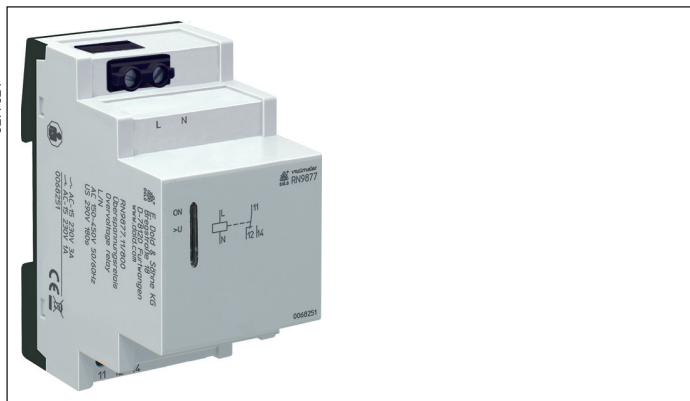


## VARIMETER PRO Overvoltage relay RN 9877/800



### Your Advantages

- Preventive maintenance
- For better productivity
- High repeat accuracy

### Features

- According to IEC/EN 60 255-1
- For monitoring of AC single-phase with 50 / 60 Hz
- Detection of overvoltage
- No separate auxiliary necessary
- Output: 1 changeover contact
- Energized on trip
- Fixed response value AC 290V
- Fixed release delay 180 s
- Fast fault detection
- Width: 52.5 mm

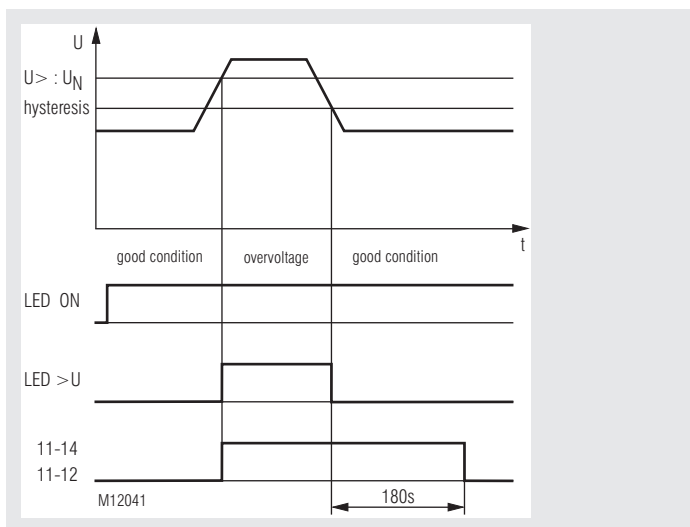
### Product Description

The overvoltage relay RN 9877/800 of the VARIMETER series monitor overvoltage in a AC network. The measurement is very simple and without extensive wiring as there is no auxiliary power supply necessary. 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



### Function diagram



### Application

- Monitoring of alternating current networks to identify overvoltage
- Changeover to emergency supply after failure detection

### Functions

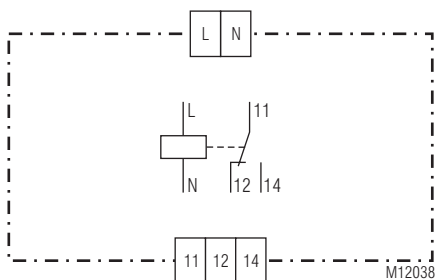
When the voltage goes over the setpoint of AC 290 V it is indicated on the overvoltage LED. At the same time the output relay energises. Reset takes place with approx. 6 % Hysteresis, the LED goes off immediately and the output relay de-energises after a fixed release delay of 180 s.

The output relay operates at energized on trip i.e. in case of good condition the relay de-energized whereas in fault condition it is energized.

