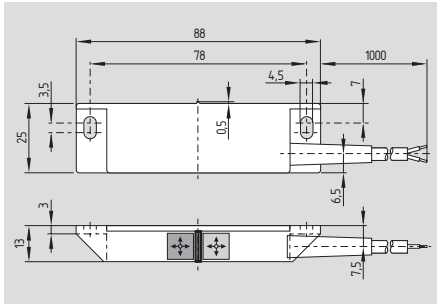


Magnetic reed switches

BN 310



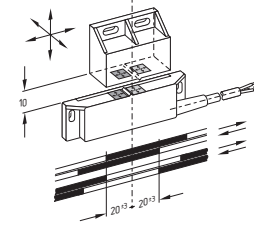
- Thermoplastic enclosure
- Flat design
- Long life
- Non-contacting principle
- 1 Reed contact
- Actuating distance up to 60 mm depending on actuating magnet and version
- Actuating surface and direction of actuation marked by switch symbol
- Pre-wired cable available, cable length 1 m
- Protection class IP 67

Technical data

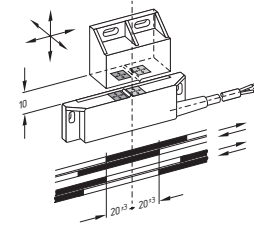
Standards: IEC/EN 60947-5-1
 Design: rectangular
 Enclosure: glass-fibre reinforced thermoplastic
 Protection class: IP 67 to EN 60529
 Termination: cable H03VV-F 2 x 0.75 mm², length 1 m
 Mode of operation: magnetic
 Switching voltage: max. 250 VAC
 Switching current: max. 3 A
 Switching capacity: max. 120 VA/W
 Dielectric strength: > 600 VAC (50 Hz)
 Switching speed: max. 18 m/s
 Switching frequency: max. 300/s for BN 310-01z, -10z
 Switching time "Close": 0.3 ms - 1.5 ms
 Switching time "Open": max. 0.5 ms
 Bounce duration: 0.3 ... 0.6 ms
 Ambient temperature: -25 °C ... +75 °C
 Mechanical life: 1 billion operations
 Electrical life: 1 million - 1 billion operations, depending on load
 Resistance to shock: 30 g / 11 ms
 Resistance to vibration: 30 g / 11 ms
 Resistance to vibration: 10 ... 55 Hz, amplitude 1 mm
 Switching point accuracy: ± 0.25 mm, T = constant

Contact variants

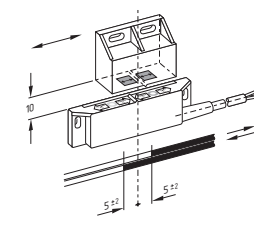
1 NC contact BN 310-01z with N-S actuating magnet



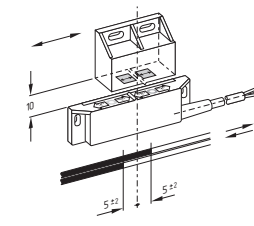
1 NO contact BN 310-10z with N-S actuating magnet



1 bistable contact BN 310-rz with N actuating magnet



1 bistable contact BN 310-rz with S actuating magnet



Approvals

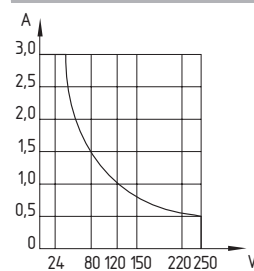


Ordering details

BN 310-①z

No.	Replace	Description
①	01	1 NC contact
	10	1 NO contact
	r	1 bistable contact

Note



Switching capacity:

The actuating magnets are not included in delivery.

To choose the appropriate actuating magnets, please use the tables on page 2-70.

Note

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.

The switch is to be mounted on iron with a non-magnetic layer of at least 20 mm.

