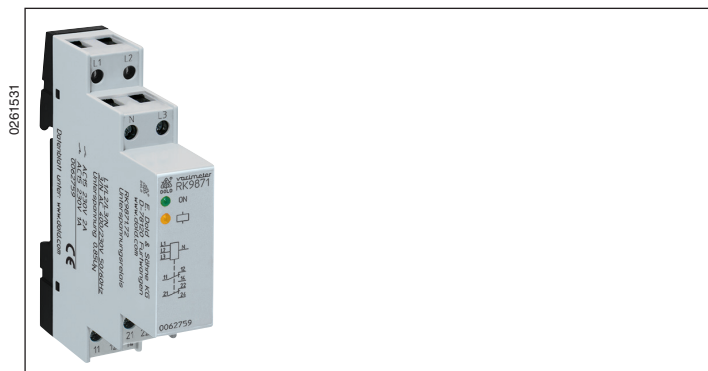


VARIMETER Undervoltage Relay RK 9871

Translation
of the original instructions



0261531

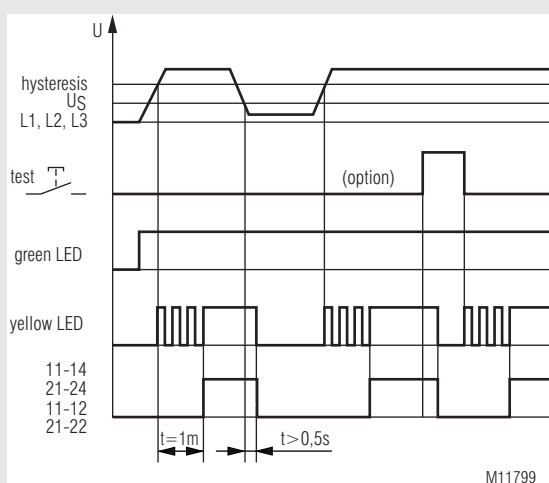
Your Advantages

- Higher safety in buildings

Features

- According to IEC/EN 60255-1
- For installations according to DIN VDE 0100-718:2005-10 and DIN VDE 0108-100:2005-01
- Detection of undervoltage in 3-phase systems
- Without separately auxiliary voltage (internal supply from all 3 phases)
- LED indication for operation voltage and contact position
- De-energised on trip
- RK 9871.71: 1 changeover contact
- RK 9871.72: 2 changeover contacts
- With fixed time delay of 0.5 s for fault indication
- With fixed time delay of 1 min for reset
- With fixed response value at AC 195.5 V
- As option with test-button for function control
- Width 17.5 mm

Function Diagramm



M11799

Approvals and Markings



Application

Monitoring of undervoltage in 3 phase voltage systems and switch over to emergency supply

For installations according to

- DIN VDE 0108-100:2005-01 (Emergency lightings)
- DIN VDE 0100-718:2005-10 (Locations for a larger number of people)

Function

When connecting the measuring voltage to the measuring inputs L1-L2-L3 at healthy voltage the output relay switches on after the voltage is healthy for at least 1 min.

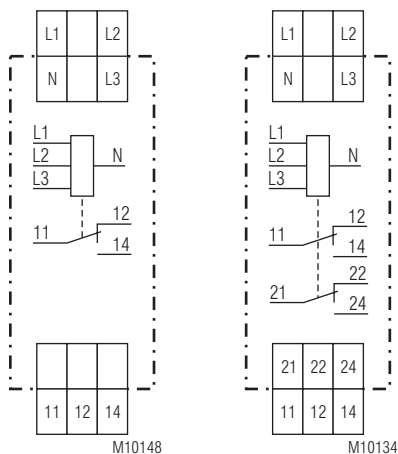
During this time delay of 1 min the yellow led flashes. After detection of an undervoltage on one or several phases for at least 0.5 sec the output relay de-energizes.

The undervoltage relay measures the arithmetic mean value of each of the three phases against neutral.

To measure single-phase voltage terminals L1, L2, L3 have to be linked together.

If a feed back voltage is generated by the load, that is higher then the setting value U_s , the unit will not detect phase failure.

Circuit Diagrams



M10148

M10134

RK 9871.71

RK 9871.72

Connection Terminals

| Terminal designation | Signal description |
|----------------------|--------------------|
| L1, L2, L3, N | Supply voltage |
| 11, 12, 14 | Output relay 1 |
| 21, 22, 24 | Output relay 2 |

Safety Notes

- Never clear a fault when the device is switched on.
- The user must ensure that the device and the necessary components are mounted and connected according to the locally applicable regulations and technical standards.
- Adjustments may only be carried out by instructed specialist staff, while the applicable safety rules must be observed.

