

RPB-1ZI-...

bistable - impulse relays



RPB-1ZI-A230



RPB-1ZI-U24

RESISTANCE
TO INRUSH
CURRENT
120 A (20 ms) ❶

- Bistable - impulse relays type "ON-OFF", single-function without memory
- Cadmium - free contacts 1 NO • AC and AC/DC input voltages
- Cover - modular, width 17,5 mm
- Direct mounting on 35 mm rail mount acc. to EN 60715
- Working with illuminated momentary bell switches or control buttons ❷
- Compliance with standard EN 61810
- Recognitions, certifications, directives: RoHS, EMC ❸ CE UK CA

Output circuit - contact data

Number and type of contacts	1 NO
Contact material	AgSnO ₂
Max. switching voltage	300 V AC / 300 V DC
Rated load	AC1 16 A / 250 V AC DC1 16 A / 24 V DC
Max. inrush current	120 A 20 ms ❶
Rated current	16 A
Max. breaking capacity	• AC1 4 000 VA • at halogen lamp load 2 500 W • at LED lamp load 300 W max. 500 W for 33 W x 15 LED lamps ❹
Min. breaking capacity	1 W 10 V, 10 mA
Contact resistance	≤ 100 mΩ
Max. operating frequency	• at rated load AC1 600 cycles/hour • no load 3 600 cycles/hour

Input circuit - coil data

Rated voltage	50/60 Hz AC 230 V terminals A1, A2 AC: 50/60 Hz AC/DC 24 V terminals (-/+)A1, (+/-)A2
Must release voltage	AC: ≥ 0,15 U _n DC: ≥ 0,05 U _n
Operating range of supply voltage	0,85...1,15 U _n see Tables 1, 2
Rated power consumption	≤ 0,6 W 230 V AC, 50/60 Hz ≤ 0,9 W 24 V AC/DC, 50/60 Hz
Control contact S ❷	• load ΣI < 5 mA • min. voltage ❸ 0,85 U _n • min. time of pulse duration ❸ ≥ 55 ms

Insulation according to EN 60664-1

Insulation rated voltage	250 V AC
Rated surge voltage	4 000 V 1,2 / 50 μs
Overvoltage category	III
Insulation pollution degree	2
Flammability class	V-0 for modular cover, UL 94
Dielectric strength	• input - output 4 000 V AC • contact clearance 1 000 V AC type of insulation: basic type of clearance: micro-disconnection

General data

Operating / release time (typical values)	60 ms / 60 ms
Electrical life	• resistive AC1 0,5 x 10 ⁵ 16 A, 250 V AC ❹
Mechanical life (cycles)	10 ⁷
Operation cycle	1:1
Dimensions (L x W x H) / Weight	90 ❺ x 17,5 x 64,6 mm / 69 g
Ambient temperature	• storage -40...+70 °C • operating (non-condensation and/or icing) -20...+55 °C
Cover protection category	IP 20 EN 60529
Relative humidity	up to 85%
Shock / vibration resistance	15 g / 0,35 mm DA 10...55 Hz

Function data

Functions	SET/RESET (RESET)
LED indicator	green LED U ON - indication of supply voltage U yellow LED R ON/OFF - output relay status

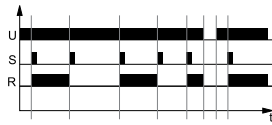
❶ Contacts "inrush": high resistance to short-time surge currents occurring on switching on LED-lamps, ESL fluorescent tubes, electronic transformers, discharge lamps, etc. ❷ Control contact S provides control of switching ON/OFF of receivers (lighting or other devices) from a few different points, with the use of connected in parallel: illuminated momentary bell switches or control buttons. ❸ EMC tests (electromagnetic compatibility): EN 55011, EN 61000-4-2/3/4/5/6/11. ❹ Test carried out in the laboratory of Relpol S.A. The given parameters of switching power are illustrative value due to the large design diversity of lamps available on the market. The switching capacity of the load circuit depends on the characteristics of the inrush currents of the lamps used. ❺ Where the control signal is recognizable. ❻ Continuous voltage applied between A1, A2, activated with the control contact S. ❼ Length with 35 mm rail catches: 98,8 mm.