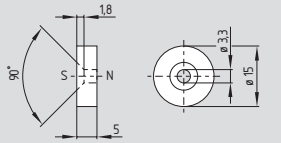
Selection table: Magnetic reed switches

Actuating distances

Actuating magnets	BN 80-10z	BN 80-01z	BN 80-rz	BN 85-r	BN 310-10z BN 310-01z	BN 310-rz	BN 32-10 BN 32-01 BN 32-11	BN 32-r BN 32-11r	BN 325-r	BN 65-10z BN 65-10z/1 BN 65-01z	BN 65-rz	BN 65-10z/V BN 65-01z/V BN 65-11z/V BN 65-11z/1V	BN 65-rz/V BN 65-11rz/V	BN 20-10z BN 20-20z BN 20-01z BN 20-02z BN 20-11z	BN 20-rz BN 20-2rz BN 20-11rz
Page 2-84	Page 2-72	Page 2-72	Page 2-72	Page 2-73	Page 2-76	Page 2-76	Page 2-77	Page 2-77	Page 2-78	Page 2-80	Page 2-80	Page 2-81	Page 2-81	Page 2-82	Page 2-82
BP 6 S			4-18	2-12											
BP 7 S			6-22												
BP 8	3-8	0-5													
BP 8 S				2-10											
BP 10	6-12	2-9	2-9		5		5			5					
BP 10 N						15		10	10		15				5
BP 10 S			10-30	5-20		15		10	10		15	5			5
2 x BP 10	12-20	2-13	2-13		17		12			17			3	12	
2 x BP 10 N						20		15	15		20				10
2 x BP 10 S			12-36	6-27		20		15	15		20	10			10
BP 15	8-14	2-10			6		6			6					
BP 15 N						17		12	12		17				7
BP 15 S			12-30	5-22		17		12	12		17	6			7
2 x BP 15	12-22	2-15			17		12			17					
2 x BP 15S			13-38	7-28											
2 x BP 15/2					17		12			17				12	
2 x BP 15/2 N						22		17	17		22				15
2 x BP 15/2 S						22		17	17		22				15
BP 34					5-20		15			15-20			15		
BP 34 N						15-30		10-25	10-25		15-30				10-25
BP 34 S			20-50	10-40		15-30		10-25	10-25		15-30	20			10-25
2 x BP 34	12-26	5-18													
2 x BP 34 S			22-60												
BP 20	12-24	0-14			20		15			20			10	15	
BP 20 N						3-25		5-20	5-20		25				15
BP 20 S			10-38	3-28		3-25		5-20	5-20		25	15			15
BP 31	12-24	0-14			20		15			20			10	15	
BP 31 N						3-25		5-20	5-20		25				15
BP 31 S			12-40	4-30		3-25		5-20	5-20		25	15			15
BP 11	22-28	2-16			8-20		5-15			20			15	15	
BP 11 N						15		10	10		15				5
BP 11 S			10-30	4-23		15		10	10		15	5			5
2 x BP 11 N						3-25		20	20		25				15
2 x BP 11 S						3-25		20	20		25	15			15
BP 12	24-32	4-20			10-30		10-25			10-30			20	25	
BP 12 N						20		15	15		20				10
BP 12 S			10-34	5-27		20		15	15		20	10			10
2 x BP 12 N						10-30		10-25	10-25		10-30				5-2
2 x BP 12 S						10-30		10-25	10-25		10-30	25			5-20
BP 21					25-50		20-40			25-50			45		
BP 21 N						15-45		15-40	15-40		15-45			20-45	10-35
BP 21 S						15-45		15-40	15-40		15-45	30			10-35
2 x BP 21 N						20-60		20-55	20-55		20-60				15-50
2 x BP 21 S						20-60		20-55	20-55		20-60	20-55			15-50
BP 22 S												25			
BP 22 N+BP 22 S													35		
2 x BP 22 S												15-55			
BE 20					20		15		20				10	15	
BE 20 N						20		15	15		20				10
BE 20 S						20		15	15		20	6			10

