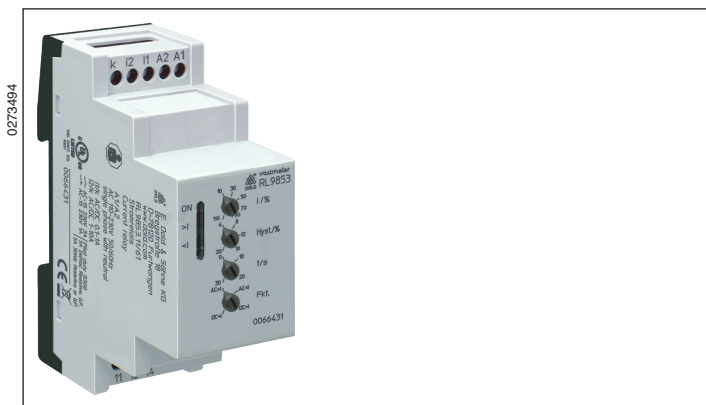


VARIMETER Current Relay RL 9853

Translation
of the original instructions



Your Advantages

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

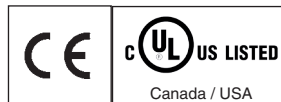
Features

- According to IEC/EN 60255-1
- For monitoring of current in DC and AC systems
- Detection of over- or undercurrent in AC- or DC mains
- Galvanic separation between auxiliary circuit - measuring circuit
- Output: 1 changeover contact
- De-Energized on trip
- Adjustable switching current
- Adjustable hysteresis for reset
- Adjustable switching delay
- Fast fault detection
- Width: 35 mm

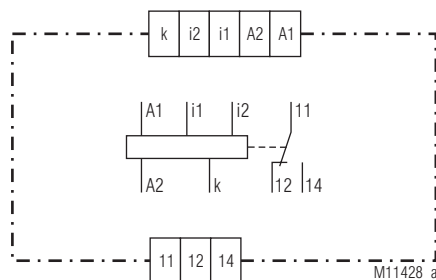
Product Description

The measuring relay RL 9853 of the VARIMETER series monitors overcurrent and undercurrent in AC or DC current systems. 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



Terminals i1/k: 2 mA ... 11 mA; 0,1 A ... 1,1 A
Terminals i2/k: 10 mA ... 110 mA; 1 A ... 10 A

Application

- Monitoring of current in DC and AC systems to identify overcurrent and undercurrent
- Switch over to emergency supply after fault detection

Indicator

Green LED „ON“:	On, when supply connected
Red LED „>I _N “:	On, when overcurrent
Red LED „<I _N “:	On, when undercurrent

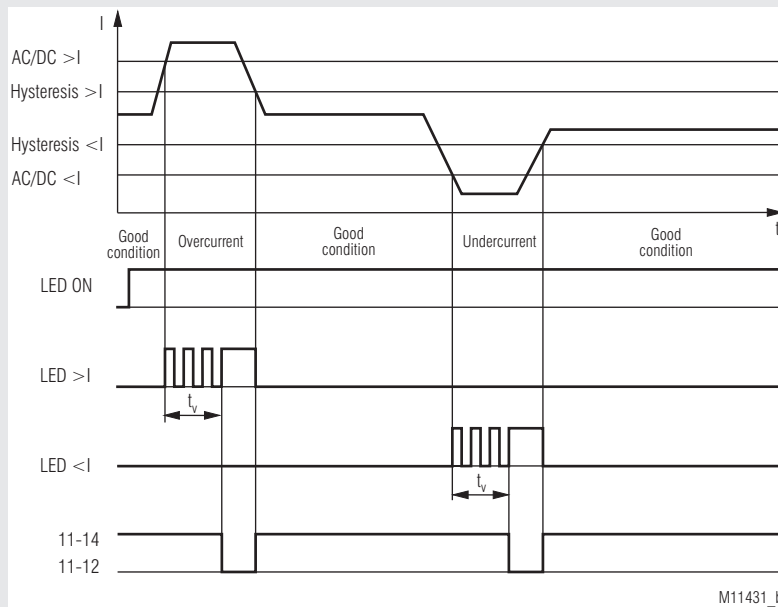
Connection Terminals

Terminal designation	Signal description
A1, A2	Auxiliary voltage
i1, i2, k	Current measuring input
11, 12, 14	Changeover contact (outputrelays)

Function

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

Function Diagram



M11431_b

Notes

The current to be measured can also be sourced from the auxiliary supply. In this case the galvanic separation between auxiliary supply and measuring circuit is without effect. Depending on the required net form the following monitoring functions can be set using the function switch:

Function select	Type of current	Monitoring function
AC > I_N	AC	Overcurrent
AC < I_N	AC	Undercurrent
DC > I_N	DC	Overcurrent
DC < I_N	DC	Undercurrent

AC/DC measuring ranges (variant 100 mA)

