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Find the *Schmersal BPS33* at our website: *Click HERE*

# Datasheet - BNS 33-02Z-2187

Safety sensors / BNS 33

☒ Preferred typ




(Minor differences between the printed image and the original product may exist!)

- Thermoplastic enclosure
- Concealed mounting possible
- Insensitive to transverse misalignment
- 88 mm x 25 mm x 13 mm
- Long life
- no mechanical wear
- Insensitive to soiling
- AS-Interface Safety at Work available
- Individual contact outlet

## Ordering details

| | |
|---|---|
| Product type description | BNS 33-02Z-2187 |
| Article number | 101128792 |
| EAN Code | 4030661049595 |
| eCl@ss | 27-27-24-02 |

## Approval

| | |
|---|---|
| Approval | BG<br>USA/CAN<br>EAC |

## Classification

| | |
|---|---|
| Standards | EN ISO 13849-1 |
| B10d Normally-closed contact (NC) | 25.000.000 |
| - notice | at max. 20% contact load |
| Mission time | 20 Years |
| notice | $MTTF_d = \frac{B_{10d}}{0,1 \times n_{op}}$<br>$n_{op} = \frac{d_{op} \times h_{op} \times 3600\ s/h}{t_{cycle}}$ |

## Global Properties

| | |
|---|---|
| Permanent light | BNS 33 |
| Standards | IEC 60947-5-3, BG-GS-ET-14 |
| Compliance with the Directives (Y/N) CE | Yes |
| Materials | |
| - Material of the housings | Plastic, glass-fibre reinforced thermoplastic |
| - Material of the cable mantle | PVC |
| Weight | 70 |
| Monitoring function of downstream devices (Y/N) | No |

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| | |
|---|---|
| Prerequisite evaluation unit | Yes |
| Recommended safety-monitoring module | |
| Recommended actuator | BPS 33, BPS 33-2326 |

## Mechanical data

| | |
|---|---|
| Design of electrical connection | Cable |
| Cable length | 1 |
| Conductors | 0,25 |
| AWG-Number | 23 |
| mechanical installation conditions | not flush |
| Active area | Side |
| Ensured switch distance ON $S_{ao}$ | 5 mm / 8 mm |
| - BPS 33 = 5 mm Actuating magnet | |
| - BPS 33-2326 = 8 mm Actuating magnet | |
| Ensured switch distance OFF $S_{ar}$ | 15 mm / 18 mm |
| - BPS 33-2326 = 18 mm Actuating magnet | |
| - BPS 33 = 15 mm Actuating magnet | |
| Repeat accuracy $R_R$ | ≤ 0,1 x $S_{ao}$ |
| Type of actuation | Magnet |
| Direction of motion | head-on with regard to the active surface |
| restistance to shock | 30 g / 11 ms |
| Resistance to vibration | 10 … 55 HZ, Amplitude 1 mm |

## Ambient conditions

| | |
|---|---|
| Ambient temperature | |
| - Min. environmental temperature | −25 °C |
| - Max. environmental temperature | +70 °C |
| Storage and transport temperature | |
| - Min. Storage and transport temperature | −25 °C |
| - Max. Storage and transport temperature | +70 °C |
| Protection class | IP67 |

## Electrical data

| | |
|---|---|
| Integrated Safety monitoring module available (Y/N) | No |
| Cross circuit/short circuit recognition possible (Y/N) | Yes |
| Voltage type | VAC/DC |
| Switch frequency | max. 5 HZ |
| Switching voltage | max. 100 VAC/DC |
| Switching current | max. 250 mA |
| Switching capacity | max. 3 W |

## Outputs

| | |
|---|---|
| Design of control output | Other, Reed contakts |
| Number of shutters | 0 |
| Number of openers | 2 |

## Electrical data - Safety outputs

| | |
|---|---|
| Number of secure semi-conductor outputs | 0 |

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| | |
|---|---|
| Number of secure outputs with contact | 0 |

## Electrical data - Diagnostic output

| | |
|---|---|
| Number of semi-conductor outputs with signaling function | 0 |
| Number of outputs with signaling function that already have a contact | 0 |

## LED switching conditions display

| | |
|---|---|
| LED switching conditions display (Y/N) | No |

## ATEX

| | |
|---|---|
| Explosion protection categories for gases | None |
| Explosion protected category for dusts | None |

## Dimensions

| | |
|---|---|
| Dimensions of the sensor | |
| - Width of sensor | 88 mm |
| - Height of sensor | 25 mm |
| - Length of sensor | 13 mm |

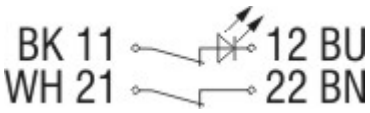
## notice

Contact symbols shown for the closed condition of the guard device.
The contact configuration for versions with or without LED is identical.