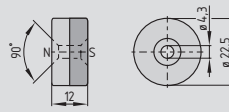
Magnetic reed switches

System components



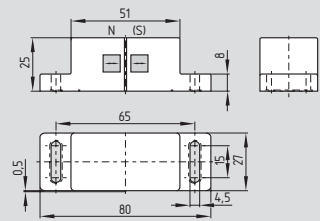
BP 6

System components

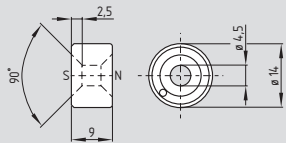


BP 15

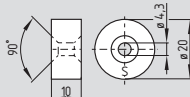
System components



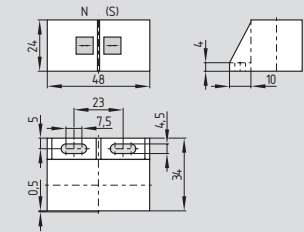
BP 20 N / BP 20 S



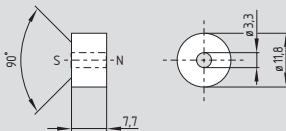
BP 7



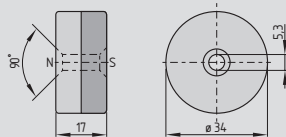
BP 15/2



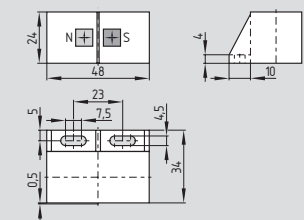
BP 31



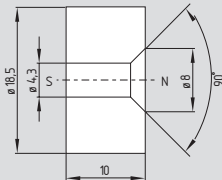
BP 8



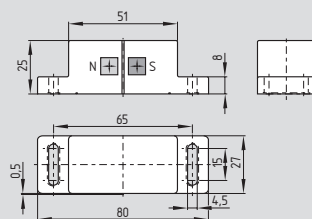
BP 34



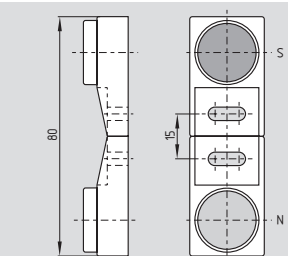
BP 31 N / BP 31 S



BP 10



BP 20



BP 11

Ordering details

Actuating magnet
Unenclosed, N-S
Unenclosed, N-S
Unenclosed, N-S
Unenclosed, N-S

BP 6
BP 7
BP 8
BP 10

Actuating magnet
thermoplastic enclosure, N-S
Unenclosed, N-S
thermoplastic enclosure, N-S
metal enclosure, N-S

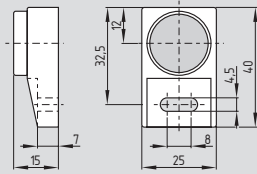
BP 15
BP 15/2
BP 34
BP 20

Actuating magnet
metal enclosure Al, N
metal enclosure Al, S
thermoplastic enclosure, N-S
thermoplastic enclosure, N
thermoplastic enclosure, S
metal enclosure Al, N-S