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Functions

SET/RESET (RESET) - Switching ON and OFF, controlled by pulses on the contact S.



After the supply voltage has been applied, the output relay R remains switched off.

When a pulse occurs on the control input S, the output relay R is activated (SET). This status lasts until another control pulse occurs - then, the output relay R is switched off (RESET).

Further pulses which will occur on the control input S will change the R contact status into an opposite one.

Switching the supply off will cause switching the output relay R off. Switching on the supply again and applying a control pulse to the S input will switch the R relay on. Further control pulses which will occur on the control input S will change the R contact status into an opposite one.

Additional functions

LEDs: green U, yellow R - are lit permanently.

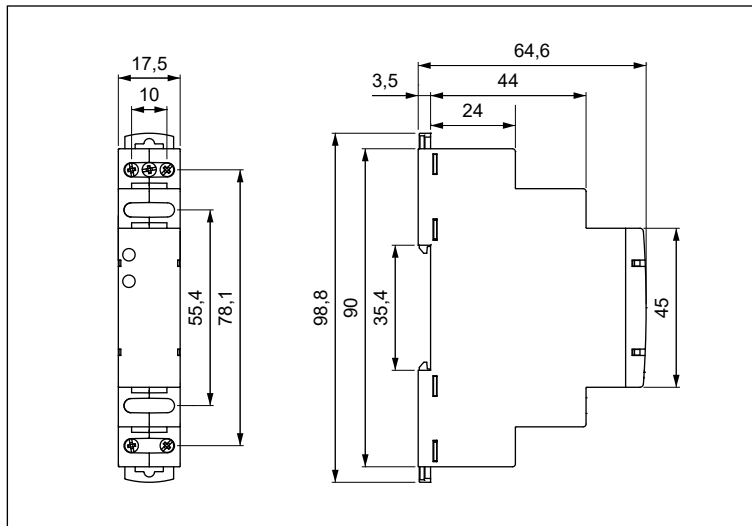
Triggering: the relay is triggered by connecting the contact S to the A1 terminal, from connected in parallel switches / control buttons. For DC supply, the positive pole may be connected to the A1 or A2 terminal.

Supply:

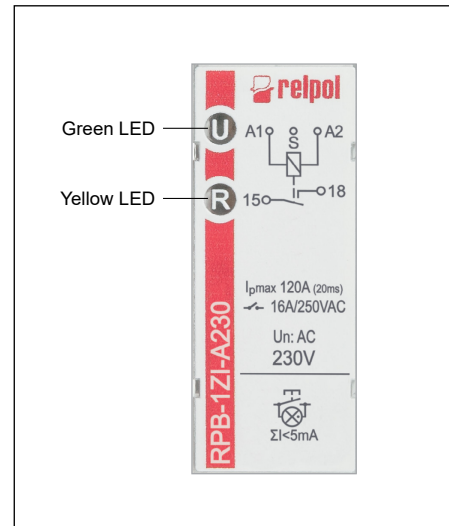
- **RPB-1ZI-A230:** the relay may be supplied with AC voltage 50/60 Hz of 195,5...264,5 V,
- **RPB-1ZI-U24:** the relay may be supplied with DC voltage or AC voltage 50/60 Hz of 20,4...27,6 V.

