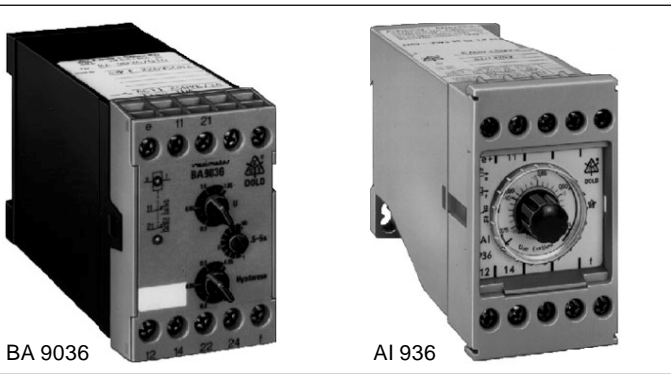


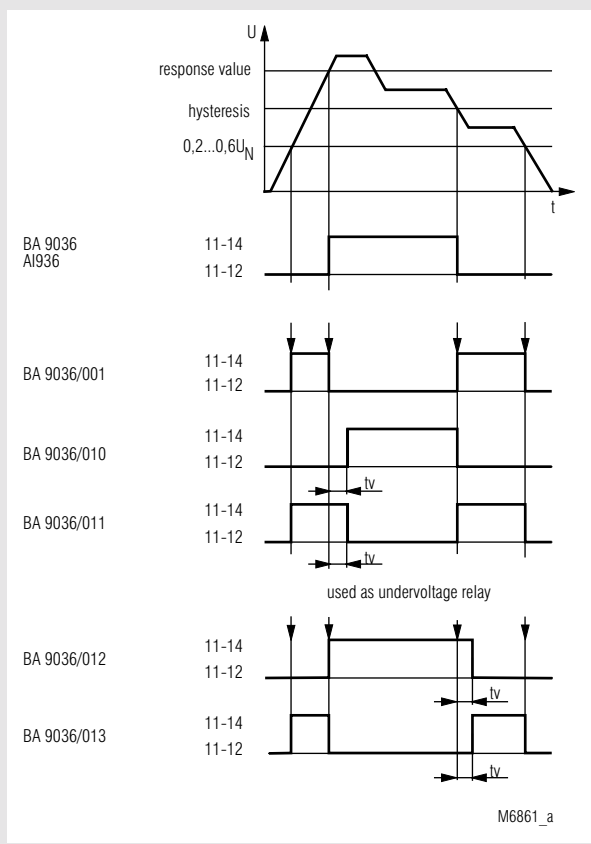
Voltage relay BA 9036, AI 936 varimeter

0225114



- According to IEC 255, EN 60 255, VDE 0435 part 303
- Single-phase
- Measuring ranges from 24 to 400
- Settable response and release value
- Without auxiliary supply
- BA 9036 optionally available with adjustable time delay at response or release value
- BA 9036 with LED indicators for operation and state of contacts
- BA 9036: 2 changeover contacts
- AI 936: 1 changeover contact
- Width 45 mm

Function diagram



Approvals and marking



* see variants

Application

Monitoring of voltage in DC and AC systems

Indicators

BA 9036:
 upper LED: on, when voltage connected
 lower LED: on, when output contact activated

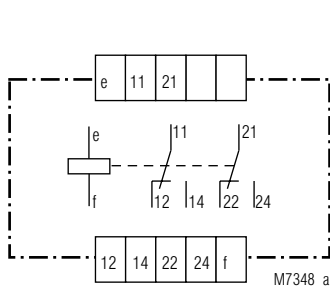
Technical data

Input

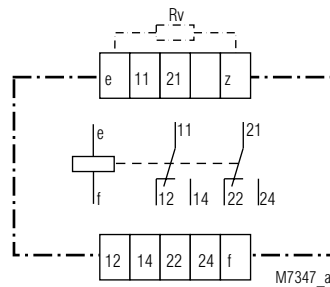
Nominal voltage U_N : AC 42, 110, 127, 230, 240, 290, 400 V
 DC 24, 48, 60 V
 DC 110*, 127*, 220*, 240 V*
 BA 9036:
 DC 110 V*: ZWS 20 SL 1,5 k Ω 20 W
 DC 127 V*: ZWS 20 SL 1,6 k Ω 20 W
 DC 220 V*: ZWS 35 SL 3,9 k Ω 35 W
 DC 240 V*: ZWS 35 SL 4,7 k Ω 35 W
 AI 936:
 DC 110 V*: ZWS 20 SL 1,5 k Ω 20 W
 DC 220 V*: ZWS 35 SL 3,9 k Ω 35 W
 *) with external drop resistor

Nominal consumption: 6 VA / 10 W
Nominal frequency: 50 / 60 Hz
Frequency range: $\pm 5\%$