BP 20 N
BP 20 S
BP 31
BP 31 N
BP 31 S
BP 11

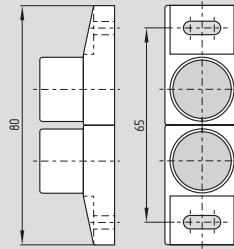
Magnetic reed switches

System components



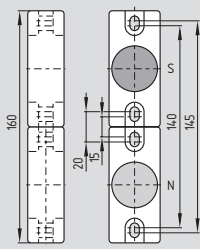
BP 11 N / BP 11 S

System components

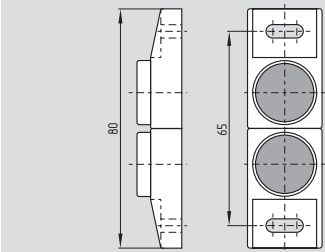


2x BP 12 N / 2x BP 12 S

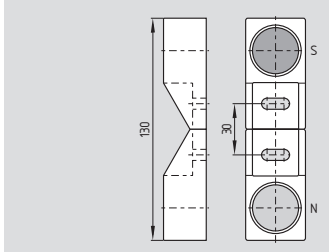
System components



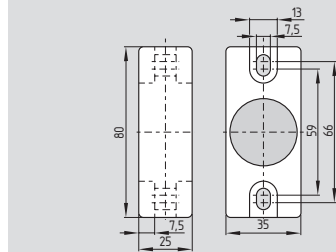
BP 22



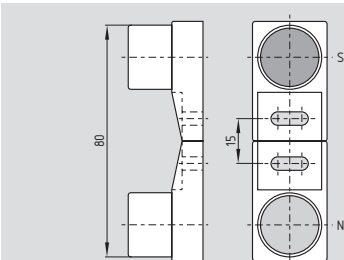
2x BP 11 N / 2x BP 11 S



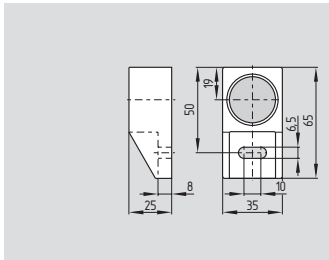
BP 21



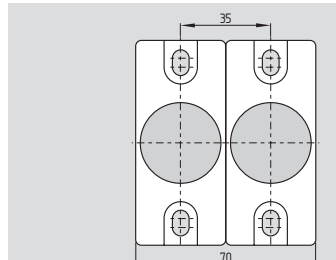
BP 22 N / BP 22 S



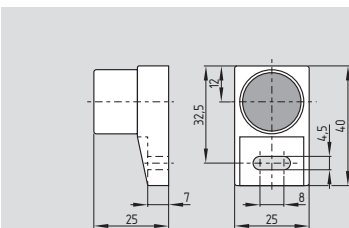
BP 12



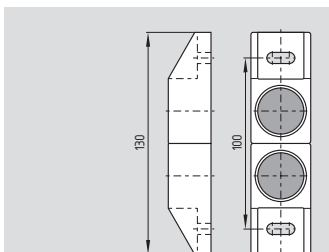
BP 21 N / BP 21 S



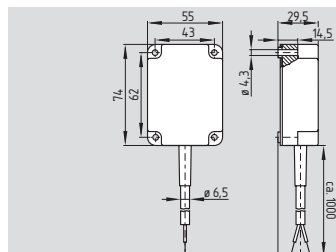
2x BP 22 N / 2x BP 22 S



BP 12 N / BP 12 S



2x BP 21 N / 2x BP 21 S



BE 20

Ordering details

Actuating magnet
 metal enclosure Al, N
 metal enclosure Al, S
 metal enclosure Al, 2x N
 metal enclosure Al, 2x S
 metal enclosure Al, N-S
 metal enclosure Al, N
 metal enclosure Al, S

BP 11 N
BP 11 S
2x BP 11 N
2x BP 11 S
BP 12
BP 12 N
BP 12 S

Ordering details

Actuating magnet
 metal enclosure Al, 2x N
 metal enclosure Al, 2x S
 metal enclosure Al, N-S
 metal enclosure Al, N
 metal enclosure Al, S
 metal enclosure Al, 2x N
 metal enclosure Al, 2x S

2x BP 12 N
2x BP 12 S
BP 21
BP 21 N
BP 21 S
2x BP 21 N
2x BP 21 S

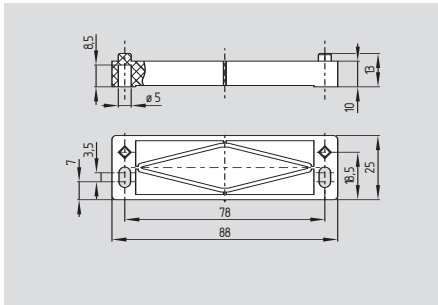
Ordering details

Actuating magnet
 metal enclosure Zn, N-S
 metal enclosure Zn, N
 metal enclosure Zn, S
 metal enclosure Zn, 2x N
 metal enclosure Zn, 2x S
 Electromagnet, thermo-
 plastic enclosure

