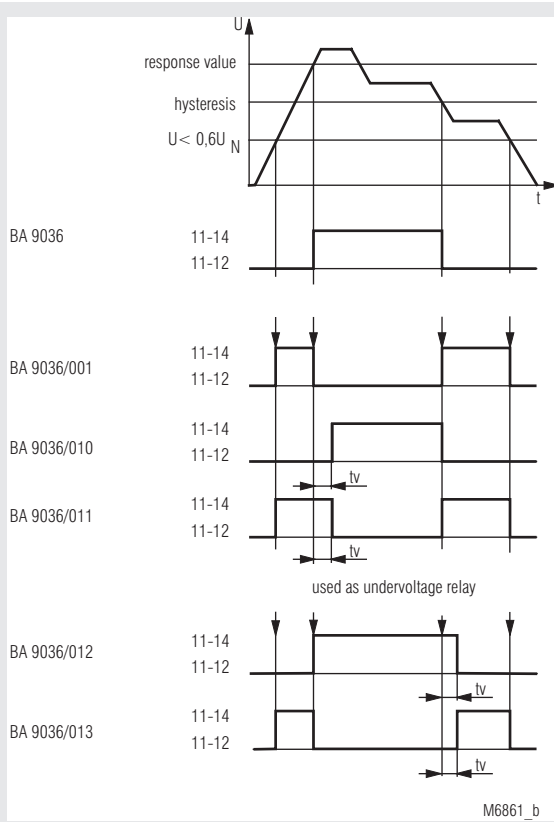


VARIMETER Voltage Relay BA 9036



- According to IEC/EN 60255-1, IEC/EN 60255-26
- Single-phase
- Measuring ranges from 24 to 400
- Settable response and release value
- Without auxiliary supply
- optionally available with adjustable time delay
- with LED indicators for operation and state of contacts
- 2 changeover contacts
- Width 45 mm

Function Diagram



Approvals and Markings



* see variants

Applications

Monitoring of voltage in DC and AC systems

Indicators

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

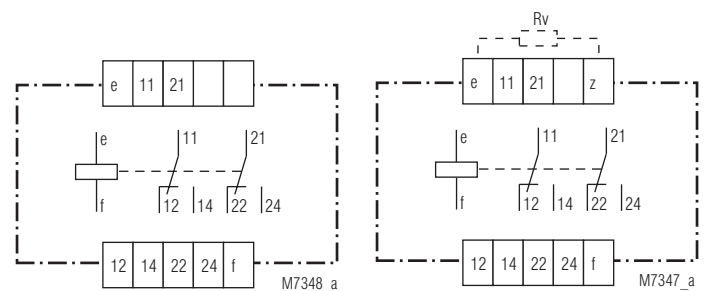
Notes

Mounting instruction for units with external series resistor

The external resistor conducts mains voltage and heats up during operation. It has to be mounted at a suitable location in the cabinet so that touch protection is provided. Because of the heat dissipation a suitable distance to neighbour devices has to be kept.

When using a drop resistor the measuring has to be connected to e and f.

Circuit Diagrams



BA 9036
connection diagram for AC voltage

BA 9036
connection diagram for DC voltage

Connection Terminals

Terminal designation	Signal designation
e, f	Nominal voltage
e, z	Series resistor (DC)
11, 12, 14, 21, 22, 24	changeover contact

Technical Data

Input

Nominal voltage U_N:	AC 42, 110, 127, 230, 240, 290, 400 V DC 24, 48, 60 V DC 110*, 127*, 220*, 240 V* *) with external drop resistor DC 110 V*: ZWS 20 SL1.5 k Ω 20 W DC 127 V*: ZWS 20 SL1.6 k Ω 20 W DC 220 V*: ZWS 35 SL 3.9 k Ω 35 W DC 240 V*: ZWS 35 SL4.7 k Ω 35 W *) Replacement RL 9836 without external drop resistor
Nominal consumption:	6 VA / 10 W
Nominal frequency:	50 / 60 Hz
Frequency range:	$\pm 5 \%$
Temperature influence:	< 0.05 % / K
Max. overload:	1.2 U_N continuously

