprotected 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.

Locking the controls

Hold down the «**+**» and «**−**» buttons for more than 6 sec until the message «**Loc**» («**unLoc**») appears on the screen

A tripping counter

Not discharged. To view hold the button «**i**» for 12 sec.

Table 1. FUNCTION MENU	Press « <b>≡</b> »	Screen	Notes
<b>Delay in the load starting after a failure</b> (factory setting 3 sec, a range of change 3–600 sec)	1 time		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 ±20 V	2 times		You can use correction if voltage indications on the screen of the device and your reference device differ.
<b>Professional model of the tripping time when the voltage goes beyond the limits</b> (factory setting «oFF»)	3 times		Does not disable the protected equipment at safe voltage deviations in value and duration. See the link via QR code (page 6) for more details.
<b>Break-time on voltage dip</b> (factory setting 0,1 sec, a range of change 0,1–10 sec)	4 times		It is necessary to fine-tune the response time of the protection to power failures. See the link via QR code for more details: the Pro mode is enabled: 154-176 V, the Pro mode off: 120-210 V.
<b>Delay type of load starting</b> (factory setting «tAr»)	5 times		« <b>tAr</b> » — delay is counted from the moment of voltage recovery. « <b>tAo</b> » — delay is counted from the moment the relay is turned off and takes into account response time of the emergency in the total on-delay time.
<b>Hysteresis</b> (factory setting 1 V, a range of change 0–5 V)	6 times		It is necessary to reduce the number of the device operations by the limit, when the voltage in the network is close to the limit and is not stable. See the link via QR code (page 6) for more details.
<b>Maximum number of protection actuations in a row</b> — protection against frequent actuations (factory setting 3, a range of change 1–5)	7 times		It limits the number of repetitive limit trips if no more than 20 seconds have elapsed between the trip and the load turning on. To disable the function, select «oFF». See the link via QR code (page 6) for more details.
<b>Standby brightness</b> (factory setting 100%, a range of change 0–100%, step 10%)	8 times		At 0, 30 seconds after the last button press, the screen is completely off. During an emergency, the screen will be 100% lit.

Delay in the load starting after a failure (control is described in table 1)

During a voltage jump before the countdown for 1,5 seconds, 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 sec, the screen will display the current voltage with a flashing dot to the right. If the remaining time is less than 99 sec, it will display the countdown in seconds.

Reset to factory settings

Hold the 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.

Viewing of firmware version

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

More about some functions via QR code

The link describes in more detail the functions of your device as listed in Table 1. Please note that your device only has the functions described in these instructions.



Log for 100 accidents

The device stores in non-volatile memory the voltage values at which the load was interrupted or «oht» overheat triggering (see the link via QR code for more details).

To view the alarms press «**i**». Log entries are displayed in order from the last to the oldest («n 0» is the last entry, «n99» is the oldest). Hold down «**i**» to browse through the log quickly. To browse up or down, use «**+**» or «**−**».

The value of each crash is accompanied by a single flash of its number, where «n 0» — is the most recent and «n99» — is the oldest.

To reset the log, wait until the device returns to the mains voltage display. Then hold down the «**i**» button for 3 seconds until «**rSt**» appears. After releasing the button, the log will be cleared.

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 screennormal 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  
  
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: bad contact in the terminals of the device, high ambient temperature, overwhelming power output or incorrectly selected cross-section of wires for connecting.  
*It is necessary to:* check tension of power wires in the device terminals, make sure that the switching load does not exceed the permissible and that the cross section of the wires is selected correctly.

*Feature of protection against internal overheating* — see the link via QR code (page 6) for more details.

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.

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.

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.

vG295 220613



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

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🌐 support@dse.com.ua      www.ds-electronics.com.ua/en/