BP 22
BP 22 N
BP 22 S
2x BP 22 N
2x BP 22 S
BE 20

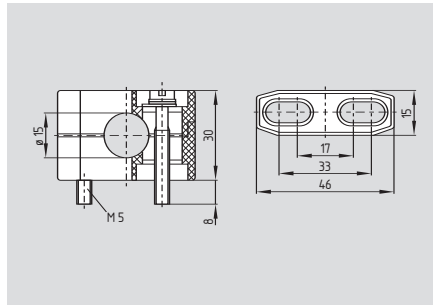
Magnetic reed switches

Spacer BN 31/33



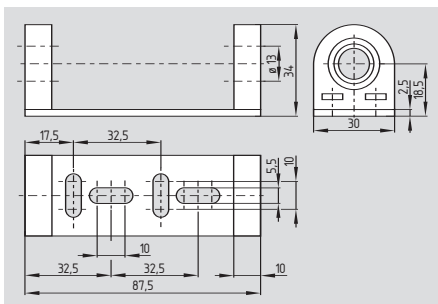
- To mount the magnetic safety sensor and actuator on ferromagnetic material

Terminal mounting H 15



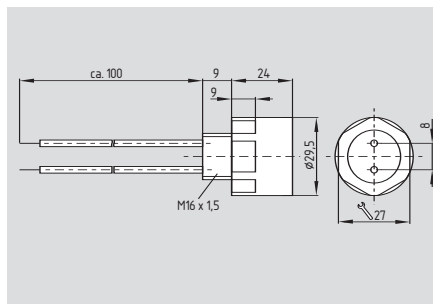
- For BN 65
- Material: thermoplastic

Holder H1/1



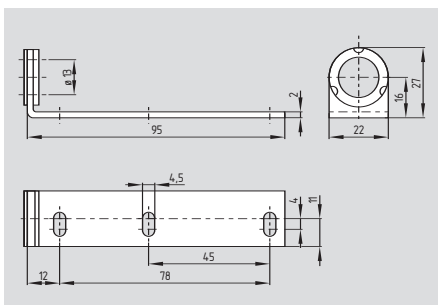
- For BN 65
- Metal holder with 2 elastic bearings
- Provides high resistance to vibration

Compensating coil KS 1



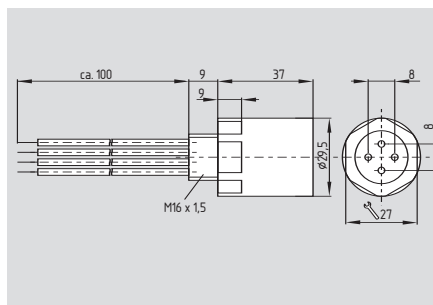
- Temperature range $-25\text{ }^{\circ}\text{C} \dots +90\text{ }^{\circ}\text{C}$
- For cable lengths up to 100 m
- Cable H05V-K 1 mm², cable length 100 mm
- The bucking coil is to be wired in series with the reed contact
- Version for high temperature $-25\text{ }^{\circ}\text{C} \dots +150\text{ }^{\circ}\text{C}$, ordering suffix -T

Holder H2



- For BN 65
- Metal holder with rubber washer

Compensating coil KS 2



- Temperature range $-25\text{ }^{\circ}\text{C} \dots +90\text{ }^{\circ}\text{C}$
- For cable lengths up to 200 m or 2 x 100 m
- Cable H05V-K 1 mm², cable length 100 mm
- The bucking coil is to be wired in series with the reed contact