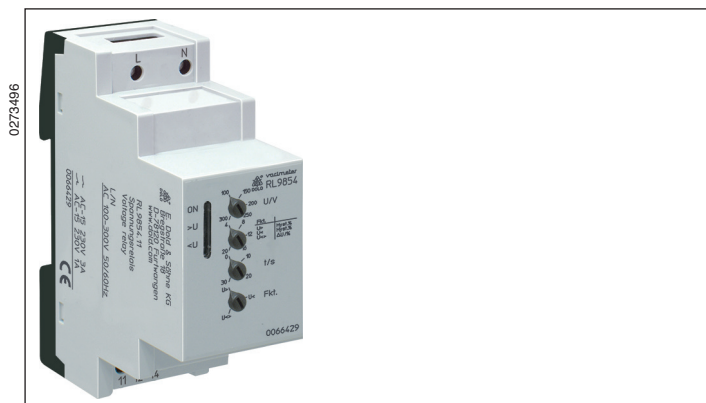


VARIMETER Voltage Relay RL 9854



Your Advantages

- Preventive maintenance
- For better productivity
- High repeat accuracy
- Wide measuring voltage range
- Easy setting

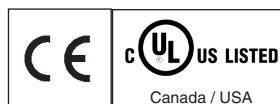
Features

- According to IEC/EN 60 255-1
- For monitoring AC single phase with 50 /60 Hz
- Detection of
 - Overvoltage
 - Undervoltage
 - Voltage range excess in single-phase AC voltage systems
- No separate auxiliary necessary
- Output: changeover contact
- De-Energized on trip
- Adjustable switching voltage
- Adjustable hysteresis for reset
- Adjustable switching delay
- Fast fault detection
- Width: 35 mm

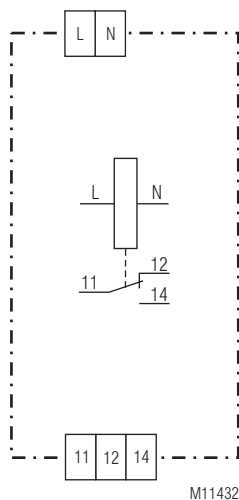
Product Description

The measuring relay RL 9854 of the VARIMETER series monitors over-voltage, undervoltage and voltage range in single-phase systems. The measurement is very simple and without extensive wiring as there is no auxiliary power supply necessary. The monitoring functions are easily selectable using a single turn switch without complex menu structure. The early detection of up-coming break downs and preventive maintenance avoid expensive damages. As user you profit from the reliability and availability of your plant.

Approvals and Markings



Circuit Diagram



Application

- Monitoring of voltage systems to detect over- and undervoltage
- Switch over to emergency supply after fault detection

Function

When monitoring overvoltage, undervoltage and voltage range, the exceeding of the setting values above or below the thresholds is indicated by flashing of the voltage indicating LED. After the time delay the voltage indicating is continuously on and the relay de-energises. If the voltage returns to normal value, the LED goes immediately off and the output relay energises.

The output relay is de-energized on trip.

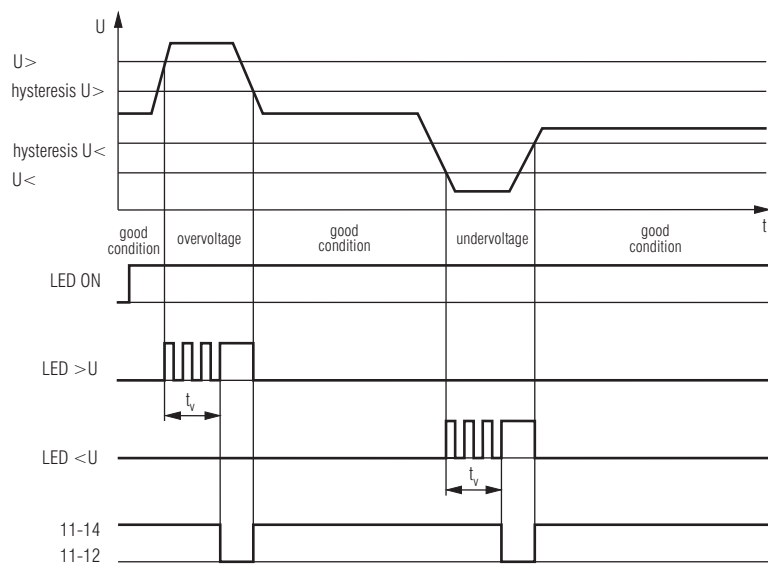
In the voltage range monitoring mode the nominal voltage range $U \pm \Delta U$ is adjustable. An alarm is evoked in case the voltage leaves this monitoring range. The hysteresis for switching back into good condition is half the value set by the potentiometer ΔU .