### Indicator

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

### Circuit Diagram



### Connection Terminals

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

### Notes

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

## Technical Data

### Input

<b>Operating voltage <math>U_b</math>:</b>	AC 150 ... 450 V
<b>Voltage rated operating <math>U_e</math>:</b>	AC 176 ... 410 V
<b>Nominal frequency:</b>	50 / 60 Hz
<b>Frequency range:</b>	45 ... 65 Hz
<b>Nominal consumption:</b>	approx. 7 VA

### Output

<b>Contact:</b>	1 changeover contact	
<b>Contact material:</b>	AgNi	
<b>Switching voltage:</b>	AC 250 V	
<b>Thermal current <math>I_{th}</math>:</b>	5 A	
<b>Switching capacity to AC 15</b>		
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
<b>Electrical life</b>		
<b>Electrical life to AC 15 at 1 A, AC 230 V:</b>	typ. $3 \times 10^5$ switching cycles	
<b>Short circuit strength</b>	IEC/EN 60 947-5-1	
max. fuse rating:	5 A gG / gL	
<b>Mechanical life:</b>	> $30 \times 10^6$ switching cycles	

### Measuring circuit

<b>Measuring voltage:</b>	AC 150 ... 450 V
<b>Switching threshold:</b>	AC 290 V
<b>Hysteresis:</b>	ca. 6 %
<b>Release delay:</b>	180 s
<b>Repeat accuracy:</b>	$\pm 2$ %
<b>Temperature influence:</b>	$\pm 1$ %

### General Data

<b>Operating mode:</b>	continuous operation	
<b>Temperature range</b>		
Operation:	- 20 ... + 55 °C	
Storage:	- 25 ... + 65 °C	
Relative air humidity:	93 % at 40 °C	
<b>Altitude:</b>	< 2,000 m	
<b>Clearance and creepage distances</b>		
Rated impuls voltage/ Pollution degree:	6 kV / 2	IEC 60 664-1
<b>EMC</b>		
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 voltage 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
<b>Degree of protection:</b>		
Housing:	IP 40	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529
<b>Enclosure:</b>	Thermoplastic with V0 behaviour acc. to UL subject 94	
<b>Vibration resistance:</b>	Amplitude 0.35 mm Class I IEC/EN 60 255-21	
<b>Climate resistance:</b>	20 / 055 / 04 IEC/EN 60 068-1	
<b>Terminal designation:</b>	EN 50 005	

## Technical Data

**Wire connection:** DIN 46 228-1/-2/-3/-4

### Fixed screw terminals (11, 12, 14)

<b>Cross section:</b>	0.2 ... 4 mm <sup>2</sup> (AWG 24 - 12) solid or 0.2 ... 2.5 mm <sup>2</sup> (AWG 24 - 12) stranded wire with and without ferrules
<b>Stripping length:</b>	7 mm
<b>Fixing torque:</b>	0.6 Nm EN 60 999-1
<b>Wire fixing:</b>	Captive slotted screw / M2.5

### Fixed High-voltage terminals (L, N)

<b>Cross section:</b>	0.2 ... 6 mm <sup>2</sup> (AWG 24 - 10) massiv oder 0.2 ... 4 mm <sup>2</sup> (AWG 24 - 10) stranded wire without ferrules 0.25 ... 4 mm <sup>2</sup> (AWG 24 - 10) stranded wire with ferrules
<b>Stripping length:</b>	8 mm
<b>Fixing torque:</b>	0.7 Nm EN 60 999-1
<b>Wire fixing:</b>	Captive slotted screw / M3
<b>Mounting:</b>	DIN rail IEC/EN 60 715
<b>Weight:</b>	approx. 125 g

### Dimensions

**Width x height x depth:** 52.5 x 90 x 71 mm

## Standard Type

RN 9877.11/800	AC 150 ... 450 V	$U_s$ 290 V	180 s
Article number:	0068251		
• Output:	1 changeover contact		
• Measuring voltage:	AC 150 ... 450 V		
• Switching threshold:	AC 290 V		
• Release delay:	180 s		
• Width:	52.5 mm		

## Connection Example

