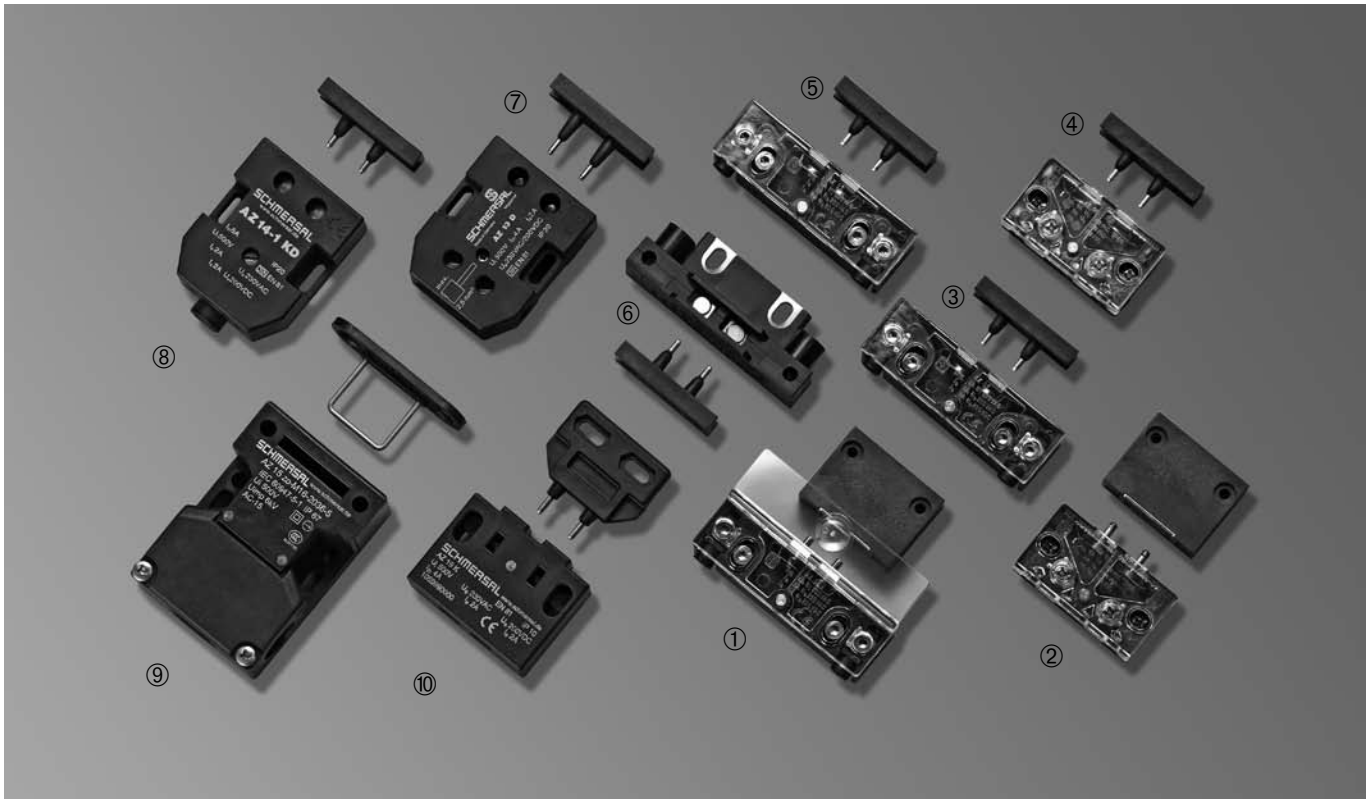
Door contacts

4

Door contacts with positive break



A comprehensive programme for a well-defined field of application
The door contacts with positive break from the AZ programme are used as door and locking mechanism contacts. The programme comprises as much as twelve different series, so that a suitable door contact with positive break is available for all types of lifts and lift doors. Alternatively, the lift manufacturer can use the BNS 260 non-contact door contact (see page 4-18) to monitor the door position or the lokking mechanism.

A tried-and-tested principle
The contact element and the actuator of the safety switches from the AZ programme are not physically linked, but rather functionally connected or disconnected when the switch is actuated. The NC contact in the switch then is positively opened. Depending on the execution, the contacts are integrated in the switch either in the contact jumpers. Different cable entries are available and the switches have distinguishing features as well, for instance with regard to their protection class, the size of the wiring compartment and their dimensions.
The large variety of actuators enables a perfect adaptation of the door contact with positive break to the specific conditions. Furthermore, special versions are available on request; these versions however are not represented in this catalogue.

Standard or customer-specific?
The new AZ 05x and AZ 06x series are amongst the most compact default door contact switches for universal application, which are offered on the lift switchgear market.
As a result, they enable a perfect integration in the surrounding construction, even if the door operator is located in confined spaces. They furthermore can be used for similar application in elevator technology, e.g. for hook bar monitoring or detecting the pulled-out position of telescopic toe guards.

The advantages of large-scale production
As the AZ 05x and AZ 06x series are manufactured at large scale and therefore at extremely advantageous cost price at well. Besides the economical advantage, the new default door contact switches also feature many technical arguments for their application (refer to page 4-4).
Many manufacturers of elevators or elevator doors undoubtedly will replace their currently used customer-specific door contacts with the new default programme of the AZ 05x and AZ 06x (refer to page 4-7)