Terminals	Measuring range		Internal resistance	Max. therm.contin. current
i1/k	DC	2 mA ... 11 mA	10 Ω	50 mA
	AC	2 mA ... 11 mA		
i2/k	DC	10 mA ... 110 mA	1,0 Ω	200 mA
	AC	10 mA ... 110 mA		

AC/DC measuring ranges (variant 10 A)

Terminals	Measuring range		Internal resistance	Max. therm.contin. current
i1/k	DC	0.1 A ... 1.1 A	40 m Ω	2 A
	AC	0.1 A ... 1.1 A		
i2/k	DC	1 A ... 10 A	4 m Ω	12 A
	AC	1 A ... 10 A		

Technical Data

Auxiliary circuit

Auxiliary voltage U_H:	DC 24 AC 110 ... 230 V 1-phase with neutral
Voltage range:	0.8 ... 1.1 U_H
Nominal frequency:	50 / 60 Hz
Frequency range (AC):	45 ... 65 Hz
Nominal consumption:	Approx. 5 VA

Input

Operating current I_B:	AC/DC 2 mA ... 100 mA, 100 mA ... 10 A
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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 60947-5-1
NC contact:	1 A / AC 230 V	IEC/EN 60947-5-1
Electrical life To AC 15 at 1 A, AC 230 V:	Typ. 3 x 10 ⁵ switching cycles	
Short circuit strength	IEC/EN 60947-5-1	
Max. fuse rating:	5 A gG / gL	
Mechanical life:	> 30 x 10 ⁶ switching cycles	

Measuring circuit

Measuring current:	Infinite adjustable 10 % ... 110 % I_B
Hysteresis:	Infinite adjustable 4 ... 20 %
Switching delay t_v:	Infinite adjustable instantaneous, 2 ... 30 s
Frequency range (AC):	45 ... 65 Hz
Repeat accuracy:	± 2 %
Temperature influence:	± 1 %
Attention:	The combination of adjusted switching current I and hysteresis ΔI 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:	≤ 2000 m	
Clearance and creepage distances		
Rated impuls voltage/ Pollution degree:	4 kV / 2	IEC 60664-1
EMC		
Electrostatic discharge (ESD):	8 kV (air)	IEC/EN 61000-4-2
HF irradiation		
80 MHz ... 1 GHz:	12 V / m	IEC/EN 61000-4-3
1 GHz ... 2,7 GHz:	10 V / m	IEC/EN 61000-4-3
Fast transients:	2 kV	IEC/EN 61000-4-4
Surge		
Between		
wires for power supply:	2 kV	IEC/EN 61000-4-5
Between wire and ground:	4 kV	IEC/EN 61000-4-5
HF wire guided:	10 V	IEC/EN 61000-4-6
Interference suppression:	Limit value class A	EN 55011
Degree of protection:		
Housing:	IP 40	IEC/EN 60529
Terminals:	IP 20	IEC/EN 60529
Enclosure:	Thermoplastic with V0 behaviour acc. to UL subject 94	
Vibration resistance:	Amplitude 0.35 mm Class I	
		IEC/EN 60255-21
Climate resistance:	20 / 05 / 04	
		IEC/EN 60068-1
Terminal designation:	EN 50005	

Technical Data

Wire connection:	DIN 46228-1/-2/-3/-4	
Fixed screw terminals		
Cross section:	0.2 ... 4 mm ² (AWG 24 - 12) solid or 0.2 ... 2.5 mm ² (AWG 24 - 12) stranded wire with and without ferrules	
Stripping length:	7 mm	
Fixing torque:	0.6 Nm	EN 60999-1
Wire fixing:	Captive slotted screw / M2.5	
Mounting:	DIN rail	IEC/EN 60715
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.
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Wire connection:	60 °C / 75 °C copper conductors only AWG 24 - 12 Sol/Str Torque 0.6 Nm
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Technical data that is not stated in the UL-Data, can be found in the technical data section

Standard Type

RL 9853.11/61 AC/DC 0.1 ... 10 A AC 110 ... 230 V 4 ... 20 % 0 ... 30 s	
Article number:	0066431
• Output:	1 Wechsler
• Operating current:	AC/DC 0.1 ... 10 A
• Auxiliary voltage U_H :	AC 110 ... 230 V
• Hysteresis:	4 ... 20 %
• Switching delay:	0 ... 30 s
• Width:	35 mm

Ordering Example

RL 9853 .11 /00 /61 AC/DC 0.1 ... 10 A AC 110 ... 230 V 4 ... 20 % 0 ... 30 s	
	Switching delay
	Hysteresis
	Auxiliary voltage
	Operating current AC/DC 2 ... 100 mA AC/DC 0.1 ... 10 A
	UL approval
	Operation mode/Outputs 0: De-Energized on trip 1: Energized on trip
	Contacts
	Type

Connection Example

