

R3B-...-D

industrial bistable relays



Energy saving



- **Energy-saving double-coil bistable relays**
- they do not require continuous power supply, but only one pulse to change the state (two stable states: open or closed)

- Relays with permanent magnet, designed for continuous operation*
- For plug-in sockets: on 35 mm rail mount acc. to EN 60715; on panel mounting; for PCB; with terminals for soldering
- DC coils, insulation class F: 155 °C
- W (mechanical indicator) - standard equipment of relays
- Recognitions, certifications, directives: RoHS,

Contact data

Number and type of contacts		3 CO
Contact material		AgNi , AgNi/Au flash gold plating, AgNi/Au hard gold plating
Rated / max. switching voltage	AC	250 V / 250 V
Min. switching voltage		10 V AgNi, 10 V AgNi/Au flash gold plating 5 V AgNi/Au hard gold plating
Rated load (capacity)	AC1 AC15 DC1 DC13	6 A / 250 V AC 1,5 A / 120 V 0,75 A / 240 V (C300) 6 A / 24 V DC (see Fig. 3) 0,22 A / 120 V 0,15 A / 220 V (R300)
Motor load	acc. to UL 508 AC3 acc. to IEC 60947-4-1	1/3 HP 240 V AC, 3,6 FLA, single-phase motor 0,125 kW 240 V AC, single-phase motor
Min. switching current		5 mA
Max. make current		12 A
Rated current		6 A
Max. breaking capacity	AC1	1 500 VA
Min. breaking capacity		0,3 W AgNi, 0,3 W AgNi/Au flash gold plating 0,1 W AgNi/Au hard gold plating
Contact resistance		≤ 100 mΩ
Max. operating frequency	• at rated load AC1 • no load	1 200 cycles/hour 18 000 cycles/hour

Coil data

Rated voltage	DC	5, 6, 12, 24 , 48, 60 V
Operate voltage		≤ 0,8 U _n
Reset voltage (reverse polarity)		min.: 0,8 U _n max.: 1,1 U _n
Control pulse time		min.: 0,05 s max.: 100 s
Rated power consumption	DC	≤ 3 W

Insulation according to EN 60664-1

Insulation rated voltage		250 V AC
Rated surge voltage		2 500 V 1,2 / 50 μs
Overvoltage category		II
Insulation pollution degree		2
Dielectric strength	• between coil and contacts • contact clearance • pole - pole	2 500 V AC type of insulation: basic 1 000 V AC type of clearance: micro-disconnection 2 000 V AC type of insulation: basic
Contact - coil distance	• clearance • creepage	≥ 1,6 mm ≥ 3,2 mm

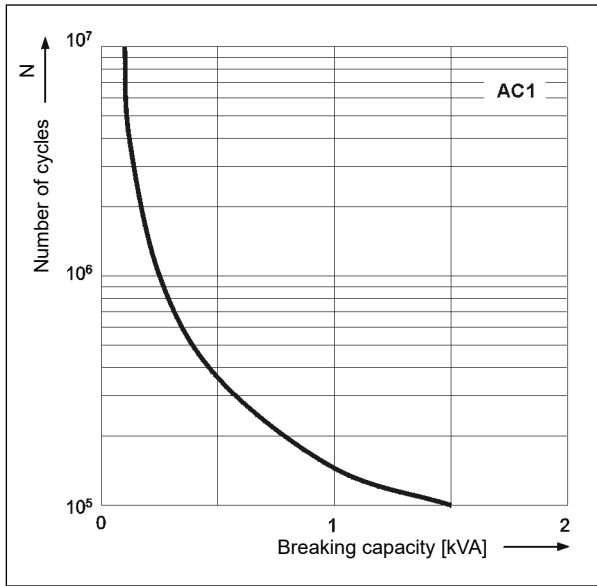
General data

Operating / release time (typical values)		13 ms / 5 ms
Electrical life	• resistive AC1 • cosφ	> 10 ⁵ 6 A, 250 V AC see Fig. 2
Mechanical life (cycles)		> 2 x 10 ⁷
Dimensions (L x W x H)		28,6 x 21 x 35,5 mm
Weight		35 g
Ambient temperature	• storage (non-condensation and/or icing)	-40...+85 °C • operating -20...+55 °C
Cover protection category		IP 40 EN 60529
Environmental protection		RTI EN 61810-1
Shock resistance	(NO/NC)	10 g / 5 g
Vibration resistance		5 g 10...150 Hz

The data in bold type relate to the standard versions of the relays. *The relays are designed for continuous operation while maintaining the parameters declared in the data sheet. For single phase motors for 110-120 V AC do not use motors with higher FLA than given for 240 V AC.

