



**EN** Operating instructions. . . . . pages 1 to 2  
Original

**Product description**

Only the listed magnets may be used for actuation of the magnetic reed switch. Only these magnets can guarantee flawless function and repeat accuracy.



Observe country-specific regulations for installation, safety, accident prevention and also rules governing proper disposal.

**Ordering code**

This operating instructions manual applies to the following types:

**BN 310-1Z**

No.	Option	Description
①	01	1 NC
	10	1 NO
	R	1 bistable contact

**Technical data**

Standards:	IEC 60947-1
Enclosure:	glass-fibre reinforced thermoplastic
Operating principle:	magnetic
Protection class:	IP67 to IEC 60529
Ambient temperature:	-25 °C ... +75 °C
Switching voltage:	max. 250 VAC/DC
Switching current:	max. 3 A
Switching capacity:	max. 120 VA 120 VA, W
Sparkover voltage:	> 600 VAC (50 Hz)

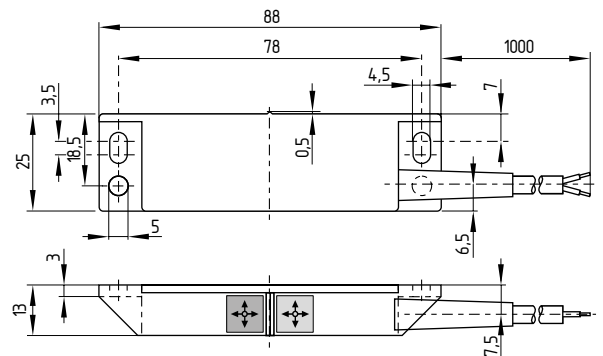
Switching frequency:	max. 300/s 300/s with BN 310-01Z, -10Z
Switching time "Close":	max. 0.3 ms ... 1.5 ms
Switching time "Open":	max. 1.5 ms
Bounce duration:	0.3 ms ... 0.6 ms
Mechanical life:	10 <sup>9</sup> operations
Electrical life:	10 <sup>6</sup> ... 10 <sup>9</sup> operations depending on load
Resistance to shock:	30 g / 11 ms
Resistance to vibration:	10 ... 55 Hz, Amplitude 1 mm
Connection:	Cable H03VV-F 2 x 0.75 mm <sup>2</sup> , 1 m
Switching point accuracy:	± 0.25 mm, T = constant



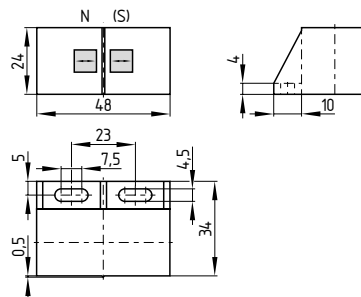
Further information along with the latest applicable declaration of conformity can be found in the Schmersal catalogues or in the online catalogue on the Internet: [www.schmersal.net](http://www.schmersal.net).

**Dimensions (in mm)**

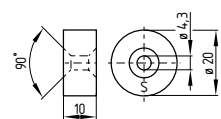
Magnetic reed switches BN 310



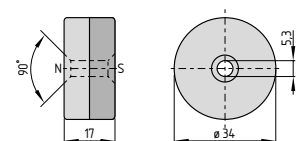
BP 31



BP 15



BP 34



An overview of possible actuators (switching distances 5 ... 69 mm) can be found in Schmersal catalogues or in the online catalogue on the internet at [www.schmersal.net](http://www.schmersal.net).

### Mounting

Magnetic reed switches and magnets pass one another over the front surface.

- The component can be mounted in any position.
- Do not use devices as limit stops.
- Ensure the magnetic reed switch is mounted on a flat surface to avoid tensile stresses that could damage the magnetic reed switch or lead to varying switching distances.
- Do not expose magnetic reed switches or magnets to strong vibrations or shocks.
- The mounting distance between two sensors should always be at least 50 mm.

To avoid any interference or reduction in the switching distances, please observe the following guidelines:

- If possible do not install the magnetic reed switch and magnet on ferromagnetic material. Otherwise, the switch must be mounted on iron with a non-magnetic layer of at least 20 mm.
- Do not install magnetic reed switches and magnets in strong magnetic fields.
- Keep away from metal chips.

#### Switch distance BN 310-01Z / -10Z

BP 31	X = 20 mm
BP 15	X = 6 mm
BP 34	X = 5-20 mm

#### Switch distance BN 310-RZ

BP 15 N, BP 15 S	X = 17 mm
2x BP 15/2 N, 2x BP 15/2 S	X = 22 mm
BP 34 N, BP 34 S	X = 15-30 mm



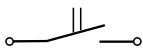
The opening and closing functions depend on the direction of actuation, the actuating magnets and the polarity of the actuating magnets. When the switches and actuators come together, the colours must coincide: Red (S) to red (S) and green (N) to green (N). This does not apply to the bistable contact.

### Electrical connection

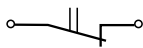


The electrical connection may only be carried out by authorised personnel in a de-energised condition.

**BN 310-01Z**  
1 NO



**BN 310-10Z**  
1 NC

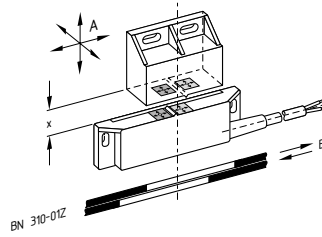


**BN 310-RZ**  
latching

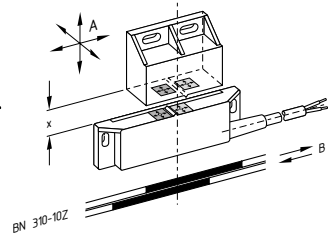
### Contact variants

#### Actuation and switching distances

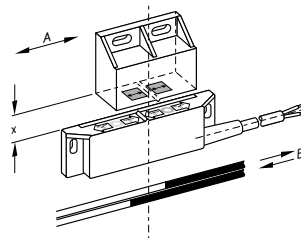
1 NC contact BN 310-01Z with N-S actuating magnet



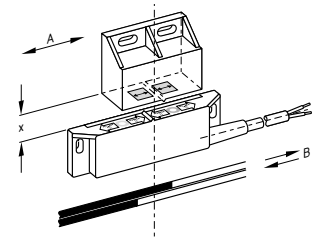
1 NO contact BN 310-10Z with N-S actuating magnet



1 bistable contact BN 310-RZ with N actuating magnet



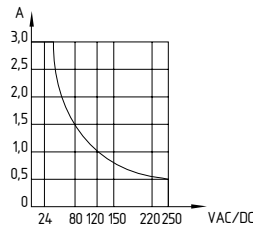
1 bistable contact BN 310-RZ with S actuating magnet



#### Key

- A: Actuation direction
- B: Switching behaviour of reed contacts
- X: Switching distance

#### Switching capacity



### Disassembly and disposal

#### Disassembly

The switch must be disassembled in a de-energised condition only.

#### Disposal

The switch must be disposed of in an appropriate manner in accordance with the national prescriptions and legislations.

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