## Included in delivery

Actuators must be ordered separately.

## Diagram




Note Diagram
positive break NC contact
active
no active
Normally-open contact
Normally-closed contact

## Ordering code

BNS 33-(1)Z(2)-(3)-(4)

| (1) | |
|---|---|
| **02** | 2 Opener (NC) |
| **11** | 1 Normally open contact (NO) / 1 Opener (NC) |
| **12** | 1 Normally open contact (NO) / 2 Opener (NC) |

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**(2)**

| | |
|---|---|
| *without* | without LED switching conditions display |
| **G** | with LED switching conditions display |

**(3)**

| | |
|---|---|
| *without* | with cable |
| **ST** | with connector M8 |

**(4)**

| | |
|---|---|
| **2187** | Individual contact outlet |
| **2187-10** | Individual contact outlet, with LED |
| **2237** | Actuation from cable direction |

## Documents

**Operating instructions and Declaration of conformity** (it) 327 kB, 23.08.2018
Code: mrl_bns33-2187-2363_it

**Operating instructions and Declaration of conformity** (pt) 336 kB, 23.08.2018
Code: mrl_bns33-2187-2363_pt

**Operating instructions and Declaration of conformity** (de) 294 kB, 21.08.2018
Code: mrl_bns33-2187-2363_de

**Operating instructions and Declaration of conformity** (es) 333 kB, 23.08.2018
Code: mrl_bns33-2187-2363_es

**Operating instructions and Declaration of conformity** (da) 333 kB, 23.08.2018
Code: mrl_bns33-2187-2363_da

**Operating instructions and Declaration of conformity** (fr) 335 kB, 23.08.2018
Code: mrl_bns33-2187-2363_fr

**Operating instructions and Declaration of conformity** (pl) 370 kB, 23.08.2018
Code: mrl_bns33-2187-2363_pl

**Operating instructions and Declaration of conformity** (sv) 332 kB, 23.08.2018
Code: mrl_bns33-2187-2363_sv

**Operating instructions and Declaration of conformity** (jp) 557 kB, 06.06.2018
Code: mrl_bns33-2187-2363_jp

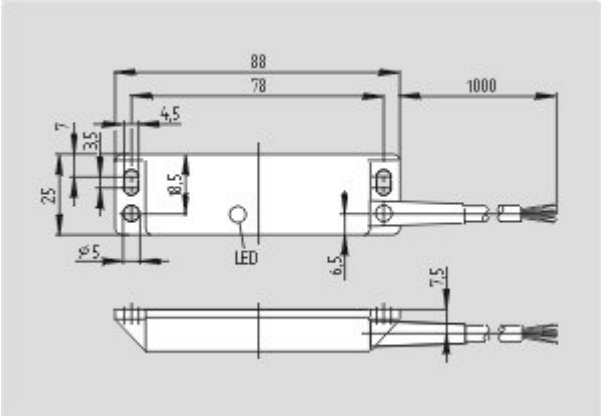
**Operating instructions and Declaration of conformity** (nl) 332 kB, 23.08.2018
Code: mrl_bns33-2187-2363_nl

**Operating instructions and Declaration of conformity** (en) 336 kB, 21.08.2018
Code: mrl_bns33-2187-2363_en

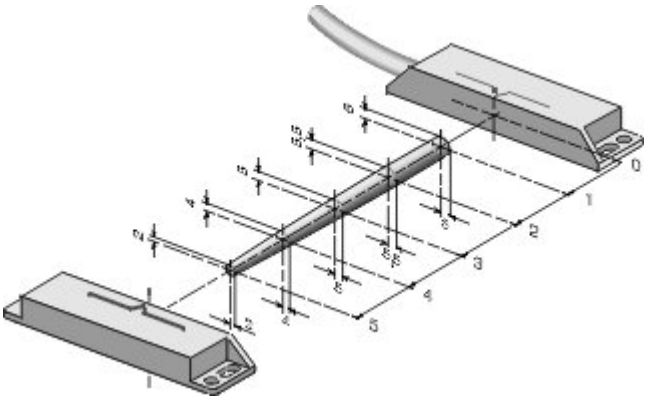
**EAC certification** (ru) 782 kB, 05.10.2015
Code: q_6044p17_ru

## Images

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Dimensional drawing (basic component)


Characteristic curve

## System components

### Actuator



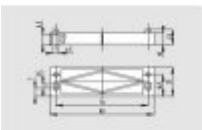
**101107771 - BPS 33**



**101148482 - BPS 33-2326**

• higher switching distance $S_{ao}$ 8 mm

### Accessories



**101158893 - SPACER BN 31/33**

• to mount the magnetic safety sensor and actuator on ferromagnetic material



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