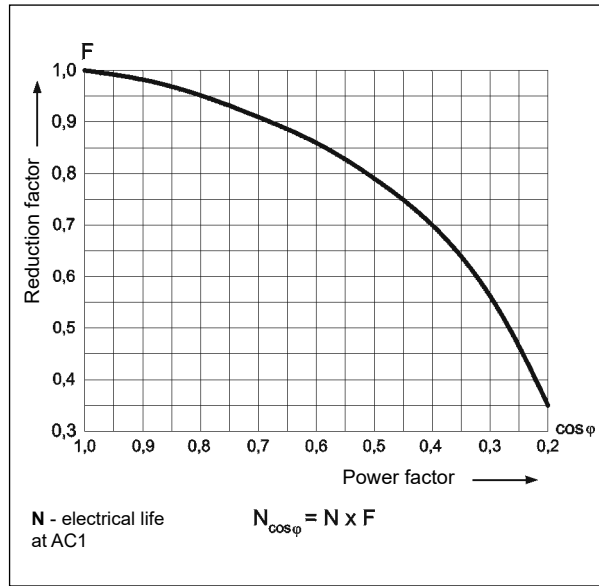
Electrical life at AC resistive load.
Switching frequency: 1 200 cycles/hour

Fig. 1



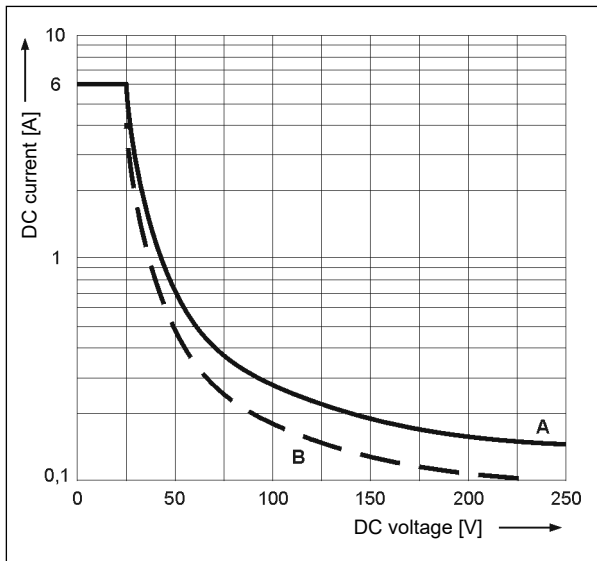
Electrical life reduction factor at AC inductive load

Fig. 2

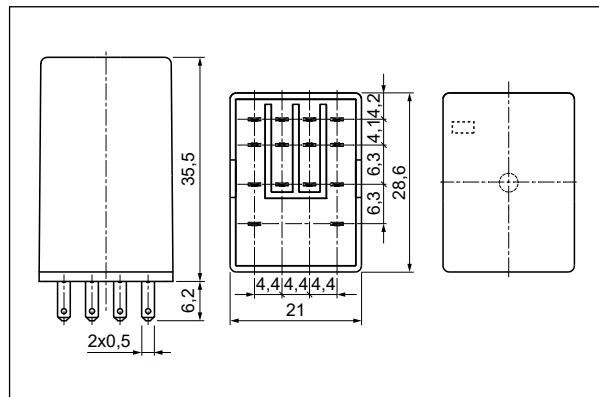


Max. DC breaking capacity
A - resistive load DC1
B - inductive load L/R = 40 ms

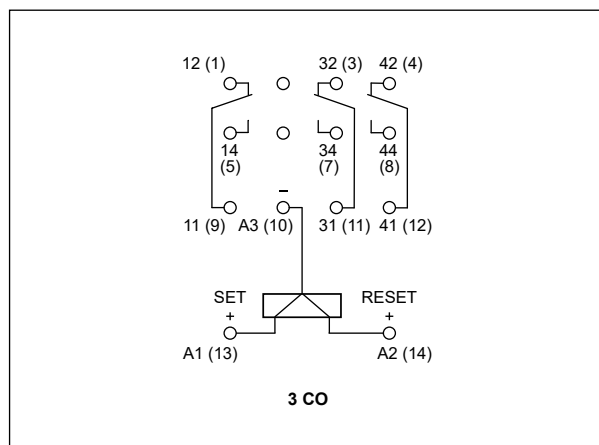
Fig. 3



Dimensions - plug-in version



Connection diagram (pin side view)