Setting Ranges

Setting:	0.85 ... 1.05 U_N
Hysteresis:	0.75 ... 0.95 of setting value
Setting accuracy:	$\pm 5 \%$
Repeat accuracy:	$\pm 0.5 \%$
Time delay t_v:	0.5 ... 10 s adjustable ($U > 0.6 \times U_N$)

Output

Contacts:	2 changeover contacts
Thermal current I_{th}:	6 A
Switching capacity to AC 15	
NO contact:	2 A / AC 230 V IEC/EN 60 947-5-1
NC contact:	1 A / AC 230 V IEC/EN 60 947-5-1
to DC 13	
NO contact:	1 A / DC 24 V IEC/EN 60 947-5-1
NC contact:	1 A / DC 24 V IEC/EN 60 947-5-1
Electrical contact life to AC 15 at 1 A, AC 230 V:	IEC/EN 60 947-5-1
Short circuit strength max. fuse rating:	$\geq 2.5 \times 10^5$ switching cycles
Mechanical life:	4 A gL IEC/EN 60 947-5-1 30 x 10 ⁶ switching cycles

General Data

Operating mode:	Continuous operation
Temperature range:	- 20 ... + 60°C
Clearance and creepage distances	
rated impulse voltage / pollution degree:	4 kV / 2 IEC 60 664-1
EMC	
Electrostatic discharge:	6 kV (air) IEC/EN 61 000-4-2
Fast transients:	2 kV IEC/EN 61 000-4-4
Surge voltages between	
wires for power supply:	1 kV IEC/EN 61 000-4-5
between wire and ground:	2 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 ² solid or 2 x 1.5 mm ² 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:	310 g

Dimensions

Width x height x depth:	45 x 73 x 132 mm
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UL-Data

Nominal voltage U_N : AC 120 V

Switching capacity: Pilot duty B150



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

CCC-Data

Thermal current I_{th} : 5 A

Switching capacity

to AC 15

NO contact: 2 A / AC 230 V IEC/EN 60 947-5-1

to DC 13

NO contact: 1 A / DC 24 V IEC/EN 60 947-5-1



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

Standard Type

BA 9036 AC 230 V 50 Hz

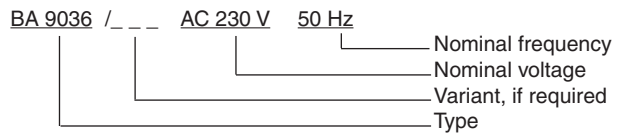
Article number: 0045288

- Nominal voltage U_N : AC 230 V
- Width: 45 mm

Variants

BA 9036/61:	with UL approval on request
BA 9036:	with CCC approval on request
BA 9036/001:	overvoltage / closed circuit operation
BA 9036/010:	overvoltage / open circuit operation / time delay
BA 9036/011:	overvoltage / closed circuit operation / time delay
BA 9036/012:	undervoltage / closed circuit operation / time delay
BA 9036/013:	undervoltage / open circuit operation / time delay

Ordering example for variants



Characteristic

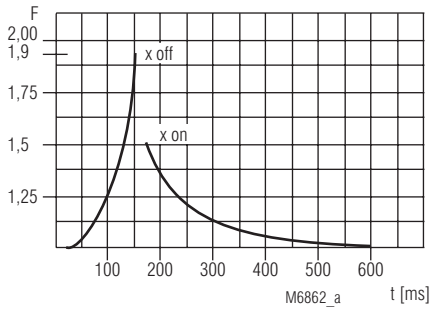


Diagram switching delay

Switching delay t_M :

The characteristic shows the switching delay depending on the values of X_{on} - X_{off} when switching the voltage on or off. A slow voltage change reduces the delay.

Example:

$$\begin{aligned}
 &U_{\text{setting}} = 200 \text{ V} & F &= \frac{230 \text{ V}}{200 \text{ V}} = 1.1 \\
 &U_{\text{applied}} = 230 \text{ V} & & \\
 &t_{M,\text{on}} = \text{approx. } 300 \text{ ms} & F &= \frac{U_{\text{applied}}}{U_{\text{setting}}} \\
 &t_{M,\text{off}} = \text{approx. } 60 \text{ ms} & &
 \end{aligned}$$

Accessories

ZWS 20 SL, ZWS 35 SL

Drop resistor

