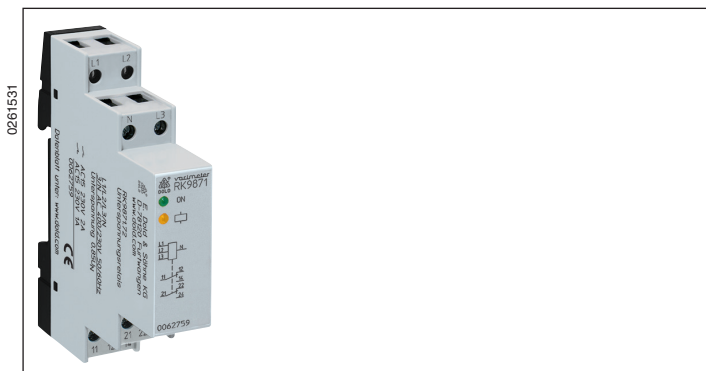


VARIMETER Undervoltage Relay RK 9871

Translation
of the original instructions



0261531

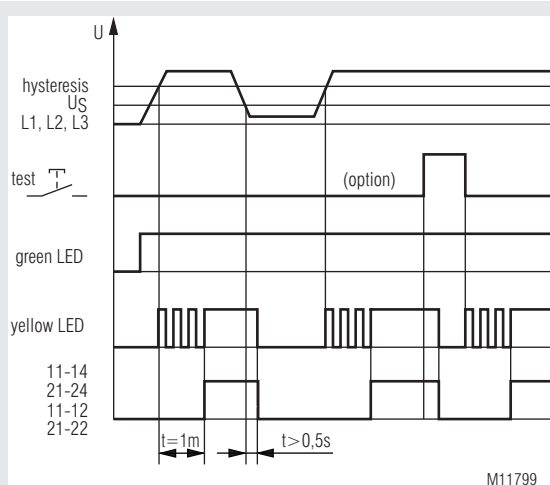
Your Advantages

- Higher safety in buildings

Features

- According to IEC/EN 60255-1
- For installations according to DIN VDE 0100-718 and DIN VDE 0108-100
- Detection of undervoltage in 3-phase systems
- Without separately auxiliary voltage (internal supply from all 3 phases)
- LED indication for für 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



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 (emergency lightings)
- DIN VDE 0100-718 (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.

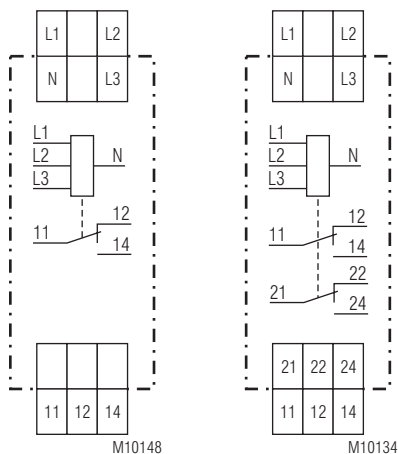
Indication

LED green:	On, when supply connected
LED yellow:	On, when the output relay is energized
LED yellow:	Flashes during 1 min reset delay time

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.

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

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 10^6 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 10^6 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 mm ² solid or 1 x 0,34 ... 2,5 mm ² 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

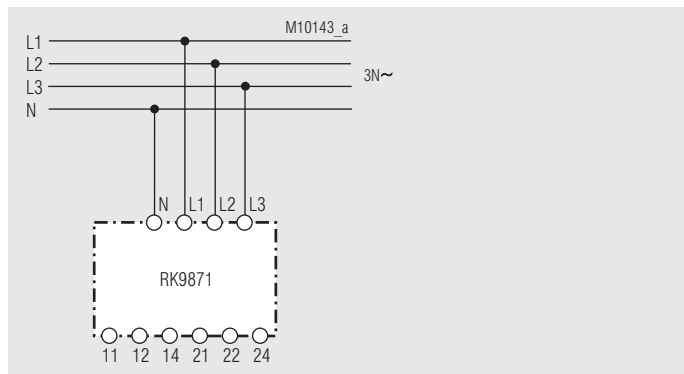
Standard Type

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	

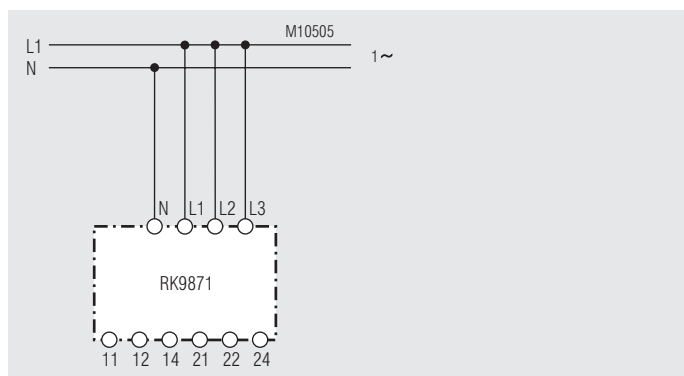
Variant

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



3-phase



1-phase