



# TECHNICAL MANUAL

## Voltage monitoring relay (1P+N) RV-32A

## 1 DESCRIPTION

Voltage monitoring relay (1P+N) RV-32A EKF is a microprocessor-controlled switching device designed for continuous voltage monitoring in single-phase AC networks, to protect electrical installations against voltage variations. The relay is installed into a two-wire circuit directly after the incoming circuit breaker, protecting the branch circuits.

The relay monitors the voltage in a preset range and trips after a preset time delay if the voltage is out of bounds, de-energizing downstream devices. Voltage range and trip time delay can be adjusted using the dials on the front panel of the relay. Voltage monitoring relays EKF comply with IEC 60947-5-1.

## 2 TECHNICAL DATA

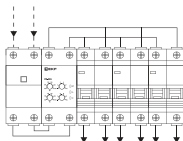
Table 1

| Characteristics                    | Values                        |
|------------------------------------|-------------------------------|
| Supply voltage $U_e$ , V AC        | 220-240                       |
| Rated frequency, Hz                | 50/60                         |
| Max. load current, A               | 32                            |
| Max. apparent power, kVA           | 7                             |
| Overvoltage range, V               | 225-265                       |
| Relay resets at                    | 0,97* of the voltage setpoint |
| Undervoltage range, V              | 165-215                       |
| Relay resets at                    | 1,03* of the voltage setpoint |
| Trip delay range, s                | 0,1-10                        |
| Reset time delay range, s          | 0,3-30                        |
| Voltage measurement error, %       | <1 (full scale)               |
| Trip delay accuracy, %             | ±10                           |
| Set-point accuracy, %              | 1 (full scale)                |
| Rated insulation voltage $U_i$ , V | 300                           |
| Contacts                           | 1 C/O                         |
| Degree of protection               | IP20                          |

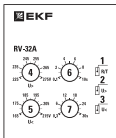
Table 1 continued

| Characteristics                  | Values                                                      |
|----------------------------------|-------------------------------------------------------------|
| Pollution degree                 | 3                                                           |
| Electrical endurance, cycles     | 100 000                                                     |
| Mechanical endurance, cycles     | 1 000 000                                                   |
| Max. altitude above sea level, m | 2000                                                        |
| Operating temperature, °C        | -5 to +50                                                   |
| Storage temperature, °C          | -25 to +75                                                  |
| Connection                       | Screw terminals, max. wire cross-section 10 mm <sup>2</sup> |
| Tightening torque, N*m           | 2,5                                                         |
| Mounting                         | 35 mm DIN rail                                              |

## Wiring diagram

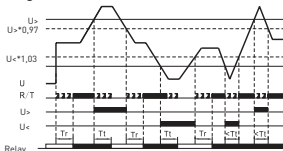


## Control panel



1. Relay status yellow LED
2. Overvoltage red LED
3. Undervoltage red LED
4. Overvoltage setting dial
5. Undervoltage setting dial
6. Trip timer setting dial
7. Reset timer setting dial

## Functional diagram



Tr - delay on; Tt - delay off

## Setup

- Install and secure the relay in the intended location.
- Connect the relay as per wiring diagram.
- Set the desired voltage setpoints.
- Set the desired trip/reset timing.

## Operation

If the supply voltage is within the normal range, the relay will activate and power the line. If voltage is out of bounds, the relay will open, disconnecting the load. Set the trip delay and voltage setpoints using the dials.

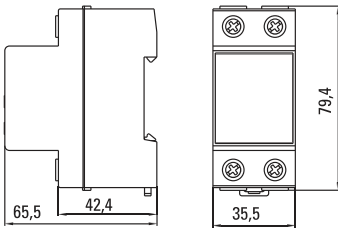
Once the normal supply voltage is restored, the relay will automatically turn the load back on after a preset countdown.

## LED indication

Yellow LED "R/T": relay on – LED lit;  
trip delay countdown running – LED is blinking.

Red LED "U>": overvoltage – LED is lit; no overvoltage – LED is off.  
Red LED "U<": undervoltage – LED is lit; no undervoltage – LED is off.

### 3 OVERALL DIMENSIONS



### 4 OPERATING CONDITIONS

Operating temperature: -5°C to +50°C

Max. altitude above sea level: 2000 m.

### 5 DELIVERY SCOPE

Relays are supplied in an individual package. Scan the QR-code on the insert or on the inside of the package for all available documentation.

### 6 SAFETY REQUIREMENTS

Do not operate relays with visible mechanical damage.

The relays conform to IEC 61140 Class 0 for protection against electrical shock and must be installed in Class 1 enclosures or higher.

## **7 MAINTENANCE**

For maintenance, follow national safety rules for operation of electrical Installations.

Under normal operating conditions, visually inspect the relay and check the set modes and trigger time every 6 months. Tighten the screw terminals, as they may become loose due to cyclical changes in the ambient temperature and material flow.

The relay must be installed and maintained by qualified personnel. Follow the wiring diagram when installing the relay.

Do not install the relay without protective cover in any area exposed to water or direct sunlight.

## **8 TRANSPORTATION AND STORAGE**

Relays can be transported by any means of enclosed transport that protects the packaged goods from mechanical impact and weather exposure.

Relays shall be stored indoors, in their original packaging, at the ambient temperatures from -25°C to +75°C and max. relative humidity of 80% at +25°C.

## **9 DISPOSAL**

Life-expired and failed products shall be disposed of in compliance with the effective national and local laws and regulations. To dispose of the product, send it to an authorized company for recycling in compliance with the effective national and local laws and regulations.

## 10 MANUFACTURER'S WARRANTY

The manufacturer guarantees the relays comply with the declared characteristics, provided that the consumer observes the operation, transportation and storage conditions and requirements.

Warranty period: 7 years from the date of sale specified in the sales receipt.

Shelf life: 7 years from the date of manufacture specified on the product package or housing.

Service life: 10 years.

**Manufacturer:** OOO Electroresheniya, Otradnaya st., 2b/9, 127273, Moscow, Russia, tel. +7 (495) 788-88-15.

**Importer and EKF trademark service representative:**

EKF ELECTRICAL SOLUTION – FZCO, Dubai Silicon Oasis, DDP, Building A2, Dubai, United Arab Emirates, tel. +971-4-547-06-18.

**Importer and EKF trademark service representative on the territory of the Republic of Kazakhstan:**

TOO «Energoresheniya Kazakhstan», Kazakhstan, Almaty, Bostandyk district, Turgut Ozal st., 247, apt 4.

## 11 CERTIFICATE OF ACCEPTANCE

Voltage monitoring relay (1P+N) RV-32A EKF has been manufactured in compliance with the laws and regulations in effect and has been approved for operation.

Date of manufacture: for information, refer to the product package.

Quality control stamp





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# EKF