



Safety sensor BZ 16

Features/Options:

- Thermoplastic enclosure
- Long life
- Differential inputs: Induction / magnetic operating principle
- Internal monitoring, high manipulation protection
- Potential-free outputs
- Signalling contact
- Status LED
- 1 NO/2 NC contact or 3 NC contacts
- Available with 2 different actuating planes:
actuating from the top "T",
actuating from the front "F".
Please indicate the desired actuating plane when ordering.
- Rated switching distance $s_n = 12 \text{ mm}$
- Wiring compartment
- Version with higher degree of protection IP69 available - see chapter [/ BZ 16 IP69 Extreme >](#)

Notes

- The actuator is not included in the delivery of the switches

Technical data

Applied standards	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 60947-5-2, EN 60947-5-3, EN ISO 14119, EN 60204-1, EN ISO 13849-1, EN 62061, 2004/108/EG
Enclosure	thermoplastic, glass-fibre reinforced, impact resistant, self-extinguishing UL 94 V-0
Defined object	actuator BZ 16-B1 with low coding
Sensor type	type 4 interlocking device
Coding level	low coding
Tightening torque	enclosure mounting screws: max. 2 Nm cover screws: max. 1.5 Nm actuator screws: max. 2 Nm
Degree of protection	IP 67 to IEC/EN 60529
Safety-relevant data:	
EN ISO 13849-1	Performance Level PL e
Category	3
B_{10d} (10 % load)	20 million
T_M	max. 20 years
$MTTF_d$	100 years
DC/DC _{avg}	96 %
EN 62061	SIL CL 3
PFH_d	$\geq 4.29 \times 10^{-8} \text{ 1/h}$
h_{op}	8 h/day
d_{op}	220 days/year
t_{zyklus}	20 s

Errors and omissions excepted.



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Technical data

Note	The safety-related data are based on a load of 24 V / 0.1 A / DC-1 for the enabling paths. With higher load currents for the enabling paths and other requirement rates n_{op} , the safety-related data vary from the given data and can be provided on request.
Rated switching distance s_n	12 mm (10 mm with flush mounting)
Assured switching distance »ON« s_{ao}	10 mm (8 mm with flush mounting)
Assured switching distance »OFF« s_{ar}	25 mm
Hysteresis	approx. 6 mm
Sideways tolerance	≤ 3 mm
Repeatability	± 1 mm
Rated operating current/voltage I_e/U_e	140 mA/24 VDC ± 15 % (reverse voltage protected); output contacts: max. 3 A/24 VAC/DC, min. 10 mA/5 VAC/DC; signalling contact: max. 1 A/24 VAC/DC, min. 100 μ A/100 mVDC
No-load supply current I_0	≤ 70 mA
Short-circuit protection	U_e : 0.25 A (slow blow); output contacts: 4 A (gG/gN) incoming series-connected
Outputs	2 enabling paths (2 NC or 1 NO/1 NC) 1 signalling contact (1 NC)
Switching voltage	max. 30 VAC/DC
Conditional short-circuit current	100 A
Utilisation category	AC-15; DC-13 (output contacts) AC-12; DC-12 (signalling contact)
Rated insulation voltage U_i	250 VAC
Rated impulse withstand voltage U_{imp}	1.5 kV
Voltage drop at I_e	max. 0.6 V
Overvoltage category	III
Switching frequency	max. 1 Hz
Attendance delay t_v	< 300 ms
Risk time	max. 165 ms
Degree of pollution	3
Ambient temperature	0 °C ... +55 °C
Storage and shipping temperature	-20 °C ... +70 °C
Mechanical life	50 mio. operations

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Contact material	output contacts: AgSnO self-cleaning, positive-guided; signalling contact: AgNi, gold-plated
Contact resistance	output contacts: 100 mΩ in new condition; signalling contact: max. 30 mΩ
Connection	wiring compartment with socket screw clamps 8-pole
Cable entry	3 x M20 x 1.5 (press-out blanks in enclosure)
Cable cross-section	min. 0.14 mm ² / AWG 28 max. 1.5 mm ² / AWG 16