Door contacts with positive break

Overview

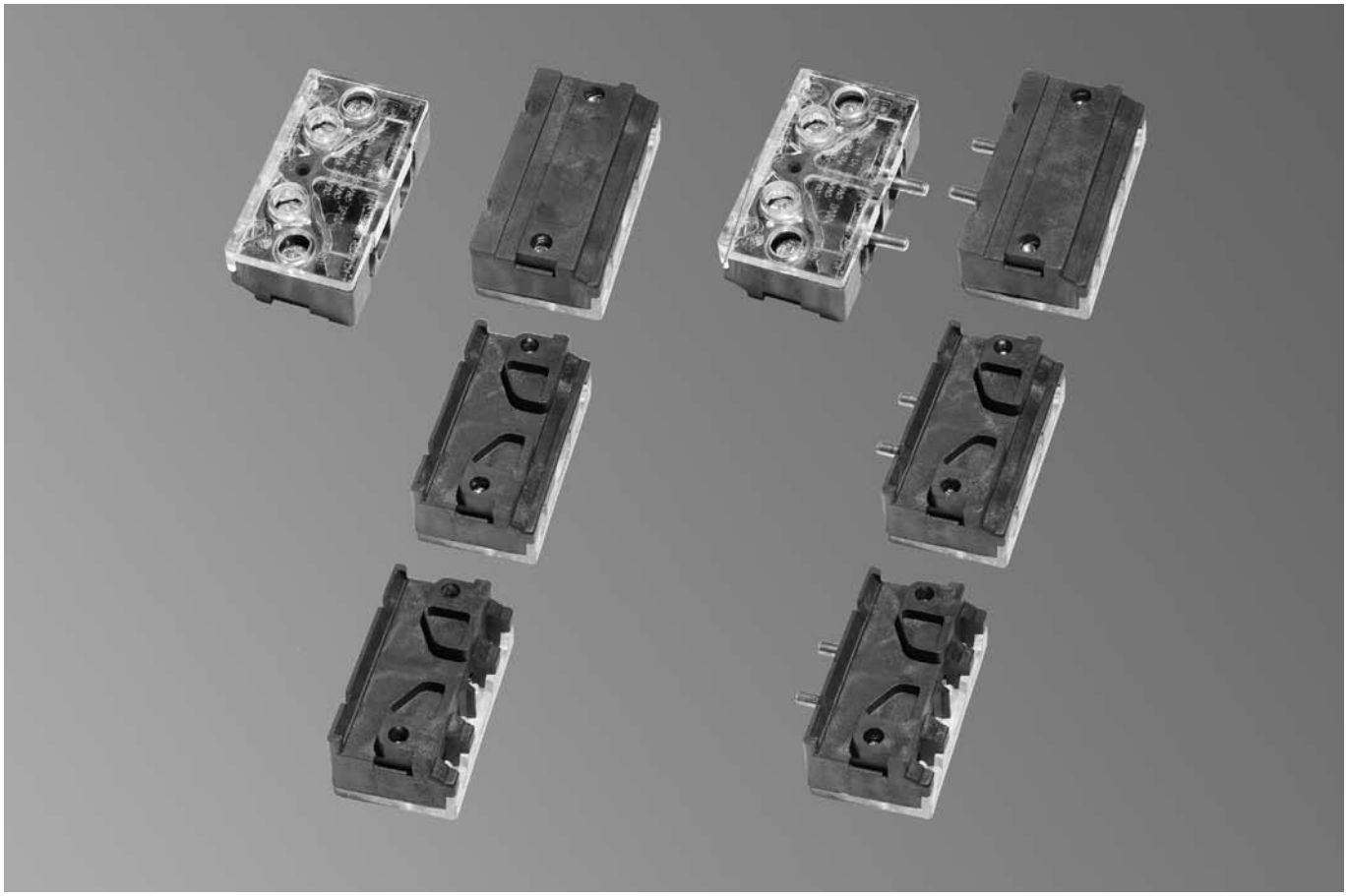
		①	②	③	④		⑤	⑥	⑦	⑧	⑨	⑩
		AZ 05x	AZ 06x	AZ 05	AZ 06	AZ 07	AZ 08	AZ 13	AZ 14-1	AZ 19	AZ 15 zo	BNS 260
Enclosure	Thermoplastic	●	●	●	●	●	●	●	●	●	●	●
Shock protection	with additional partition	–	–	●	–	–	●	–	–	–	–	–
Actuators	default actuator	●	●	●	●	●	●	●	●	●	–	–
	special actuator	○	○	○	○	○	○	○	○	○	●	●
Termination	contact pin inside switch	●	–	●	–	–	–	–	–	–	–	–
	contact pin in actuator jumper	–	●	–	●	●	●	●	●	●	●	●
	number of actuating planes	1	1	1	1	1	1	2	2	1	4	1
Cover and enclosure	inseparable	●	●	●	●	●	●	●	–	●	–	–
	separate wiring compartment	–	–	–	–	–	–	–	●	–	●	–
Protection class	IP	00	20	00	20	20	20	20	20	10	67	67
	double insulation	–	–	–	–	–	–	–	–	–	●	–
Test certificate / Homologation	TÜV	●	●	●	●	●	●	–	●	–	●	●
	UL	●	●	●	●	●	–	–	–	–	*	●
	CCC	●	●	–	–	–	–	–	–	–	–	–
Fixation	moveable	–	–	–	–	●	●	●	●	●	●	–
	standard	●	●	●	●	–	–	–	–	–	●	●
Fixing screws	self-tapping Pozi drive screws	●	●	○	○	○	–	–	–	–	–	–
	M4, captive	●	●	●	●	●	–	–	–	●	–	–
Cable entries	single-wire entry	●	●	●	●	●	●	●	–	●	–	–
	shielded cable	●	●	–	–	–	–	–	●	–	●	●
	with cable protectors	–	–	○	●	○	–	–	–	–	–	–
	with cable gland	●	●	–	–	–	●	●	–	●	–	–
	large wiring compartment	–	–	–	–	–	–	–	–	–	●	–
	with connecting cable	–	–	–	–	–	–	–	–	–	–	●
	integrated connector	–	–	–	–	–	–	–	–	–	–	○
Page		4-12	4-14	4-4	4-5	4-6	4-7	4-8	4-9	4-11	4-10	4-18

This table gives a general overview of the product range. The next pages include a detailed description of the individual components, as well as information about special versions.

Legend:

● Default
– impossible
○ optional
* under preparation

Enhanced efficiency: the new AZ05x / AZ 06x door contact switches



The new standard: the AZ05x/ AZ06x series
With the new door contact switches of the AZ05x/ AZ06x series, Schmersal offer lift manufacturers the opportunity to lower their costs and to reduce the number of variants of the used lift switchgear. Two series with three versions each are available and every variant features its own advantages.

The series
- AZ 06x: protected against insertion of fingers or similar objects to IP 20. The actuator enters into the switch, thus closing the safety circuit. The default solution for the door contact and other applications in lift technology.
- AZ 05x: two spring-loaded contact elements close the safety circuit, when they are connected by the smooth actuator. The perfect solution, when the actuator cannot be inserted correctly into the switch or when large tolerances need to be compensated.

The variants
- AZ 061/ AZ 051: enclosure height 16 mm
- AZ 062/ AZ 052: enclosure height 19 mm, bottom-side cable ducts
- AZ 063/ AZ 053: enclosure height 19 mm, bottom- and rear-side cable ducts

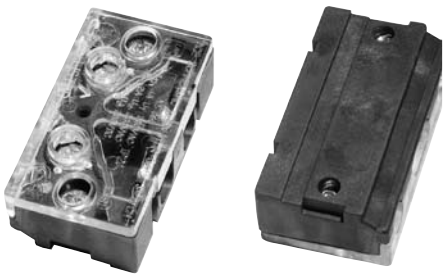
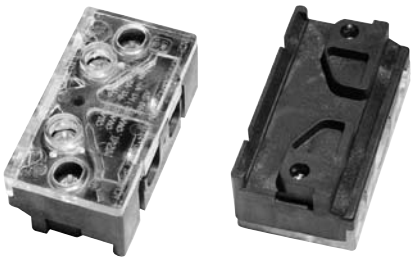
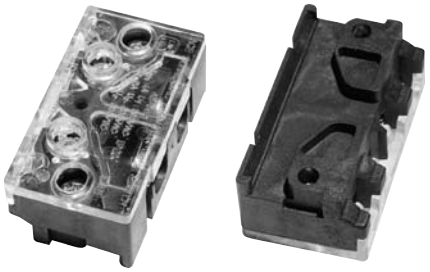
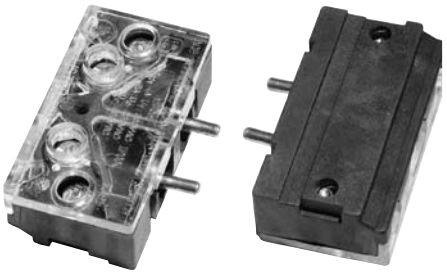
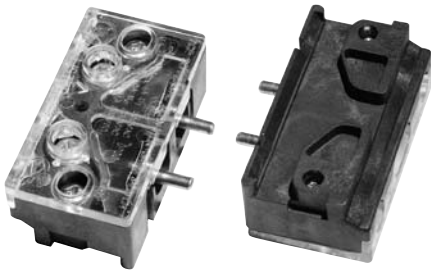
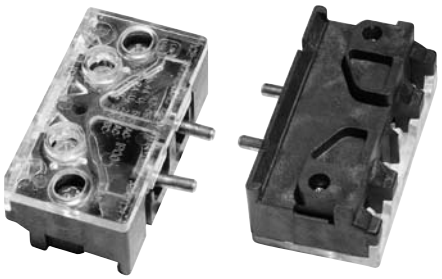
Dimensions and functions: selection possibilities notwithstanding standardisation
The two series with three enclosure types each enable using the new AZ 05x/ AZ 06x in completely different fields of application as well as on a large variety of lift doors. They are compatible with many customer-specific door contact switches and offer many interesting features and functions.