U - supply voltage; R - output state of the relay; t - time axis

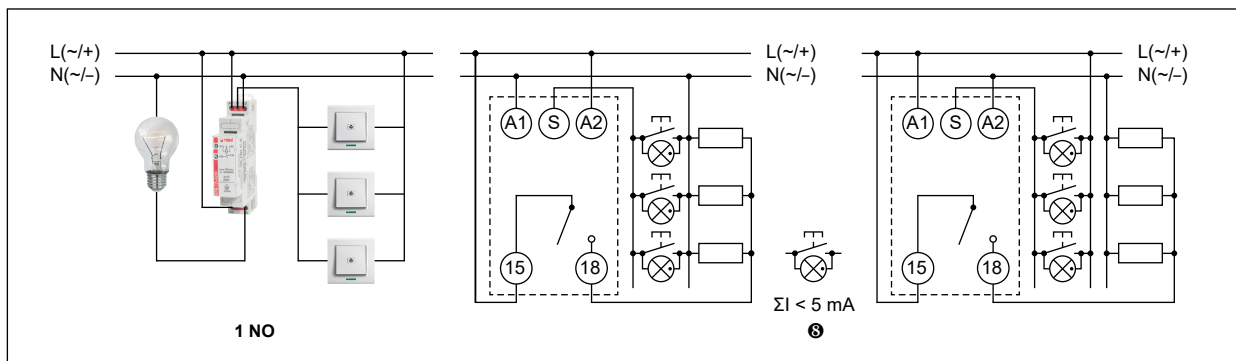
Dimensions



Front panel description



Connection diagrams



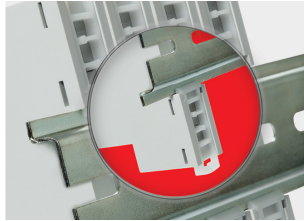
Note: the indicated polarization of the supply refers only to the relays RPB-1ZI-U24. Ⓢ If too many illuminated switches are connected, the lighting circuits can be switched on spontaneously or the lights can be switched on permanently.

RPB-1ZI-...

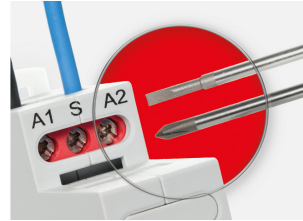
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Mounting

Relays **RPB-1ZI-...** are designed for direct mounting on 35 mm rail mount acc. to EN 60715. Operational position - any. **Connections:** max. cross section of the cables: 1 x 2,5 mm² (1 x 14 AWG), stripping length: 6,5 mm, max. tightening moment for the terminal: 0,5 Nm.



Two catches:
easy mounting
on 35 mm rail,
firm hold
(top and bottom).



**Mounting wires
in clamps:**
universal screw
(cross-recessed
or slotted head).

Coil data - AC 50/60 Hz voltage version

Table 1

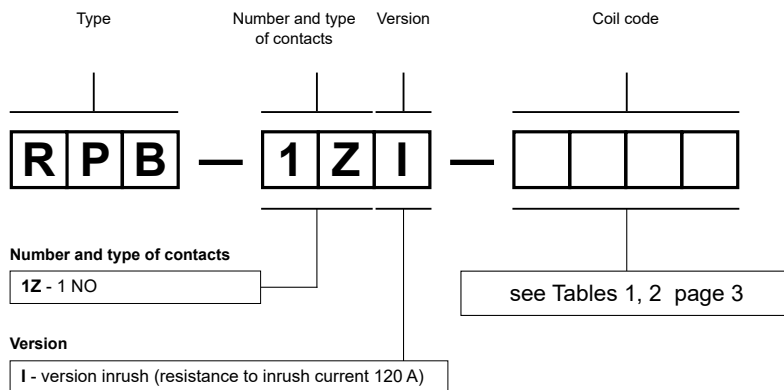
Coil code	Rated voltage V AC	Coil operating range V AC	
		min. (at 20 °C)	max. (at 55 °C)
A230	230	195,5	264,5

Coil data - AC/DC 50/60 Hz voltage version

Table 2

Coil code	Rated voltage V AC/DC	Coil operating range V AC/DC	
		min. (at 20 °C)	max. (at 55 °C)
U24	24	20,4	27,6

Ordering codes



Examples of ordering codes:

RPB-1ZI-A230

bistable - impulse relay **RPB-1ZI-...**, single-function (relay perform function SET/RESET (RESET)), cover - modular, width 17,5 mm, one normally open contact, version inrush, contact material AgSnO₂, coil voltage 230 V AC 50/60 Hz

RPB-1ZI-U24

bistable - impulse relay **RPB-1ZI-...**, single-function (relay perform function SET/RESET (RESET)), cover - modular, width 17,5 mm, one normally open contact, version inrush, contact material AgSnO₂, coil voltage 24 V AC/DC AC: 50/60 Hz

PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.