Technical Data

Input

Measuring voltage =
supply voltage

Nominal voltage U_N : 3/N AC 400/230V
 Max. overload: 1.15 U_N continuous
 Nominal consumption: Approx. 6 VA
 Nominal frequency: 50 / 60 Hz
 Measuring frequency range: 45 ... 65 Hz
 Response value: 195.5 V fixed
 Hysteresis: Approx. 5 %
 Overvoltage category: III (according to IEC 60664-1)
 Accuracy: ± 5 %
 Repeat accuracy: < 2 %
 Temperature influence: < 1 %

Output

Contacts

RK 9871.71: 1 changeover contact
 RK 9871.72: 2 changeover contacts
 Thermal current I_{th} : 4 A
 Switching capacity
 To AC 15:
 NO contact: 2 A / AC 230 V IEC/EN 60947-5-1
 NC contact: 1 A / AC 230 V IEC/EN 60947-5-1
 Electrical life
 at 1 A, AC 230 V $\cos \varphi$: 1 x 10⁶ switching cycles IEC/EN 60947-5-1
 Short circuit strength
 Max. fuse rating: 4 A gG / gL IEC/EN 60947-5-1
 Mechanical life: 1 x 20⁶ switching cycles

General Data

Nominal operating mode: Continuous operation
 Temperature range:
 Operation: - 25 ... + 55 °C
 Storage: - 25 ... + 70 °C
 Altitude: ≤ 2000 m
 Clearance and creepage distance
 Rated impulse voltage /
 pollution degree: 4 kV / 2 IEC 60664-1
 EMC
 Electrostatic discharge (ESD): 8 kV (air) IEC/EN 61000-4-2
 Fast transients: 2 kV IEC/EN 61000-4-4
 Surge voltage
 Between
 wires for power supply: 1 kV IEC/EN 61000-4-5
 Between wire and ground: 2 kV IEC/EN 61000-4-5
 HF-wire guided: 10 V IEC/EN 61000-4-6
 Interference suppression: Limit value class B EN 55011
 Degree of protection
 Housing: IP 40 IEC/EN 60529
 Terminals: IP 20 IEC/EN 60529
 Housing: Thermoplastic with V0 behaviour acc. to
 UL subject 94
 Vibration resistance:
 Amplitude 0.35 mm,
 Frequency 10 ... 55 Hz, IEC/EN 60068-2-6
 25 / 060 /04 IEC/EN 60068-1
 Climate resistance:
 Terminal designation:
 EN 50005
 Wire connection:
 1 x 0,34 ... 2,5 mm² solid or
 1 x 0,34 ... 2,5 mm² flexible with sleeve
 DIN 46228-1/-2/-3/-4
 Insulation of wires or
 sleeve length 7 mm
 Wire fixing: Captive plus-minus terminal screws M2,5
 Mounting: DIN-rail IEC/EN 60715
 Weight: Approx. 70 g

Dimensions

Width x height x depth: 17.5 x 90 x 66 mm

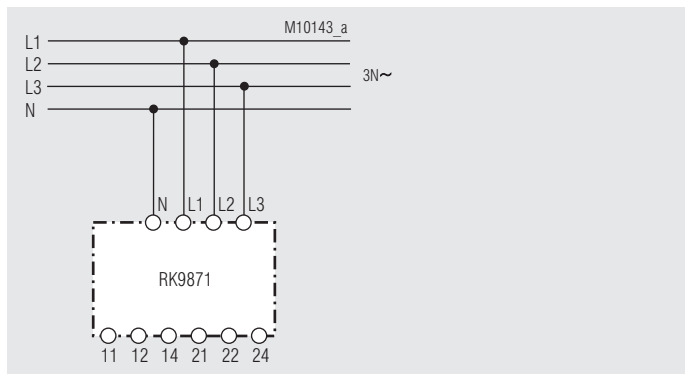
Standard Type

RK 9871.72 3/N AC 400/230V 50 / 60 Hz
 Article number: 0062759
 • Output: 2 changeover contact
 • Nominal voltage U_N : 3/N AC 400/230V
 • Width: 17.5 mm

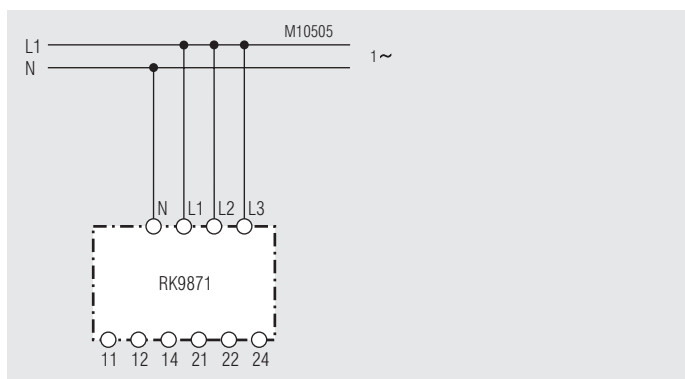
Variant

RK 9871.72/100: With test-button for simulation of
 undervoltage

Connection Examples



3-phase



1-phase