Focus on the advantages: you choose the required functions

The entire new switch family provides for:
- Increased lifetime: the tested mechanical life of the AZ 06x amounts up to approximately 10 million operations.
- More efficient fitting: the captive M4 fixing screws are equipped with self-tapping thread. Thread-cutting no longer is required, only a 3.6-mm hole needs to be drilled or punched. The screws can also be used in existing M4 threads.
- More flexible fitting: all screws feature combined screw heads – P2 Pozi for the electrical screwdrivers of automated production, slots for the screwdrivers used by service mechanics.
- Universal application: all switches are certified to EN 81, cULus and CCC and therefore suitable for worldwide use.
- Perfect adjustment to the mounting situation through different actuators
- Simplified stock-keeping through standardisation
- Highest quality at favourable prices through efficient large-scale production

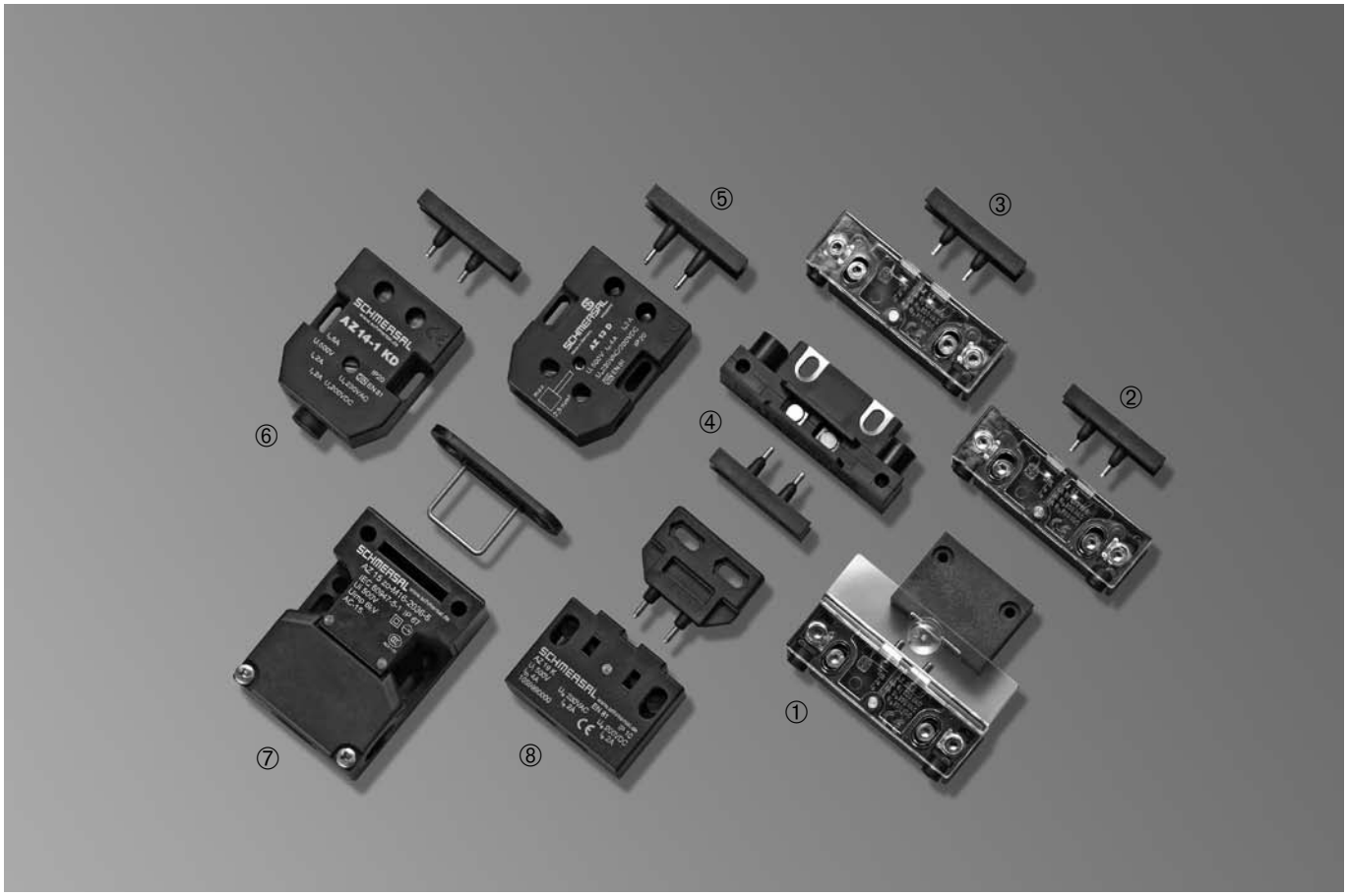
Additional features of the AZ 052 and AZ 062:
- "One for all": the enclosure height has been raised by 3 mm. In this way, the mounting and contact dimensions are identical to those of the AZ 05, AZ 06, AZ 07 and other conventional switches. This compatibility provides for universal application possibilities
- Simplified confectioning: the bottom part is designed as cable duct. In this way, the connecting cables can be directly wired to the switch.

Additional features of the AZ 053 and AZ 063:
- Optimal cable guidance in any mounting situation: additional cable ducts to the rear of the switch enable a smooth fitting in the narrowest mounting conditions. The connecting cable cannot be derived inside the enclosure contour or sideways. Alternatively, the cable ducts at the bottom of the switch can be used.
- Compact and versatile: multiple connecting possibilities despite unchanged dimensions

Standard		
AZ 061	**AZ 062**	**AZ 063**
		
Alternative		
AZ 051	**AZ 052**	**AZ 053**
		
enclosure height 16 mm	enclosure height 19 mm	enclosure height 19 mm
without cable ducts	cable ducts at bottom side	cable ducts bottom side and rear
M4 Pozidrive screws, self-forming	M4 Pozidrive screws, self-forming	M4 Pozidrive screws, self-forming

Note: For the new door contact switches, the tried-and-tested features of the AZ programme were maintained, for instance:
- The rear side of the switch offers wiring possibilities both for single-conductor and sheeted cables.
- The largely dimensioned holes enable entering the cable insulation into the enclosure.