Connection Terminals

Terminal designation	Signal description
L	Phase voltage
N	Neutral
11, 12, 14	Changeover contact (outputrelays)

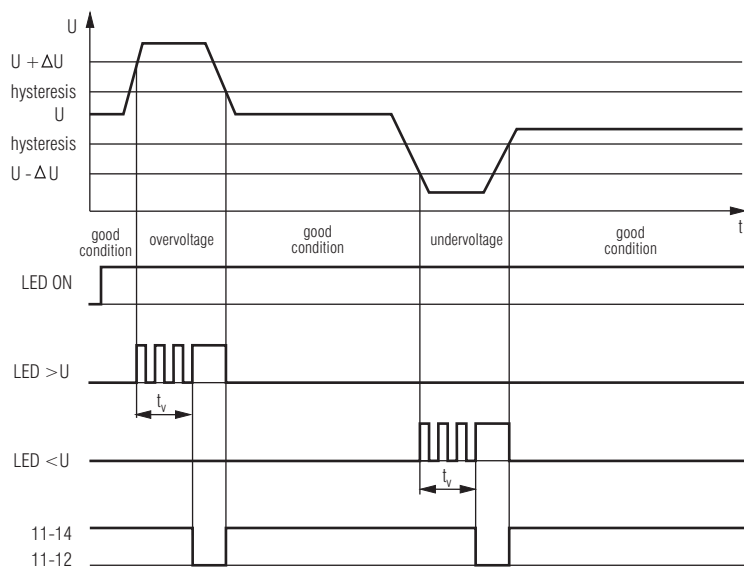
Indicator

green LED „ON“:	on, when supply connected
red LED „>U“:	on, when overvoltage
red LED „<U“:	on, when undervoltage



M11475_c

Monitoring function: overvoltage / undervoltage; rotary switch: „U>“ / „U<“



M11423_c

Monitoring function: voltage range; rotary switch: „U<>“

Notes

During initialisation the relay recognises the mains frequency (50 Hz or 60 Hz).

The following monitoring functions are selectable using the 3-step function switch:

Function select	Monitoring function
U>	Overvoltage
U<	Undervoltage
U<>	Voltage range

Technical Data

Input

Operating voltage U_B:	AC 100 ... 300 V, AC 45 ... 135 V single-phase with neutral
Voltage rated operating U_e:	AC 118 ... 273 V, AC 53 ... 123 V
Nominal frequency:	50 / 60 Hz
Frequency range:	45 ... 65 Hz
Nominal consumption:	approx. 7 VA

Output

Contact:	1 changeover contact
Contact material:	AgNi
Switching voltage:	AC 250 V
Thermal current I_{th}:	5 A
Switching capacity to AC 15	
NO contact:	3 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:	typ. 3 x 10 ⁵ switching cycles
Short circuit strength max. fuse rating:	5 A gL IEC/EN 60 947-5-1
Mechanical life:	> 30 x 10 ⁶ switching cycles

Measuring circuit

Measuring voltage:	infinite adjustable AC 100 ... 300 V, AC 45 ... 135 V
Hysteresis:	infinite adjustable 4 ... 20 %
Switching delay t_v:	infinite adjustable instantaneous, 2 ... 30 s
Release delay:	10 s
Repeat accuracy:	± 2 %
Temperature influence:	± 1 %
Attention: The combination of adjusted switching voltage U and hysteresis ΔU must be within the measuring range.	

