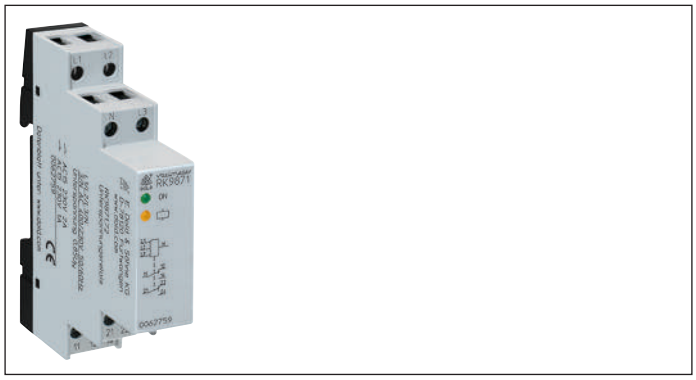
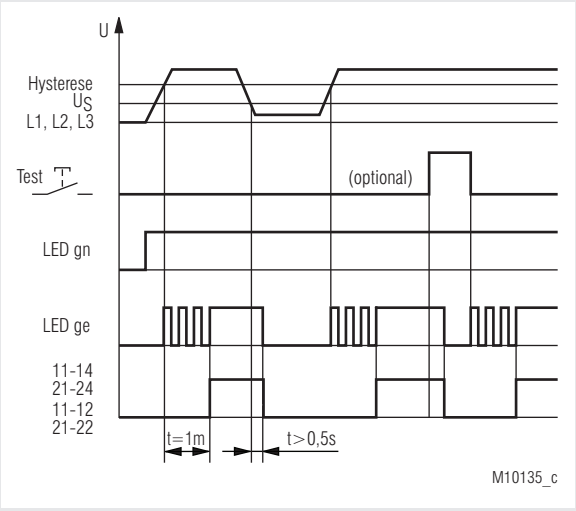
VARIMETER
Undervoltage Relay
RK 9871

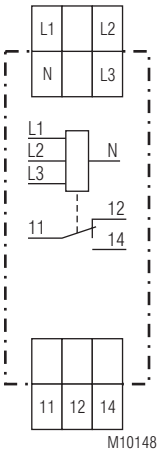
0261531



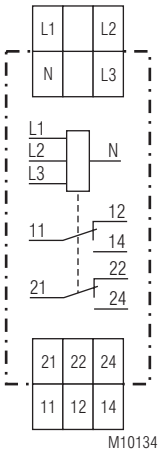
Function Diagramm



Circuit Diagrams



RK 9871.71



RK 9871.72

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 (replacement of DIN VDE 0108)
- 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 0.5s for fault indication
- With fixed time delay of 1min for reset
- With fixed response value at AC 195.5V
- As option with test-button for function control
- Width 17,5 mm

Approvals and Markings

CE

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)
- 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-energises.
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 1min 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.

All technical data in this list relate to the state at the moment of edition. We reserve the right for technical improvements and changes at any time.

Technical Data

Input

Measuring voltage = supply voltage	
Nominal voltage U_N:	3/N AC 400/230V
Max. overload:	1.15U_N continuous
Nominal consumption:	ca. 6 VA
Nominal frequency:	50 / 60Hz
Measuring frequency range:	45 ... 65 Hz
Response value:	195.5V 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 60 947-5-1
NC contact:	1 A / AC 230 V	IEC/EN 60 947-5-1
Electrical life		
to AC 15 at 1 A, AC 230 V:	1 x 10^5 switching cycles	IEC/EN 60 947-5-1
Short circuit strength		
max. fuse rating:	4 A gL	IEC/EN 60 947-5-1
Mechanical life:	1 x 20^6 switching cycles	

General Data

Nominal operating mode:	continuous operation	
Temperature range:		
operation:	- 25 ... + 55°C	
storage:	- 25 ... + 70°C	
Clearance and creepage distance		
rated impulse voltage / pollution degree:	4 kV / 2	IEC 60 664-1
EMC		
Electrostatic discharge (ESD):	8 kV (air)	IEC/EN 61 000-4-2
Fast transients:	2 kV	IEC/EN 61 000-4-4
Surge voltage between		
wires for power supply:	1 kV	IEC/EN 61 000-4-5
between wire and ground:	2 kV	IEC/EN 61 000-4-5
HF-wire guided:	10 V	IEC/EN 61 000-4-6
Interference suppression:	Limit value class B	EN 55 011
Degree of protection		
Housing:	IP 40	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529
Housing:	thermoplastic with V0 behaviour acc. to UL subject 94	
Vibration resistance:	Amplitude 0.35 mm, Frequency 10 ... 55 Hz,	IEC/EN 60 068-2-6
Climate resistance:	25 / 060 /04	IEC/EN 60 068-1
Terminal designation:	EN 50 005	
Wire connection:	1 x 4 mm² solid or 1 x 2,5 mm² stranded wire with sleeve DIN 46 228-1/-2/-3/-4	
Wire fixing:	Plus-minus terminal screws M3,5 box terminals with wire protection	
Mounting:	DIN-rail	IEC/EN 60 715
Weight:	approx. 70 g	

Dimensions

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

Standard Type

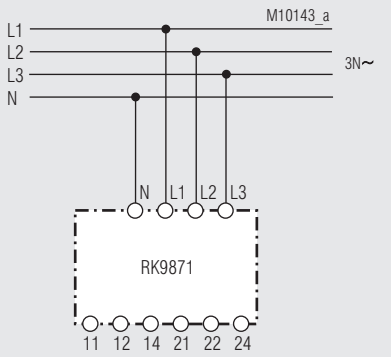
RK 9871.72 3/N AC 400/230V 50 / 60 Hz

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

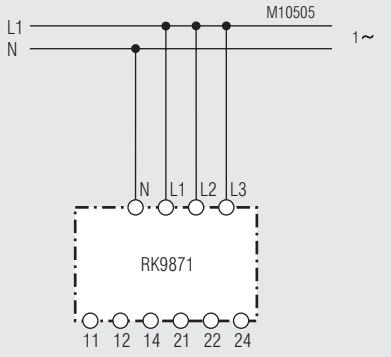
Variant

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

Connection Examples



3-phase



1-phase