Door contacts with positive break: the entire programme



Door contacts with positive break: the entire programme
Leading “Global Players” from all over the world as well as many medium-sized manufacturers of lifts, lift cars and lift doors rely on door contacts with positive break from Schmersal.
Whether an individual solution for a special application or an extremely low-cost door contact switch from the highly automated mass production is required: the AZ programme always includes the required switch for monitoring the door position or the locking mechanism.

① **AZ 05**
- The large enclosure cover protects the contact area and facilitates the required protection against insertion with fingers
- Hexagonal screws facilitate fitting in difficult mounting situations
- Mounting and contact dimensions are identical to AZ 052 / AZ 053

② **AZ 06**
- Hexagonal screws facilitate fitting in difficult mounting situations
- Mounting and contact dimensions are identical to AZ 062 / AZ 063

③ **AZ 07**
- Identical to AZ 06, however with longitudinal slots for fine adjustment.

④ **AZ 08**
- Predestined for hook bar monitoring because of the 90° cable entry with regard to the actuating plane and the enclosure geometry

⑤ **AZ 13**
- Predestined for hook bar monitoring because of the 90° cable entry with regard to the actuating plane and the enclosure geometry
- Actuation from top or from bottom enabled
- Longitudinal slots for fine adjustment
- Wiring of single-conductor cables

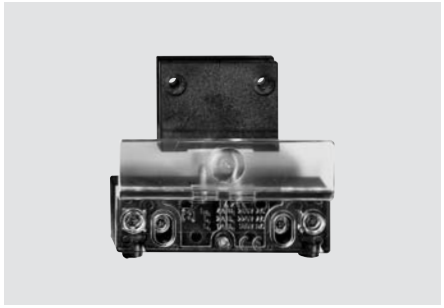
⑥ **AZ 14-1**
- Predestined for hook bar monitoring because of the 90° cable entry with regard to the actuating plane and the enclosure geometry
- Actuation from top or from bottom enabled
- Wiring compartment for sheeted cables
- Longitudinal slots for fine adjustment
- Enclosure with opening for earth cable

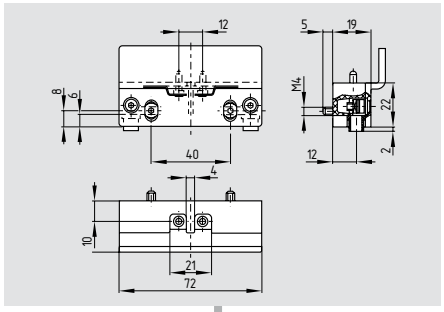
⑦ **AZ 15 zo**
- Protection class IP 67 and double insulation enable using the switch in dusty and wet environments
- Longitudinal slots for fine adjustment
- Four actuating planes

⑧ **AZ 19**
- Terminals with cage clamps for an extremely fast confectioning
- Longitudinal slots for fine adjustment

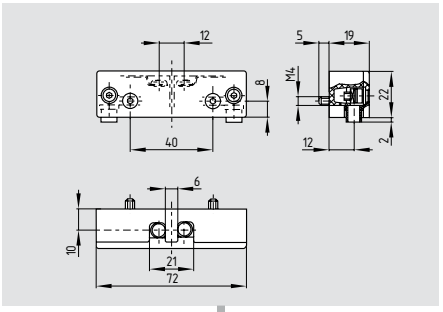
Selection of new forms

AZ 05

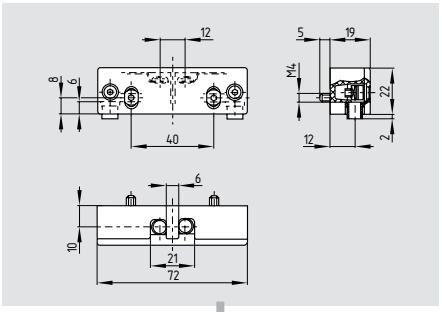




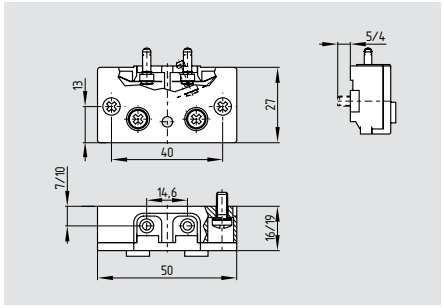
AZ 06



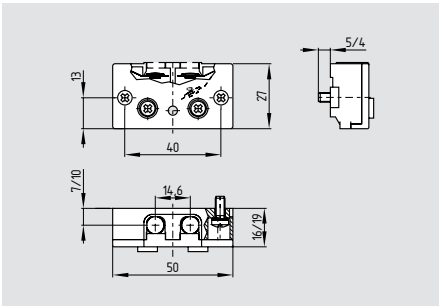
AZ 07



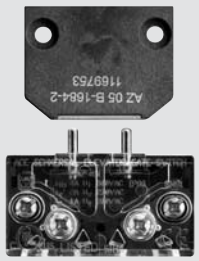
AZ 051, AZ 052, AZ 053



AZ 061, AZ 062, AZ 063



AZ 051, AZ 052, AZ 053



- Thermoplastic enclosure
- Contact pin inside switch
- Transparent cover
- 2 cable entries per terminal
- Self-cleaning contacts
- M4 , self-tapping, captive Pozidrive fixing screws
- Fixing screws can be covered with plugs
- Switch with double break
- Limit switch/lockout switch
- Mounting and contact dimensions are identical to AZ 05, (see page 4-7)

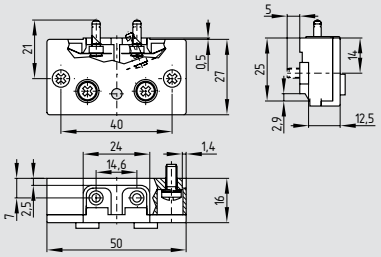
AZ 052 (additional)
- Bottom-side cable ducts (see page 4-5)

AZ 053 (additional)
- Bottom- and rear-side cable ducts (see page 4-5)

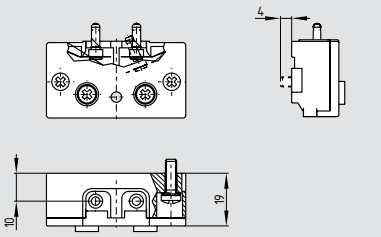
Technical data

Standards:	EN 81; CAN/CSA-B44.1/ ASME-A15.5
Test certificate:	test assessment from TÜV; cULus
Enclosure:	ultramid, self-extinguishing, glass-fibre reinforced
Cover:	Polycarbonate, self-extinguishing, transparent
Actuator:	silver-plated brass, in ultramid, self-extinguishing
Protection class:	IP 00 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contact
Termination:	M4 screw terminals, DIN 7984, with self-lifting clamps
Actuating force at 5 mm travel	1.6 N ± 20 %, 5 mm total travel
U_i:	500 V
I_{th}:	4 A
Utilisation category:	AC-15; DC-13
I_e/U_e:	2 A / 230 VAC; 1 A / 200 VDC
Short-time current resistance:	2 A gG
Ambient temperature:	– 30 °C … + 70 °C
Mechanical life:	>1 million operations
Relative atmospheric humidity:	≤ 95 %, non-condensing

