



EN Operating instructions. pages 1 to 2
Original

Purpose

The magnetic reed switch is designed to monitor the position of movable protective equipment.

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

With suitable evaluation and concealed installation, the requirements for safety applications up to PL e in accordance with ISO 13849-1 can be satisfied.



The magnetic reed switch is classified as uncoded switchgear type 3 in accordance with ISO 14119.



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

Technical data

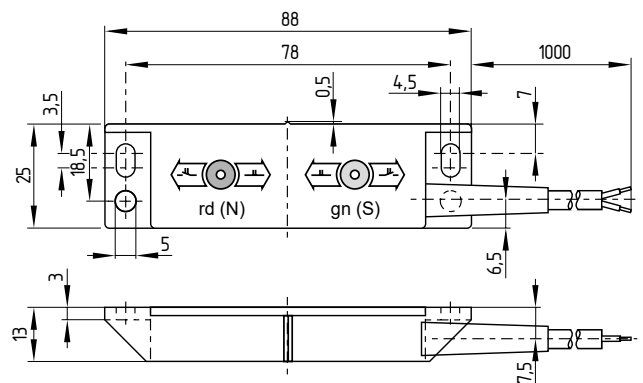
Standards:	IEC 60947-1
Enclosure:	glass-fibre reinforced thermoplastic
Operating principle:	magnetic
Actuating magnet:	BP 310, BP 15
Protection class:	IP67 to IEC 60529
Ambient temperature:	-25 °C ... +70 °C
Switching voltage:	max. 200 VAC/DC
Switching current:	max. 1 A
Switching capacity:	max. 120 VA 30 VA, W
Switching time "Close":	max. 2 ms
Switching time "Open":	max. 0.07 ms
Bounce duration:	max. 0.5 ms
Mechanical life:	10 ⁹ operations
Electrical life:	10 ⁶ ... 10 ⁹ operations depending on load
Resistance to shock:	30 g / 11 ms
Resistance to vibration:	10 ... 55 Hz Amplitude 1 mm
Termination:	Cable LIYY 4 x 0.25 mm ² , 1 m
B _{10D} to ISO 13849-1:	
- NC contacts (at 20 % contact load):	20.000.000
- NO contacts (at 20 % contact load):	20.000.000



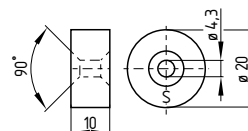
Further information along with the latest applicable declaration of conformity can be found in the Schmersal catalogues or in the online catalogue on the Internet: www.schmersal.net.

Dimensions (in mm)

Magnetic reed switch BN 310
(actuator BP 310 same dimensions)



Optional actuator
BP 15 N
BP 15 S



Mounting



When mounting to protective equipment, the requirements of standard ISO 14119 must be taken into account.

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.
- Inseparably mount magnetic reed switches and magnets to protective equipment (tamper-proof screws, e.g. Torx with pin, rivets, etc.).
- 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.
- Do not install magnetic reed switches and magnets in strong magnetic fields.
- Keep away from metal chips.

Switch distance

BP 310-1S, BP 310-1N	X = 10 mm
BP 310-2S, BP 310-2N	X = 15 mm
BP 15 S, BP 15 N	X = 20 mm

Electrical connection



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

The magnetic reed switches must be wired in accordance with the specified wire colours.

BN 310-2RZ
latching

WH — BK
BU — BN

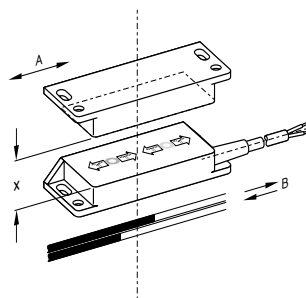
BN 310-11RZ
1 NO contact / 1 NC contact,
latching

WH — BK
BU — BN

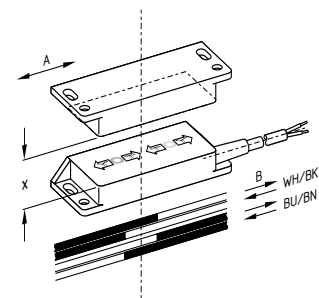
Contact variants

Actuation and switching distances

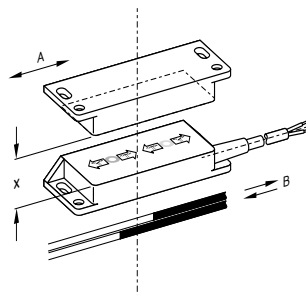
BN 310-2RZ
with actuators BP 310-1S, BP
310-2S, BP 15 S



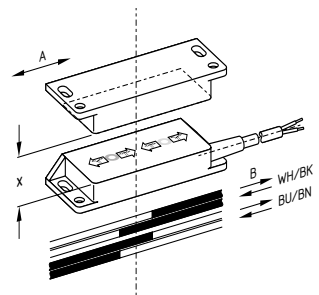
BN 310-11RZ
with actuators BP 310-1S, BP
310-2S, BP 15 S



BN 310-2RZ
with actuators BP 310-1N, BP
310-2N, BP 15 N



BN 310-11RZ
with actuators BP 310-1N, BP
310-2N, BP 15 N



Key

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

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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