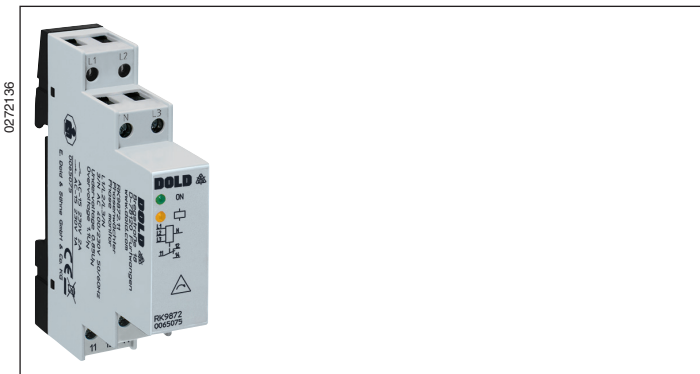


VARIMETER Phase Monitor RK 9872

Translation
of the original instructions

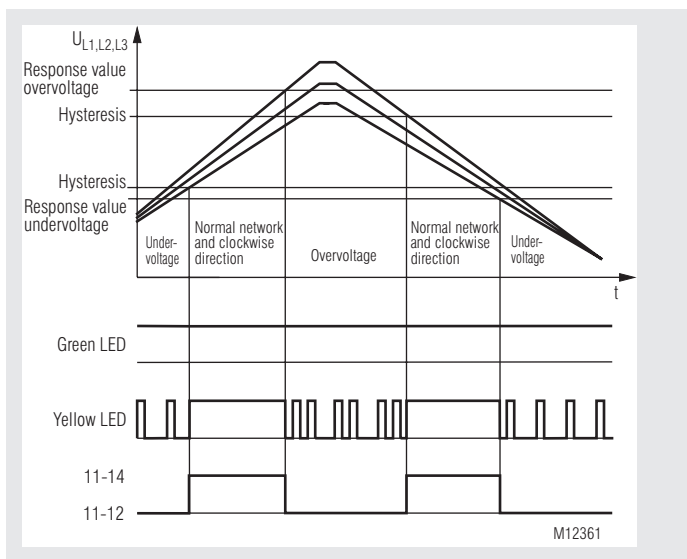


Product Description

The space saving phase monitor RK9872/800 from the Varimeter family monitors under- and overvoltage as well as phase sequence in 3-phase systems.

The response values are fixed. When connecting the measuring voltage to the inputs L1-L2-L3 and fault free system the relay switches on. When the measuring voltage is connected the unit checks a clockwise phase sequence. If this is not the case the yellow LED flashes. The output relay will not energise. After detection of under- or overvoltage on one or more phases for more the 5 sec. the relay switches off. The relay stays off for at least 2 seconds. The phase monitor measures the arithmetic mean value of the 3 phases against neutral.

Function Diagramm



Your Advantages

- Reliability monitoring of 3- or 1-phase voltage systems on:
 - Undervoltage
 - Overvoltage
 - Phase sequence (at 3-phase voltage system)
- Fast fault location
- Preventive maintenance
- Space saving

Features

- According to IEC/EN 60255-1
- Detection of under-/overvoltage and phase sequence in 3-phase voltage systems
- Without separate auxiliary voltage
- LED-Indication for operation voltage and contact position
- De-energized on trip
- With fixed response value for undervoltage
- With fixed response value for overvoltage
- Width: 17,5 mm

Approvals and Markings



Application

Monitoring of voltage systems on undervoltage, overvoltage and phase sequence, e. g. for applications with squirrel cage motors and -machines, cranes, elevator, escalator, pumps, aircondition.

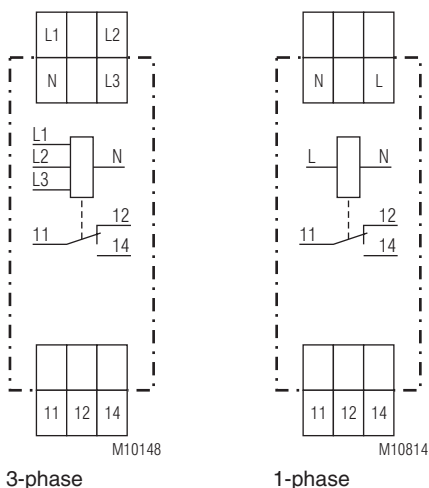
Indicators

- | | |
|-------------|---|
| Green LED: | On, when nominal voltage connected |
| Yellow LED: | On, when corresponding output relay is active |
| Yellow LED: | Flashes at failure with code: |
| | 1 x at undervoltage |
| | 2 x at overvoltage |
| | 3 x at phase reversal |

Safety Notes

- Faults must only be removed when the relay is disconnected.
- The user has to make sure that the device and corresponding components are installed and wired according to the local rules and law (TUEV, VDE, Health and safety).
- Settings must only be changed by trained staff taking into account the safety regulations. Installation work must only be done when power is disconnected.
- If the connected system creates a reverse voltage above the undervoltage response value the failure cannot be detected.