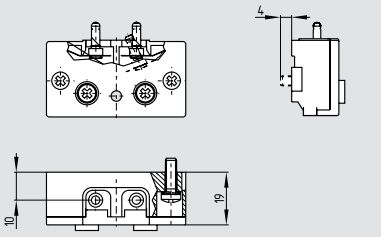
Technical drawings



AZ 051



AZ 052



AZ 053

Approvals

cULus CCC TÜV CE

Ordering data

AZ 051K	Door contact without actuators
AZ 052K	Door contact without actuators
AZ 053K	Door contact without actuators

Notes

Actuators must be ordered separately.
see page 4-19

Actuator / Ordering data

Actuator	**AZ 05 B**
Actuator	**AZ 05 B-1684**

AZ 061, AZ 062, AZ 063

- Thermoplastic enclosure
- Contact pins in actuator jumper
- Transparent cover
- Protection class IP 20
- TÜV assesment; cULus and CCC admission
- 2 cable entries per terminal
- Self-cleaning contacts
- M4 , self-tapping, captive Pozidrive fixing screws
- Switch with double break
- Mounting and contact dimensions are identical to AZ 06, AZ 07 (see page 4-7)

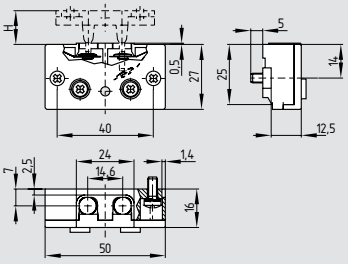
AZ 062 (additional)
- Rear-side cable ducts (see page 4-5)

AZ 063 (additional)
- Bottom- and rear-side cable ducts (see page 4-5)

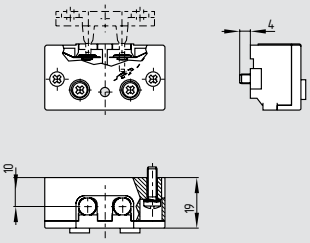
Technical data

Standards:	EN 81; CAN/CSA-B44.1/ ASME-A15.5
Test certificate:	test assessment from TÜV; cULus
Enclosure:	Ultramid, self-extinguishing, glass-fibre reinforced
Cover:	Polycarbonate, self-extinguishing, transparent
Actuator:	silver-plated brass, Ultramid, self-extinguishing
Protection class:	IP 20 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	Cu-rivets with silver coating
Switching elements:	1 NC contact
Switching system:	self-cleaning contacts
Termination:	M4 screw terminals, DIN 7984, with self-lifting clamps
Actuating force at 5 mm travel	1.6 N ± 20 %, 7 mm Total travel
U_i:	500 V
I_{th}:	4 A
Utilisation category:	AC-15; DC-13
I_e/U_e:	2 A / 230 VAC; 2 A / 200 VDC
Short-time current resistance:	2 A gG
Ambient temperature:	– 30 °C … + 70 °C
Mechanical life:	>10 million operations
Relative atmospheric humidity:	≤ 95 %, non-condensing

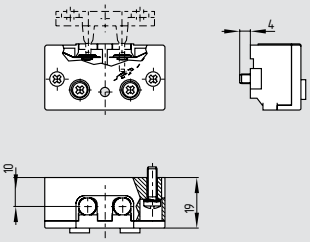
Technical drawings



AZ 061



AZ 062



AZ 063

Approvals

cULus CCC TÜV CE

Ordering data

AZ 061K	Door contact without actuators
AZ 062K	Door contact without actuators
AZ 063K	Door contact without actuators

Notes

Actuators must be ordered separately.
see page 4-19

Actuator / Ordering data

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**
Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

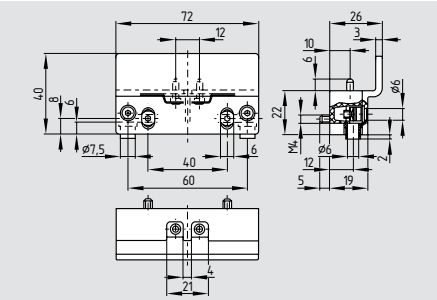
AZ 05

- Thermoplastic enclosure
- Protection of contacts and terminals against accidental access with additional partition
- 2 standard actuators
- Insulation plate as actuator
- Contact pin inside switch
- 1 actuating plane
- Removable transparent cover, inseparable
- Test assessment from TÜV
- Slotted holes
- Cable entries with cable protectors
- 1 cable entry per terminal
- Self-cleaning contacts
- M4 fixing screws, captive
- Additional insulation plate to be fitted between the mounting surface and the door contact available
- Actuator with proper flange for sheet-steel mounting, ordering suffix-1684
- Wiring dimensions compatible with AZ 05x

Technical data

Standards:	DIN VDE 0660-200; TRA; EN 81
Test certificate:	test certificate from TÜV; to EN 81; cULus (SPEZ. 4217)
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Cover:	transparent or self-extinguishing thermoplastic
Actuator:	Brass with silver coating
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contact
Termination:	M4 hexagonal screws, captive
Actuating force at 5 mm travel:	approx. 1.6 N
U_i:	500 V
I_{th}:	4 A
Utilisation category:	AC-15; DC-13
I_e/U_e:	2 A / 230 VAC 1 A / 200 VDC
Ambient temperature:	– 15 °C … + 70 °C
Mechanical life:	>1 million operations
Relative atmospheric humidity:	≤ 95 %, non-condensing

Technical drawings



Approvals

cULus TÜV CE

Ordering data

AZ 05 K①

No.	Replace	Description
①		without cable protector
	T	with cable protector

Notes

Actuators must be ordered separately.
see page 4-19

Actuator	**AZ 05 B**
Actuator	**AZ 05 B-1684**
Insulation plate	**BZ 50090-13**

Accessories

The connecting screws can be sealed with plugs
2 plugs per switch **1072279**

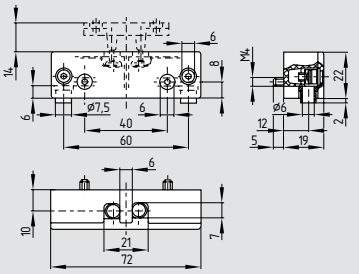
AZ 06

- Thermoplastic enclosure
- All default actuators can be used
- Contact pin in actuator jumper
- 1 actuating plane
- Removable transparent cover, inseparable
- Protection class IP 20
- Test assessment from TÜV
- Circular mounting holes
- 1 cable entry with cable protectors
- 1 cable entry per terminal
- Self-cleaning contacts
- M4 fixing screws, captive
- A special actuator is available for hook bar monitoring, part number AZ 06 B-1284
- Wiring dimensions compatible with AZ 06x

Technical data

Standards:	DIN VDE 0660-200; TRA; EN 81
Test certificate:	test assessment from TÜV; to EN 81 cULus
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Cover:	transparent thermoplastic
Actuator:	brass with silver coating in thermoplastic material
Protection class:	IP 20 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contact
Termination:	M4 hexagonal screws, captive
Actuating force at 5 mm travel	approx. 1.6 N, 7 mm total travel
U_i:	500 V
I_{th}:	4 A
Utilisation category:	AC-15; DC-13
I_e/U_e:	2 A / 230 VAC, 2 A / 200 VDC
Short-time current resistance:	2 A gG
Ambient temperature:	– 15 °C … + 70 °C
Mechanical life:	>1 million operations
Relative atmospheric humidity:	≤ 95 %, non-condensing

