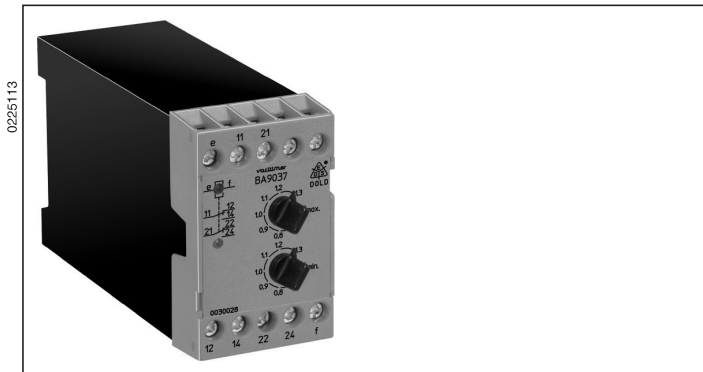
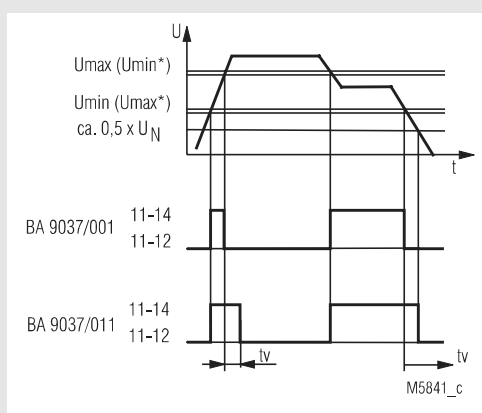


## VARIMETER Voltage Relay BA 9037



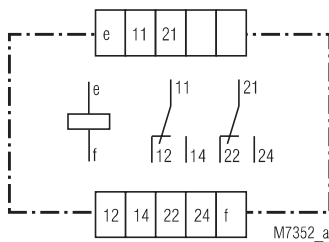
- According to IEC 255, EN 30 255, VDE 0435 part 303
- Single phase
- Measuring ranges from 24 to 660 V
- Response and release value adjustable independent of each other
- Under- and overvoltage detection
- Without auxiliary supply
- Large setting range
- With time delay
- Closed circuit operation
- Insensitive to harmonics
- LED indicators for operation and state of contacts
- Width 45 mm

### Function Diagram



\*  $U_{min}$  and  $U_{max}$  can also be exchanged. The hysteresis of the setting values is  $< 4\%$  of the response value

### Circuit Diagram



BA 9037.12

### Approvals and Marking



### Applications

Under- and overvoltage detection in AC or DC voltage systems

### Indicators

upper LED: on, when voltage connected  
lower LED: on, when output contact activated

### Technical Data

#### Input

**Nominal voltage  $U_N$ :** DC 24, 42, 60 V (protected against wrong

polarity). These units are calibrated for DC voltage. When AC voltage is connected the setting has an offset of 11 %.  
AC 110, 127, 230, 240, 400, 660, 690 V

#### Measuring ranges:

#### Voltage range:

#### Nominal consumption:

0.7 ... 1.3  $U_N$   
0.6 ... 1.4  $U_N$   
DC 24 V 1 W  
AC 24 V 2 VA  
AC 230 V 5 VA  
AC 500 V 10 VA

#### Nominal frequency:

#### Frequency range:

#### Temperature influence:

50 / 60 Hz  
 $\pm 5\%$   
 $< 0.05\% / K$

### Setting Ranges

#### Response value:

$U_{min}$  infinite 0.7 ... 1.3  $U_N$

$U_{max}$  infinite 0.7 ... 1.3  $U_N$

#### Hysteresis:

#### Setting accuracy:

#### Repeat accuracy:

at  $U_{min}$  bzw.  $U_{max}$   $< 0.96$   
 $< \pm 5\%$   
 $< \pm 0.5\%$

## Technical Data

### Output

#### Contacts

BA 9037.12: 2 changeover contacts

**Release delay:**  
 24 V < 20 ms  
 220 V < 150 ms  
 500 V < 150 ms  
 5 A

#### Thermal current $I_{th}$ : 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 3 A, AC 230 V: 5 x 10<sup>5</sup> switching cycles  
**Permissible switching frequency:** 6000 switching cycles / h

**Short circuit strength**  
**max. fuse rating:** 4 AgL IEC/EN 60 947-5-1  
**Mechanical life:** > 30 x 10<sup>6</sup> switching cycles

### General Data

**Operating mode:** Continuous operation  
**Temperature range:** - 40 ... + 70°C

**Clearance and creepage distances**  
 rated impuls voltage /  
 pollution degree: 4 kV / 2 IEC 60 664-1

**EMC**  
 Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2  
 HF irradiation: 10 V/m IEC/EN 61 000-4-3  
 Fast transients: 2 kV IEC/EN 61 000-4-4  
 Surge voltages: 1 kV IEC/EN 61 000-4-5  
 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 according to UL subject 94

**Vibration resistance:** Amplitude 0.35 mm IEC/EN 60 068-2-6 frequency 10 ... 55 Hz

**Climate resistance:** 20 / 060 / 04 IEC/EN 60 068-1  
**Terminal designation:** EN 50 005  
**Wire connection:** 2 x 2.5 mm<sup>2</sup> solid or 2 x 1.5 mm<sup>2</sup> stranded wire with sleeve DIN 46 228-1/-2/-3/-4

**Wire fixing:** Flat terminals with self-lifting clamping piece IEC/EN 60 999-1

**Mounting:** DIN rail IEC/EN 60 715  
**Weight:** 240 g

### Dimensions

**Width x height x depth:** 45 x 73 x 132 mm

## Standard Type

BA 9037.12/001 AC / DC 24 V

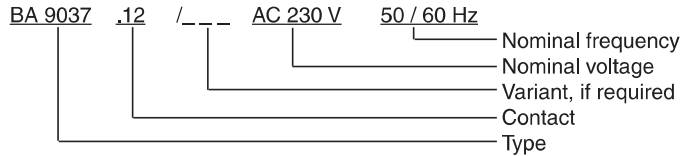
Article number: 0030758 stock item

- without time delay
- Output: 2 changeover contacts
- Nominal voltage  $U_N$ : AC / DC 24 V
- Width: 45 mm

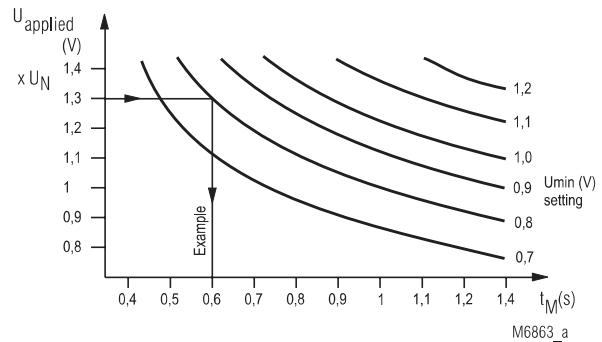
### Variant

BA 9037.--/011: adjustable time delay  $t_v$  1 ... 20 sec.  
 If the voltage drops below 0.5  $U_N$  the time delay is inactive, and the contacts fall back immediately.

### Ordering example for variant



## Characteristics



Operate delay  $t_M$ :

The diagram shows the relation of the operate delay to the applied measuring voltage  $U_{applied}$  and the setting of  $U_{min}$  when the voltage is switched on. A slow voltage change reduces the delay.