Circuit Diagram



Connection Terminals

Terminal designation	Signal description
L1	Phase voltage L1
L2	Phase voltage L2
L3	Phase voltage L3
L	Phase voltage L
N	Neutral
11, 12, 14	Changeover contact (output relay)

Technical Data

Input

Measuring voltage = supply voltage

Nominal voltage U_N :	3/N AC 400/230V
Max. overload:	1.15 U_N continuously
Nominal consumption:	Approx. 6 VA
Nominal frequency:	50 / 60 Hz
Measuring frequency range:	45 ... 65 Hz

	3-phase		1-phase	
	3N AC 400 / 230 V	AC 400 V	AC 110 V	
Undervoltage:	195.5 V	360 V	99 V	
Overvoltage:	253 V	440 V	121 V	
Hysteresis:	2.5 %	1.5 %	2.0 %	
Accuracy:				± 3%
Repeat accuracy:				< 2%
Temperature influence:				< 1%

*) the response values are fixed and measured against N

Reaction time:	≤ 50 ms
Overvoltage category:	III (according to IEC 60664-1)

Output

Contacts:	1 changeover contact	
Thermal current I_{th} :	4 A	
Switching capacity		
To AC 15:		
NO contacts:	2 A / AC 230 V	IEC/EN 60947-5-1
NC contacts:	1 A / AC 230 V	IEC/EN 60947-5-1
Electrical life		
To AC 15 at 1 A, AC 230 V:	1 x 10 ⁵ switch. cycl.	IEC/EN 60947-5-1
Mechanical life:	1 x 10 ⁶ switching cycles	

Technical Data

General Data

Nominal operating mode:	Continuous operation
Temperature range:	
Operation:	- 25 ... + 60 °C
Storage:	- 25 ... + 70 °C

Clearance and creepage distance

Contact / measuring voltage		
Rated impuls voltage / pollution degree:	6 kV / 2	IEC 60664-1

EMC

Electrostatic discharge (ESD):	8 kV (air)	IEC/EN 61000-4-2
HF-HF irradiation		
80 MHz ... 2.7 GHz:	10 V / m	IEC/EN 61000-4-3
Fast transients:	2 kV	IEC/EN 61000-4-4
Surge voltages		
Between 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

Enclosure:	IP 40	IEC/EN 60529
Terminals:	IP 20	IEC/EN 60529

Housing:

Thermoplastic with VO 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
EN 50005

Climate resistance:

Terminal designation:

Wire connection:

Fixed screw terminals

Cross section: 0.34 ... 2.5 mm² (AWG 22 - 14) solid or 0.34 ... 2.5 mm² (AWG 22 - 14) stranded wire with and without ferrules

Stripping length:

7 mm

Fixing torque:

0.5 Nm

EN 60999-1

Wire fixing:

Captive slotted screw / 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

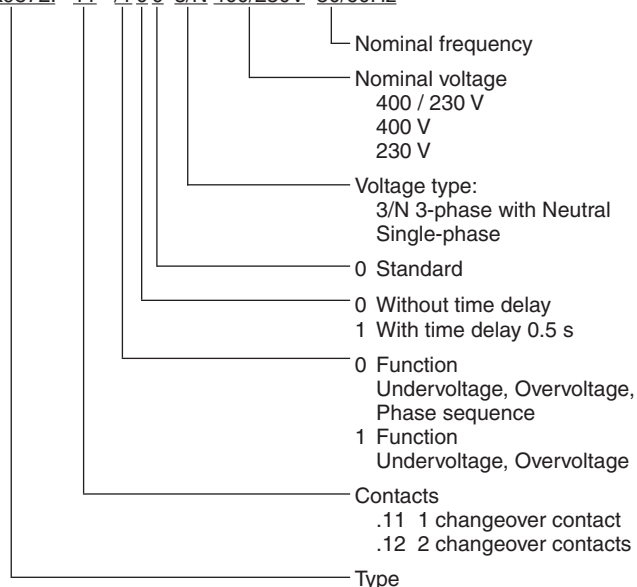
RK 9872.11	3/N AC 400/230 V	50 / 60 Hz
Article number::	0065075	
• Output:	1 changeover contact	
• Nominal voltage U_N :	3/N AC 400/230 V	
• Width:	17.5 mm	

Variant

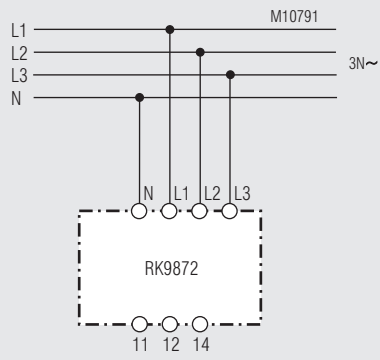
RK 9872.11/100: Undervoltage / overvoltage monitoring

Ordering example for variant

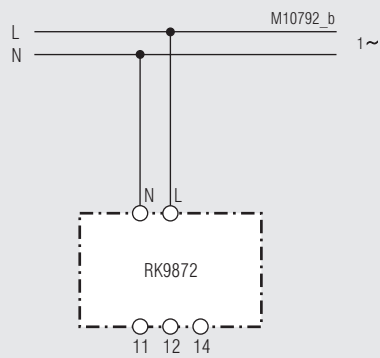
RK9872. 11 /1 0 0 3/N 400/230V 50/60Hz



Connection Examples



3-phase



1-phase

