Voltage relay BA 9036, AI 936
varimeter

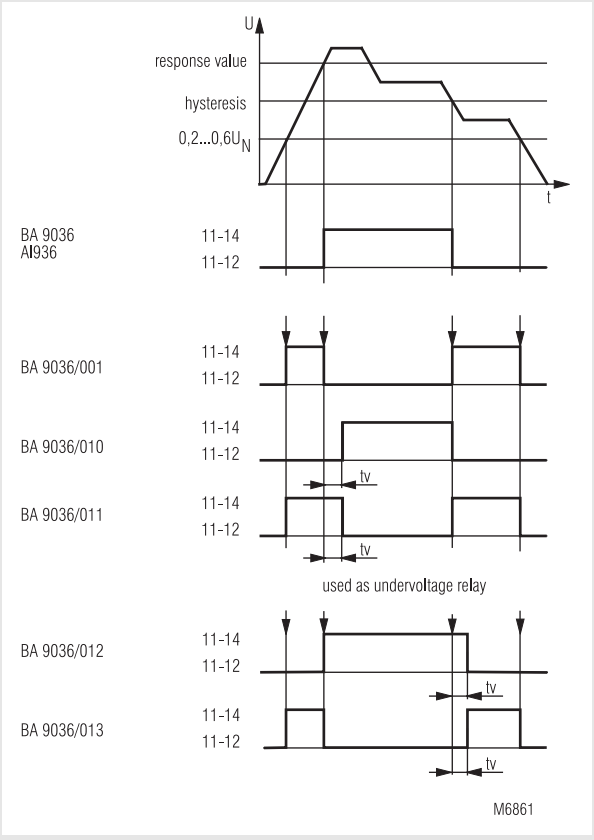
0225114


BA 9036


AI 936

- According to IEC 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

USA * 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

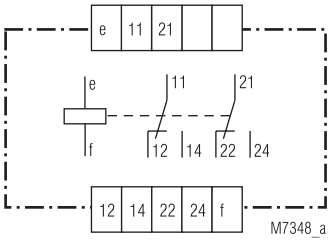
Standard types

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

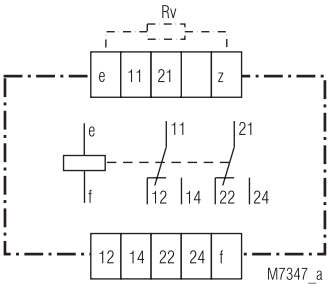
Variants

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 / open circuit operation / time delay
BA 9036/013: undervoltage / closed circuit operation / time delay

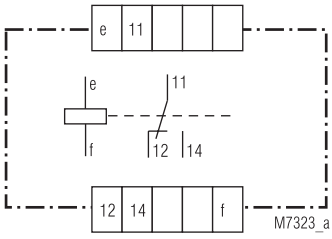
Circuit diagrams



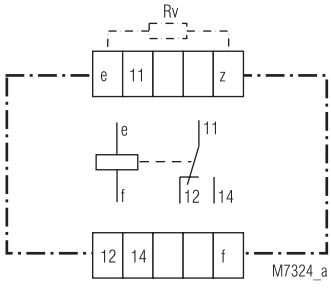
BA 9036
connection diagram for AC voltage



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

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 kΩ 20 W DC 127 V*: ZWS 20 SL 1,6 kΩ 20 W DC 220 V*: ZWS 35 SL 3,9 kΩ 35 W DC 240 V*: ZWS 35 SL 4,7 kΩ 35 W AI 936: DC 110 V*: ZWS 20 SL 1,5 kΩ 20 W DC 220 V*: ZWS 35 SL 3,9 kΩ 35 W *) with external drop resistor
Nominal consumption:	6 VA / 10 W
Nominal frequency:	50 / 60 Hz
Frequency range:	± 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:	± 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 10^5 switching cycles	
Short circuit strength		
max. fuse rating:	4 A gL	EN 60 947-5-1
Mechanical life:	30 x 10^6 switching cycles	

General data

Operating mode:	Continuous operation	
Temperature range:	- 20 ... + 60°C	
Clearance and creepage distances		
overvoltage category / contamination level:	4 kV / 2	DIN VDE 0110-1 (04.97)
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
Climate resistance:	20 / 60 / 04	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	EN 60 999
Mounting:	DIN rail	EN 50 022
Weight		
BA 9036:	310 g	
AI 936:	300 g	

Ordering example

BA 9036 /_ _ _ AC 230 V 50 Hz

- Nominal frequency
- Nominal voltage
- Variant, if required
- Type

Dimensions

Width x height x depth

BA 9036:	45 x 73 x 132 mm
AI 936:	45 x 77 x 127 mm

Characteristic

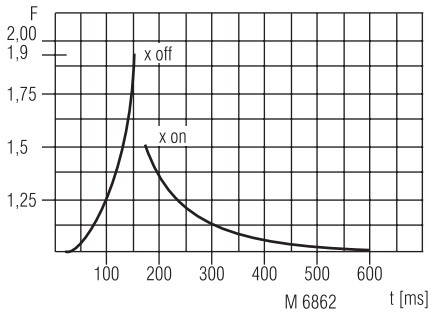


Diagram switching delay

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:

U setting = 200 V
U applied = 230 V

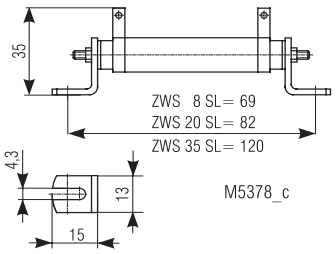
$$F = \frac{230\ V}{200\ V} = 1{,}1$$

$t_M$on = approx. 300 ms
$t_M$off = approx. 60 ms

$$F = \frac{U\ applied}{U\ setting}$$

Accessories

ZWS 20 SL, ZWS 35 SL Drop resistor



AI 936:
K 70-34 Cover

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