Technical drawings



Approvals

cULus TÜV CE

Ordering data

AZ 06KT	Door contact without actuators

Notes

Actuators must be ordered separately.
see page 4-19

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**
Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

Accessories

The connecting screws can be sealed with plugs
2 plugs per switch **1072279**

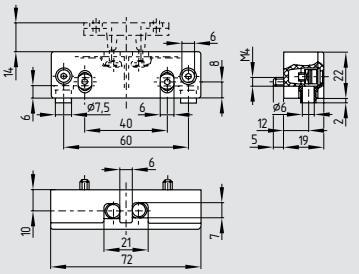
AZ 07

- Thermoplastic enclosure
- Contact pins in actuator jumper
- 1 actuating plane
- Removable transparent cover, inseparable
- Protection class IP 20
- Test assessment from TÜV
- Slotted holes
- 1 cable entry with cable protectors
- 1 cable entry per terminal
- Self-cleaning contacts
- M4 fixing screws, captive
- A special actuator is available for hook bar monitoring, part number AZ 06 B-1284
- Wiring dimensions compatible with AZ 06x

Technical data

Standards:	DIN VDE 0660-200; TRA; EN 81
Test certificate:	test assessment from TÜV in accordance with TRA and EN 81; cULus
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Cover:	transparent thermoplastic
Actuator:	silver-plated brass in thermoplastic material
Protection class:	IP 20 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contact
Termination:	M4 hexagonal screws, captive
Actuating force at 5 mm travel	approx. 1.6 N, 7 mm total travel
U_i:	500 V
I_{th}:	4 A
Utilisation category:	AC-15; DC-13
I_e/U_e:	2 A / 230 VAC, 2 A / 200 VDC
Short-time current resistance:	2 A gG
Ambient temperature:	– 15 °C … + 70 °C
Mechanical life:	>1 million operations
Relative atmospheric humidity:	≤ 95 %, non-condensing

Technical drawings



Approvals

cULus TÜV CE

Ordering data

AZ 07 K①

No.	Replace	Description
①		without cable protector
	T	with cable protector

Notes

Actuators must be ordered separately
see page 4-19

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**
Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

Accessories

The connecting screws can be sealed with plugs
2 plugs per switch **1072279**

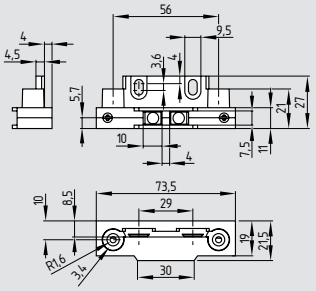
AZ 08

- Thermoplastic enclosure
- Protection of contacts and terminals against accidental access with additional partition
- Contact pins in actuator jumper
- 1 Actuating plane
- Cover and enclosure are inseparable
- Protection class IP 20
- Test assessment from TÜV
- Slotted holes
- 1 cable entry with cable gland
- 1 cable entry per terminal
- Self-cleaning contacts

Technical data

Standards:	DIN VDE 0660-200; TRA; EN 81
Test certificate:	test assessment from TÜV in accordance with EN 81-1/2
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Actuator:	brass with silver coating in thermoplastic material
Protection class:	IP 20
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contact
Termination:	M3 screw terminals
Cable section:	single-wired, min. 0.75 mm^2 max. 2.5 mm^2
Actuating force at 5 mm travel:	approx. 2 N
U_i:	500 V
I_{the}:	4 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	2 A/230 VAC 2 A/200 VDC
Short-time current resistance:	6 A gG #
Ambient temperature:	– 30 °C … + 80 °C
Mechanical life:	> 1 million operations

Technical drawings



Approvals

TÜV CE

Ordering data

AZ 08 K	Door contact without actuators

Notes

Actuators must be ordered separately.
see page 4-19

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**
Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

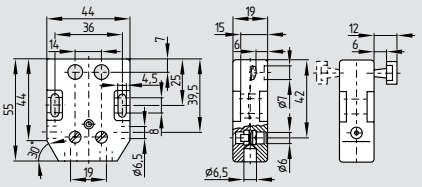
AZ 13

- Thermoplastic enclosure
- Contact pins in actuator jumper
- 2 actuating planes
- Cover and enclosure are inseparable
- Protection class IP 20
- Slotted holes
- 1 cable entry with cable gland
- 1 cable entry per terminal
- Self-cleaning contacts
- Versions available for cover- (D) or bottom-side (U) actuation
- Cable entry from side and bottom
- Maximum actuating travel of 7 mm

Technical data

Standards:	DIN VDE 0660-200; TRA; EN 81
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Cover:	transparent or self-extinguishing thermoplastic
Actuator:	brass with silver coating in thermoplastic material
Protection class:	IP 20 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contacts
Termination:	M4 screw terminals with self-lifting clamps
Actuating force at 5 mm travel:	approx. 1.6 N
U_i:	250 V
I_{th}:	4 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	2 A / 230 VAC, 2 A / 200 VDC
Positive break force:	10 N per NC contact
Ambient temperature:	– 30 °C … + 80 °C
Mechanical life:	>1 million operations

Technical drawings



Approvals

CE

Ordering data

AZ 13 K①

No.	Replace	Description
①	U	Bottom-side actuation
	D	Cover-side actuation

Notes

Actuators must be ordered separately
see page 4-19

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**
Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

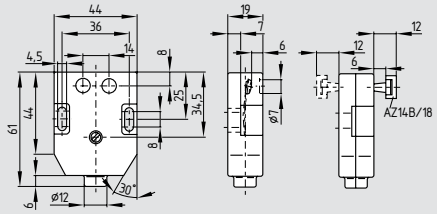
AZ 14-1

- Thermoplastic enclosure
- All default actuators can be used
- Contact pins in actuator jumper
- 2 actuating planes
- Cover and enclosure are inseparable
- Protection class IP 20
- Test assessment from TÜV
- Slotted holes
- Shielded cable with cable protectors
- 1 cable entry per terminal
- Self-cleaning contacts
- Versions available for cover- (D) and bottom-side (U) actuation
- Maximum travel 7 mm

Technical data

Standards:	EN 81
Test certificate:	test assessment from TÜV; TRA and EN 81; cULus
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Cover:	transparent or self-extinguishing thermoplastic
Actuator:	brass with silver coating in thermoplastic material
Protection class:	IP 20 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contacts
Termination:	M4 screw terminals with self-lifting clamps
Actuating force at 5 mm travel:	2,2 N ± 20 %
U_i:	500 V
I_{th}:	6 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	2 A / 230 VAC, 2 A / 200 VDC
Positive break force:	10 N per NC contact
Ambient temperature:	– 30 °C … + 80 °C
Mechanical life:	>1 million operations

Technical drawings



Approvals

TÜV CE

Ordering data

AZ 14-1 K①②

No.	Replace	Description
①	U	Bottom-side actuation
	D	Cover-side actuation
②		without slotted holes
	L	with slotted holes