General Data

Operating mode:	continuous operation
Temperature range	
Operation:	- 20 ... + 55 °C
Storage:	- 25 ... + 60 °C
Relative air humidity:	93 % at 40 °C
Altitude:	< 2,000 m
Clearance and creepage distances	
Rated impuls voltage/ Pollution degree:	6 kV / 2 IEC 60 664-1
EMC	
Electrostatic discharge (ESD):	8 kV (air) IEC/EN 61 000-4-2
HF irradiation	
80 MHz ... 1 GHz:	12 V / m IEC/EN 61 000-4-3
1 GHz ... 2,7 GHz:	10 V / m IEC/EN 61 000-4-3
Fast transients:	2 kV IEC/EN 61 000-4-4
Surge between	
wires for power supply:	2 kV IEC/EN 61 000-4-5
between wire and ground:	4 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

Technical Data

Degree of protection:

Housing:	IP 40	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529

Enclosure:

Thermoplastic with V0 behaviour
acc. to UL subject 94

Vibration resistance:

Amplitude 0.35 mm
Class I IEC/EN 60 255-21

Climate resistance:

20 / 055 / 04 IEC/EN 60 068-1

Terminal designation:

EN 50 005

Wire connection:

DIN 46 228-1/-2/-3/-4

Fixed screw terminals

Cross section: 0.2 ... 4 mm² (AWG 24 - 12) solid or
0.2 ... 2.5 mm² (AWG 24 - 12)
stranded wire with and without ferrules

Stripping length:

7 mm

Fixing torque:

0.6 Nm EN 60 999-1

Wire fixing:

Captive slotted screw / M2.5

Mounting:

DIN rail IEC/EN 60 715

Weight:

approx. 105 g

Dimensions

Width x height x depth:	35 x 90 x 71 mm
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UL-Data

ANSI/UL 60947-1, 5th Edition
ANSI/UL 60947-5-1, 3rd Edition

CAN/CSA-C22.2 No. 60947-1-13, 2nd Edition
CAN/CSA-C22.2 No. 60947-5-1-14, 1st Edition

Switching capacity:

Pilot duty B300
5A 240Vac Resistive, G.P.
5A 30Vdc Resistive or G.P.
5A 250Vac G.P.

Wire connection:

60°C / 75°C copper conductors only
AWG 24 - 12 Sol/Str Torque 0.6 Nm



Technical data that is not stated in the UL-Data, can be found in the technical data section

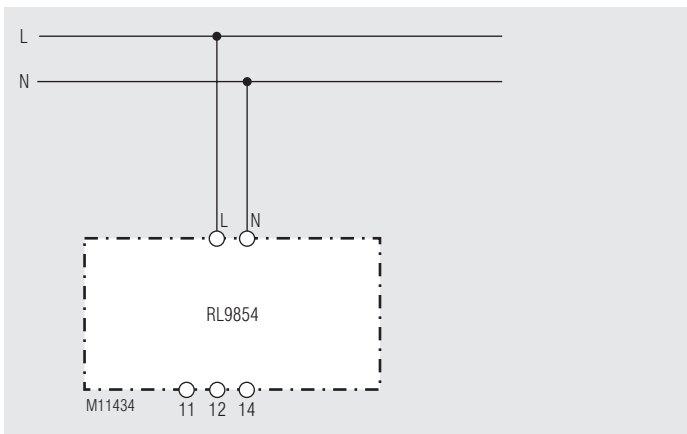
Standard Type

RL 9854.11/61	AC 100 ... 300 V	4 ... 20 %	0 ... 30 s
Article number:	0066429		
• Output:	1 changeover contact		
• Measuring voltage:	AC 100 ... 300 V		
• Hysteresis:	4 ... 20 %		
• Switching delay:	0 ... 30 s		
• Width:	35 mm		

Ordering Example

RL 9854	.11	/00	/61	AC 100 ... 300 V	4 ... 20 %	0 ... 30 s
						Switching delay
						Hysteresis
						Operating voltage AC 100 ... 300 V AC 45 ... 135 V
						UL approval
						Operation mode/Outputs 0: De-Energized on trip 1: Energized on trip
						Contacts
						Type

Connection Example



Single-phase connection