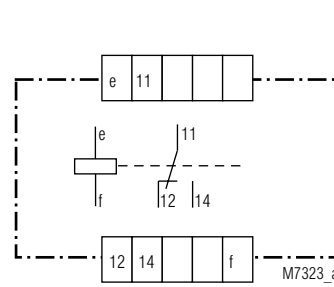
Circuit diagrams



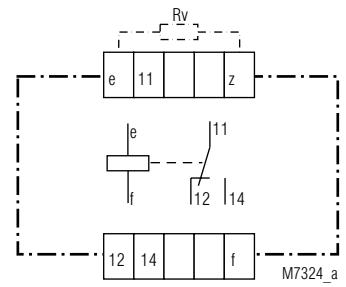
BA 9036 connection diagram for AC voltage



BA 9036 connection diagram for DC voltage



AI 936 connection diagram for AC voltage



AI 936 connection diagram for DC voltage

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

Technical data

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: ± 5 %
Repeat accuracy: ± 0,5 %
Time delay t_v:
 only with BA 9036 0,5 ... 10 s adjustable

Output

Contacts

BA 9036: 2 changeover contacts
 AI 936: 1 changeover contact

Thermal current I_{th}: 6 A

Switching capacity

to AC 15
 NO contact: 3 A / AC 230 V EN 60 947-5-1
 NC contact: 1 A / AC 230 V EN 60 947-5-1

Electrical contact life EN 60 947-5-1

to AC 15 at 1 A, AC 230 V: ≥ 2,5 x 10⁶ switching cycles

Short circuit strength

max. fuse rating: 4 A gL EN 60 947-5-1

Mechanical life: 30 x 10⁶ switching cycles

General data

Operating mode: Continuous operation

Temperature range: - 20 ... + 60°C

Clearance and creepage distances

overvoltage category /
 contamination level: 4 kV / 2 IEC 60 664-1

EMC

Electrostatic discharge: 6 kV (air) EN 61 000-4-2

Fast transients: 2 kV EN 61 000-4-4

Surge voltages

between wires for power supply: 1 kV EN 61 000-4-5

between wire and ground: 2 kV EN 61 000-4-5

Interference suppression: Limit value class B EN 55 011

Degree of protection: Housing: IP 40 EN 60 529

Terminals: IP 20 EN 60 529

Housing:

Thermoplastic with V0 behaviour

according to UL subject 94

Vibration resistance: Amplitude 0,35 mm

frequency 10 ... 55 Hz EN 60 068-2-6

20 / 060 / 04 EN 60 068-1

Climate resistance: EN 50 005

Terminal designation: EN 50 005

Wire connection: 2 x 2,5 mm² solid or

2 x 1,5 mm² stranded wire with sleeve

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

Wire fixing: Flat terminals with self-lifting

clamping piece EN 60 999

Mounting: DIN rail EN 50 022

Weight

BA 9036: 310 g

AI 936: 300 g

Dimensions

Width x height x depth

BA 9036: 45 x 73 x 132 mm

AI 936: 45 x 77 x 127 mm

Standard types

BA 9036 AC 230 V 50 / 60 Hz

Article number: 0045288 stock item

AI 936 AC 230 V 50 / 60 Hz

Article number: 0001152 stock item

• Nominal voltage U_N: AC 230 V

• Width: 45 mm

Variants

BA 9036/61: with UL approval

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

BA 9036 / _ _ _ AC 230 V 50 Hz

Nominal frequency
 Nominal voltage
 Variant, if required
 Type

Characteristic

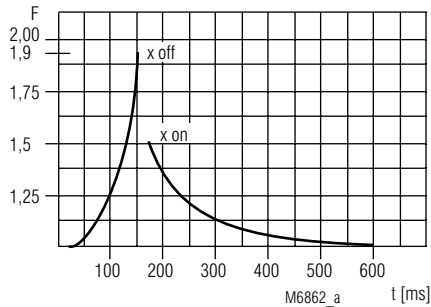


Diagram switching delay

Switching delay t_M:

The characteristic t_M 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:

$$U_{\text{setting}} = 200 \text{ V} \quad F = \frac{230 \text{ V}}{200 \text{ V}} = 1,1$$

$$U_{\text{applied}} = 230 \text{ V}$$

$$t_{M \text{ on}} = \text{approx. } 300 \text{ ms}$$

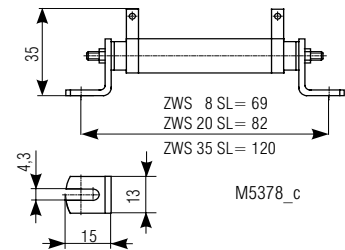
$$t_{M \text{ off}} = \text{approx. } 60 \text{ ms}$$

$$F = \frac{U_{\text{applied}}}{U_{\text{setting}}}$$

Accessories

ZWS 20 SL, ZWS 35 SL

Drop resistor



AI 936:

K 70-34

Cover