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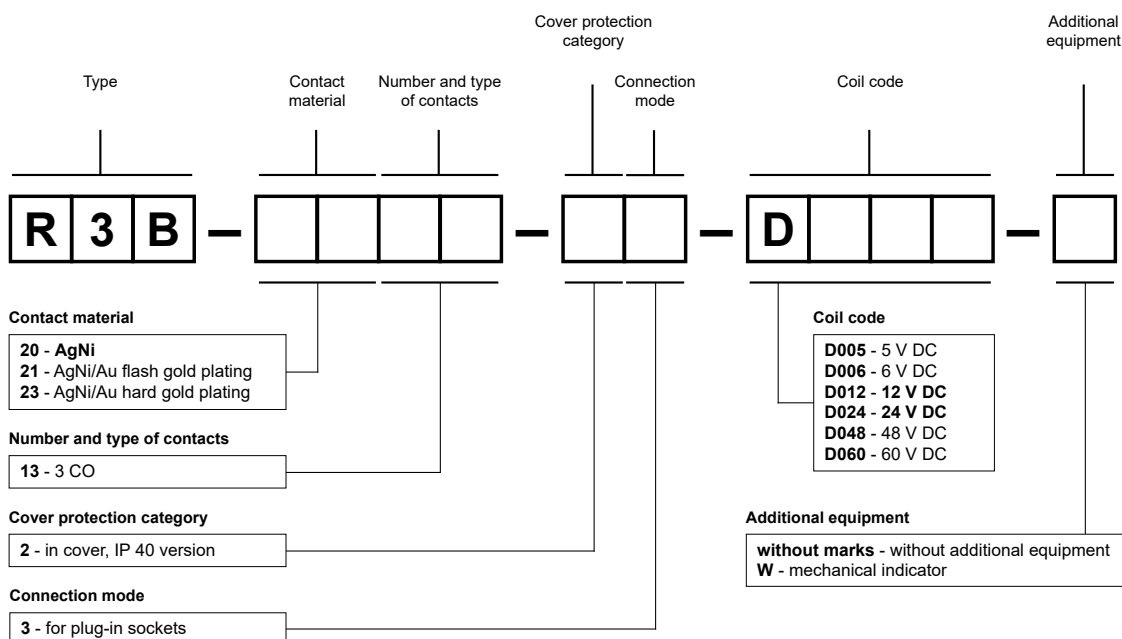
Mounting, sockets and accessories for relays

Relays **R3B-...-D** are offered in versions for plug-in sockets. **With W equipment as standard** (**W** - mechanical indicator).

Sockets for R3B-...-D	Accessories			Additional equipment
	Retainer / retractor clips	Spring wire clips	Description plates	
Screw terminals sockets, 35 mm rail mount (acc. to EN 60715) or on panel mounting (two M3 screws)				
GZT4	GZT4-0040, GZP4-0400	G4 1052	GZT4-0035	M... ②, ZGGZ4 ④
GZM4	GZT4-0040, GZP4-0400	G4 1052	GZT4-0035	M... ②, ZGGZ4 ④
Push-in terminals sockets, 35 mm rail mount (acc. to EN 60715) or on panel mounting (two M3 screws)				
GZP4 ③	GZP4-0400, GZT4-0040	G4 1052	MP15	M... ②, ZGZP4-8, ZGZP4-2, ZGZP-2 ④
Sockets for PCB				
SU4D	–	G4 1053	–	–
G4D	–	G4 1053	–	–
Solder terminals sockets				
SU4L	–	G4 1053	–	G4 1040 ⑤
G4	–	G4 1053	–	–

② Sockets GZP4: wire connection - see www.repol.com.pl ③ Signalling / protecting modules type M... - see www.repol.com.pl
 ④ Interconnection strips ZGGZ4, ZGZP... - see www.repol.com.pl ⑤ Spring clamps G4 1040.

Ordering codes



Example of ordering code:

R3B-2013-23-D012-W

bistable relay **R3B-...-D** with two coils, for plug-in sockets, three changeover contacts, contact material AgNi, coil voltage 12 V DC, with mechanical indicator, in cover IP 40

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.