Notes

Actuators must be ordered separately
see page 4-19

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**
Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

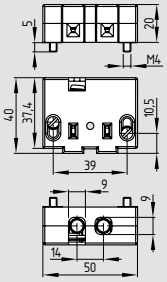
AZ 19

- Thermoplastic enclosure
- All default actuators can be used
- Contact pins in actuator jumper
- 1 actuating plane
- Cover and enclosure are inseparable
- Protection class IP 10
- Slotted holes
- 1 cable entry with cable gland
- 1 cable entry per terminal
- Self-cleaning contacts
- M4 fixing screws, captive
- Terminals with cage clamps
- Switch with double break

Technical data

Standards:	EN 81
Test certificate:	test assessment from TÜV; UL/CSA
Enclosure:	Ultramid, self-extinguishing, glass-fibre reinforced
Cover:	Ultramid, self-extinguishing, glass-fibre reinforced
Actuator:	brass with silver coating, Noryl, self-extinguishing
Protection class:	IP 10 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	Cu-rivets with silver coating
Switching element:	1 NC contact
Switching system:	self-cleaning contact
Termination:	terminals with cage clamps
Actuating force at 8 mm travel:	2 N ± 20 %, 8 mm total travel
U_i:	500 V
I_{th}:	4 A
I_e/U_e:	2 A / 230 VAC, 2 A / 200 VDC
Positive break force:	10N per NC contact
Ambient temperature:	– 30 °C … + 70 °C
Mechanical life:	>1 million operations

Technical drawings



Approvals

CE

Ordering data

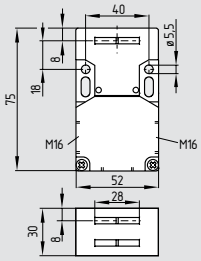
AZ 19K	Door contact without actuators

Notes

Actuators must be ordered separately
see page 4-19

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**
Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

AZ 15-zo



- Thermoplastic enclosure
- Protection class IP 67
- Double insulated ⧈
- 1 actuator
- Contact pins in actuator jumper
- 4 actuating planes
- Cover and enclosure are separable
- Slotted holes
- 3 cable entries
- Large wiring compartment
- Slotted holes for adjustment, circular holes for location
- Special versions with laterally open actuation protection for small radii available

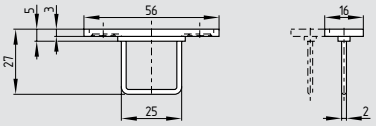
Approvals

cULus under preparation CE

Technical data

Standards:	IEC/EN 60947-5-1/ DIN VDE 0660-200; EN 1088; BG-GS-ET-15; DIN EN 81
Test certificate:	test assessment from TÜV in accordance with TRA and EN 81
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Actuator:	stainless steel 1.4301
Protection class:	IP 67 to IEC/EN 60529/ DIN VDE 0470-1
Contact material:	silver
Switching element:	1 NC contact, galvanically separated contact jumpers
Switching system:	⊖ IEC 60947-5-1; Ⓔ BG-GS-ET-15; slow action; positive break NC contact
Termination:	screw terminals, Cable section max. 2.5 mm² (including conductor ferrules)
U_{imp}:	6 kV
U_i:	500 V
I_{th}:	10 A
Utilisation category:	AC-15 / DC-13
I_e/U_e:	2 A / 230 VAC 0,5 A / 200 VDC
Short-time current resistance:	6 A gG D-fuse
Positive break travel:	6,5 mm
Positive break force:	3,5 N
Ambient temperature:	– 30 °C … + 80 °C
Mechanical life:	>1 million operations

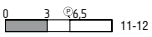
System components



Included in delivery

Contact variants

1 NC contact



Ordering data

AZ 15zo-2036-3 Door contact with actuators

Notes

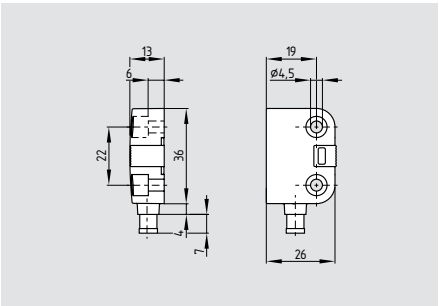
Alignment kit to simplify fitting, part number:
Alignment AZ 15/16

Notes

Inserted position of actuator = 0 in switch travel diagram.
The actuator is included in delivery.

Non-contact door contact

BNS 260



- Thermoplastic enclosure
- Rectangular, flat, compact design
- Protection class IP 67
- Enclosure with mounting holes
- Suitable for concealed mounting
- Insensitive to axial misalignment
- Insensitive to soiling
- Lateral actuation
- Contact variants: NC contact, NO contact
- Indication of the switching conditions by LED
- Safety-monitoring module AES 9107 required
- Actuating magnet BPS 260 required
- Safety class 3 for serial connection
- Ideal for fireman lifts
- Approved for lift applications
- Other solutions on request

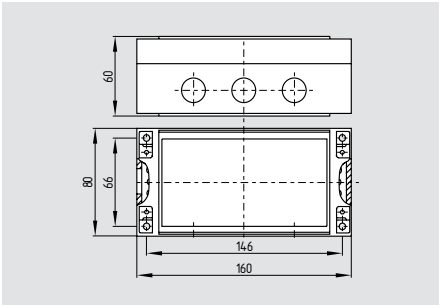
Approvals

cULus under preparation CE

Notice

- AES zur Absicherung einer Schutzeinrich-tAES to safeguard a safety guard up to control category 3 to EN 954-1
- Monitoring of a safety guard using a BNS 260 magnetic safety sensor.

AES 9107



- BG test certificate
- 1 enabling path
- Monitoring of up to approx. 20 pieces BNS 260-11z magnetic safety sensors
- Internal protection of the enabling path with fine fuse 2 A
- Enclosure: protection class IP 65
- Maximum resistance of the monitoring circuit 50 Ω

Approvals

TÜV CE

Notice

If one or two external relays or contactors are used to switch the load, the system can only be classified in control category 3 to EN 954-1, if exclusion of the fault “Failure of the external contactors” can be substantiated and documented, e.g. by using reliable down-rated contactors. A second contactor leads to an increase of the level of security by redundant switching to switch off the load.

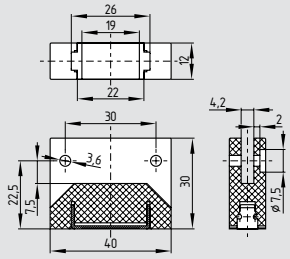
Notice

BNS 260 and AES 9107 are non-contact substitutions for door contacts. They are suitable for inaccurate adjustment and fireman lifts because of their protection class IP 67.

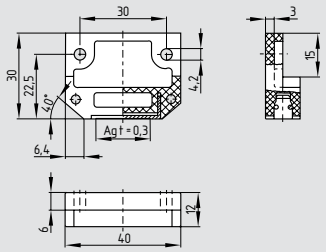
Further information and ordering details can be found on page 2-30.

