Voltage monitoring relay CP-721-1
Operation manual Version 1.2
Appointment
Voltage monitoring relay CP-721-1 is designed to protect electrical installations, electrical appliances and other electronic equipment from overvoltage or undervoltage, to protect against breakage of the neutral wire, recording limit voltage values, as well as the type of an accident that has occurred, monitoring the voltage value in a single-phase AC supply network. Protection is carried out through disconnecting the load from the power supply.
Functioning principle

The relay contact is closed and the load is turned on if the monitored voltage is within the specified range. The range (upper and lower values) is set through the buttons on the front panel. The reclose of the relay (after switching off) is done automatically, after a set time, after a certain period of time. In case of recovery after voltage failure, the AR time is increased by the amount of the device readiness time.

Permissible voltage range
Hysteresis

ATTENTION!
The product should be connected to a single-phase network in accordance with existing electrical safety standards. The connection rules are presented in this manual. Installation, connection and adjustment operation should be carried out by a qualified technician after reading the operating manual and the device's functions. Before starting the installation, make sure that there is no voltage on the connected wires. Unauthorized opening of the shell entailed the warranty for the product and may also result in an electric shock. The product must be used for its intended purpose. For installation and operation of the device, contact the technical support service.
ATTENTION!
The product provides varistor protection against high-voltage surge voltages (remote lightning discharges, interference arising from electrical equipment switching).
Control panel
Digital indicator

Load connection indicator
Micro control buttons

Technical specifications
Supply voltage, V 100 ... 450 AC
Frequency, Hz 40 ... 60
Maximum switched current, A 63 AC-1 / 250V AC
Contact 1NO
Voltage setting range, V:
-lower threshold

-the upper threshold
140 ... 210
240 ... 300
Measuring inaccuracy, no more than% 2
Hysteresis, V 5
Disconnection delay, s: *
-lower threshold, asymmetry
-the upper threshold
0.5 ... 25
0.06 ... 5
Restart time, s 2 ... 599
Time to readiness of device, s <2
Operating temperature range, ° C -25 ... + 50
Protection degree IP20
Electrical endurance, cycles> 105
Requisite power, W 3
Pollution degree 2
Overvoltage category III
Dimensions (WxHxD), mm 35x90x60
Connection of screw terminals 2.5 ... 16 mm2
Tightening torque of the screw connection, Nm 1.2
Enclosure type 2S
Weight, kg 0.14
Mounting 35 mm DIN rail
* In cases of overvoltage over 300 V or undervoltage below 120 V, the relay is switched off in 0.05 seconds.
** NF 2 - operating temperature range from -40 to +55 ° C.

Delivery in complete sets
Voltage monitoring relay CP-721-1 ..... 1 pc.
Operation manual ..... 1 pc.
Packaging..... ..... 1 PC.

Operation mode indication

Light-emitting diode:

- is extinguished - there is no voltage, or the relay contact is open and the load is due to voltage exceeding the set limits;

- is permanently on - voltage is within normal limits, the relay contact is closed, the load is on constantly;

- is blinking with a frequency of 1 Hz - the voltage is within the normal range, the reload time is counted (after switching on the relay or switching off the load due to voltage exceeding the set limits).

Indicator:
In standby mode, the indicator displays the current mains voltage.
If the mains voltage exceeds the set limits, the type of accident that occurred is displayed alternately with the voltage value:

- *below the set lower threshold;*
- *above the set upper threshold.*

In the case when the value of the voltage in the network has recovered to the permissible range and the countdown of the time until the restart has begun: the indicator alternately displays the failure that caused the shutdown and the time remaining before turning on.

ATTENTION!

For instant re-inclusion it is necessary to press the button short-run "-".

Displaying additional information

Additional information is viewed by short pressing of the "+" button in standby mode (the indicator will display the name of the item and then its value), the transition to the next item is performed by repertory dialing.
List of displayed information:

- *current voltage (main mode);*
- *last failure ("-L-" - at the lower threshold, "-H-" - at the upper threshold);*
- *minimum registered voltage (since the last reset) *;*
- *maximum recorded voltage (since the last reset) *;*
- *time in hours, elapsed since the last activation of the executive relay (contact closure), if 999 hours are exceeded, "- - -" is displayed;*

* Reset of statistical information (minimum / maximum voltage, number of shutdowns) is carried out by long pressing the "-" button in standby mode (after the countdown appears on the display, wait for the display "0", then release the button).

- *the number of disconnections of the executive relay (contact breaking) due to failure (since the last reset), if 999 is exceeded, "- - -" * is displayed;*
- *displayed if the number of shutdowns is more than 999, or the time of the last activation of the executive relay is more than 999 hours.*

ATTENTION!

10 seconds after the last pressing of the "+" button, the indicator automatically returns to display "-U-" (current voltage).

Programming

The menu is entered by simultaneously pressing the "+" and "-" buttons in standby mode. Then it is necessary to select the required parameter by means of the "+" or "-" button and enter by simultaneously short pressing "+" and "-".

To confirm (save) the updates, you must simultaneously press the buttons "+" and "-" again.
If access to a menu item is limited by a password, then upon entering the menu item, a password request "_ _ _" will appear. The password is entered sequentially, the choice of a character from "0" to "F" is carried out by the "+" button, the transition to the next character - "-" button. If the password is entered incorrectly, “Loc” will appear. After entering an incorrect password three times, access to the settings is blocked for 5 minutes, after which three attempts to enter again are given, etc. After entering the correct password, all menu items will be unlocked until entering standby mode.

Setting up the access password.
The access password settings is divided into two levels 0 and 1. Depending on the need for restriction, the appropriate level must be set in the “EPr” menu item. The level boundaries are shown in the figure below. The default password is "000".
Changing access password. To change the password, select the "EPS" menu item, enter the current password (if it has not been entered in the current menu session). The device will display "nP1", then enter a new password (select a character with the "+" button, move to the next character with the "-" button), after finishing entering the last character, press "-" - the inscription "nP2" will be displayed, after that it is necessary re-enter the new password. If the password is entered incorrectly again, the message "Err" will be displayed, the procedure must be repeated.

ATTENTION!
When connect to the power supply, if the voltage is within the normal range, the load will be connected after a time equal to the re-inclusion time. To turn on instantly, press the "-" button short-run.
Before connecting the product to the electrical network (in case of storage or transportation at low temperatures), to prevent damage caused by moisture condensation, keep the product in a warm room for at least 2 hours.
Menu structure:

Password protection levels
0 level
1st level

- setting of the lower voltage threshold,
- shutdown delay at the lower threshold, s
- setting of the upper voltage threshold, V
- shutdown delay at the lower threshold, s
- delay of automatic reclosing, min. seconds
- changing the current password (the default password is "000")
- setting the password protection level

Connection
1. Disconnect the supply voltage.
2. Install the voltage monitoring relay in the switchboard on a 35 mm DIN rail.
3. Connect according to the following connection diagram: to terminal L - supply phase, to terminal

N - neutral wire, to terminal L` - load.
4. Switch on the supply voltage.
5. Set the required values of the limiting thresholds using the control micro-buttons “-” and “+”.

Connection diagram

Connection recommendations
It is recommended to use wire PGV 1x2.5 ... 16mm2 for connection.
Shell dimensions

Terms of sale and disposal
Products are sold through the company's dealer network. Dispose of as electronic equipment.

Operating conditions
Climatic version NF4, operating temperature range from -25 ... + 50 ° C, relative air humidity up to 80% at 25 ° C. The working position in space is arbitrary. Height above sea level up to 2000m. The environment is explosion-proof, containing no dust in an amount that disrupts the operation of the relay, as well as aggressive gases and vapors in concentrations that destroy metals and insulation. The device complies with GOST IEC 60730-1 in terms of overvoltage and electromagnetic interference resistance.

Service

When servicing the product, it is necessary to comply with the "Safety regulations and technical operation of consumer electrical installations".
If visible external damage to the product shell is detected, its further running is prohibited.
Warranty service is carried out by the manufacturer of the product. Post-warranty service of the product is carried out by the manufacturer at the current rates.
Before being sent for repair, the product must be packed in the factory or other packaging that excludes mechanical damage.

Safety requirements
The running of the product must be carried out in accordance with the requirements set forth in the operation manual.
Before installation, make sure that there is no external damage to the device.
It is forbidden to operate a product that has external mechanical damage.
Do not install the relay without protection in places where water or sunlight is possible.
The relay must be installed and serviced by qualified personnel.
When connecting the relay, follow the connection diagram.

Warranty obligations

The warranty period use of the product is 24 months from the date of sale.
Service life is 10 years.
In the absence of a date of sale, the warranty period starts from the date of manufacture.

JLLC "Euroavtomatika FiF" guarantees the repair or replacement of a failed product, subject to the rules of operation and the absence of mechanical damage.
The following are not accepted for warranty repair:

- products presented without an enterprise passport;
- products that were in non-warranty repair;
- products with mechanical damage;
- products with damage to the holographic sticker;

The manufacturer reserves the right to make design changes, without notifying the consumer, in order to improve the quality and do not affect the technical characteristics and operation of the product.

Transportation and storage conditions

Transportation of the product can be carried out by any type of enclosed transport, ensuring the preservation of the packed products from mechanical stress and the effects of atmospheric precipitation. The product must be stored in the manufacturer's packaging in closed rooms with natural ventilation at an ambient temperature of minus 50 ° to plus 50 ° C and a relative humidity of no more than 80% at a temperature of + 25 ° C.

Do not dispose of this device with other waste!

In accordance with the law on used equipment, household electrical waste can be transferred free of charge and in any quantity to a special collection point. E-waste disposed of in landfills or abandoned in nature poses a threat to the environment and human health.

Approval certificate

The CP-721-1 voltage control relay was manufactured and taken in accordance with the requirements of TU (technical conditions) BY 590618749.027-2017 the current technical documentation and was declared fit for running.

No precious metals!

Technical Department control stamp Date of issue Date of sale