Actuators for all applications

Actuators for AZ 05x, 05

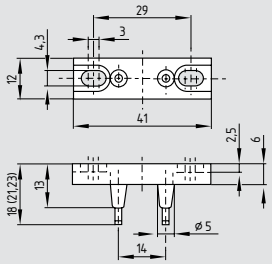


AZ 05 B (Standard)

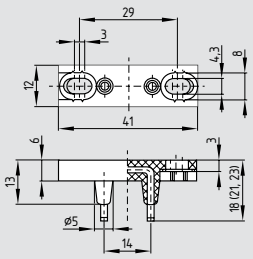


AZ 05 B-1684

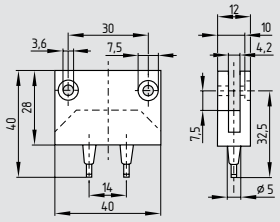
Actuators for AZ 06x, 06, 07, 08, 13, 14-1, 19



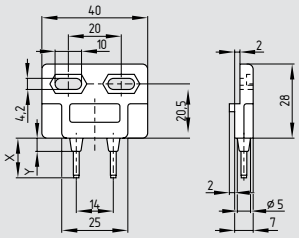
AZ 06-13 B/18, 21, 23



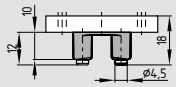
AZ 07-14 B/18, 21, 23



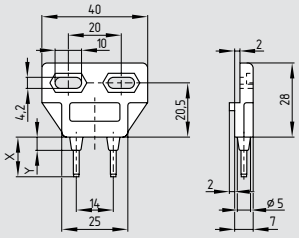
AZ 06 B-1284



Spez. 2006-2, 2006-3



Spez. 1949-1 with alignment tool



Spez. 2006, 2006-1

Ordering data

Actuator	**AZ 05 B**
Actuator	**AZ 05 B-1684**

Ordering data

Actuator, length 18 mm	**AZ 06-13 B/18**
Actuator, length 21 mm	**AZ 06-13 B/21**
Actuator, length 23 mm	**AZ 06-13 B/23**
Actuator for hook bars	**AZ 06 B-1284**

Ordering data

Actuator, length 18 mm	**AZ 07-14 B/18**
Actuator, length 21 mm	**AZ 07-14 B/21**
Actuator, length 23 mm	**AZ 07-14 B/23**
Length X=12 mm, Y=5 mm	**Spez 2006**
Length X=15 mm, Y=5 mm	**Spez 2006-1**
Length X=12 mm, Y=7 mm	**Spez 2006-2**
Length X=15 mm, Y=10 mm	**Spez 2006-3**

Door contacts with positive break

	AZ 051 / AZ 052 / AZ 053	AZ 061 / AZ 062 / AZ 063	AZ 05
Standards	EN 81 CAN/CSA-B44.1/ ASME-A15.5	EN 81 CAN/CSA-B44.1/ ASME-A15.5	EN 81 DIN VDE 0660-200 TRA
Test certificate	test assessment from TÜV cULus, CCC	test assessment from TÜV UL/CSA, CCC	test assessment from TÜV cULus
Enclosure	Ultramid, self-extinguishing, glass-fibre reinforced	Ultramid, self-extinguishing, glass-fibre reinforced	glass-fibre reinforced thermoplastic, self-extinguishing
Cover	Polycarbonat, self-extinguishing, transparent	Polycarbonat, self-extinguishing, transparent	glass-fibre reinforced thermoplastic, self-extinguishing
Actuator	Silver-plated brass, Ultramide, self-extinguishing	Brass with silver coating in thermoplastic material	Brass with silver coating in thermoplastic material
Protection class	IP 00	IP 20	IP 00
Contact material	Cu-rivets with silver coating	Cu-rivets with silver coating	Cu-rivets with silver coating
Switching elements	1 NC contact	1 NC contact	1 NC contact
Switching system	Butt contact with contact cleaning by rubbing	Butt contact with contact cleaning by rubbing	Butt contact with contact cleaning by rubbing
Termination	M4 terminal screws, DIN 7984, with self-lifting clamps	M4 screw terminals, DIN 7984, with self-lifting clamps	M4 hexagonal screws with self-lif- ting clamps
Actuating force at 5 mm travel	1.6 N ± 20 %, 5 mm total travel	1.6 N ± 20 %, 7 mm total travel	approx. 1.6 N
U_{imp}	–	–	–
U_i	500 V	500 V	500 V
I_{the}	4 A	4 A	4 A
Utilisation category	AC-15 DC-13	AC-15, DC-13	AC-15 DC-13
I_e/U_e	2 A / 230 VAC 1 A / 200 VDC	2 A / 230 VAC 2 A / 200 VDC	2 A / 230 VAC 1 A / 200 VDC
Short-time current resistance	2 A gG	2 A gG	–
Positive break travel	–	–	–
Positive break force	–	–	–
Ambient temperature	– 30 °C ... + 70 °C	– 30 °C ... + 70 °C	– 15 °C ... + 70 °C
Mechanical life	>1 million operations	>10 million operations	>1 million operations
Relative atmospheric humidity	≤ 95 %, non-condensing	≤ 95 %, non-condensing	≤ 95 %, non-condensing

AZ 06	AZ 07	AZ 08	
EN 81 DIN VDE 0660-200 TRA	EN 81 DIN VDE 0660-200 TRA	EN 81	**Standards**
test assessment from TÜV cULus	test assessment from TÜV UL/CSA	test assessment from TÜV	**Test certificate**
glass-fibre reinforced thermoplastic, self-extinguishing	glass-fibre reinforced thermoplastic, self-extinguishing	Latamid	**Enclosure**
transparent thermoplastic material	transparent thermoplastic material	–	**Cover**
Brass with silver coating in thermoplastic material	Brass with silver coating in thermoplastic material	Brass with silver coating in thermoplastic material	**Actuator**
IP 20	IP 20	IP 20	**Protection class**
Cu-rivets with silver coating	Cu-rivets with silver coating	Cu-rivets with silver coating	**Contact material**
1 NC contact	1 NC contact	1 NC contact	**Switching elements**
Butt contact with contact cleaning by rubbing	Butt contact with contact cleaning by rubbing	Butt contact with contact cleaning by rubbing	**Switching system**
M4 hexagonal screw terminals with self-lifting clamps	M4 hexagonal screw terminals with self-lifting clamps	M3 screw terminals	**Termination**
approx. 1.6 N 7 mm total travel	approx. 1.6 N 7 mm total travel	2 N ± 20 %, 8 mm total travel	**Actuating force at 5 mm travel**
–	–	–	**U_{imp}**
500 V	500 V	500 V	**U_i**
4 A	4 A	4 A	**I_{the}**
AC-15, DC-13	AC-15, DC-13	AC-15, DC-13	**Utilisation category**
2 A / 230 VAC, 2 A / 200 VDC	2 A / 230 VAC, 2 A / 200 VDC	2 A / 230 VAC, 2 A / 200 VDC	**I_e/U_e**
2 A gG	2 A gG	–	**Short-time current resistance**
–	–	–	**Positive break travel**
–	–	–	**Positive break force**
– 15 °C ... + 70 °C	– 15 °C ... + 70 °C	– 30 °C ... + 80 °C	**Ambient temperature**
>1 million operations	>1 million operations	>1 million operations	**Mechanical life**
≤ 95 %, non-condensing	≤ 95 %, non-condensing	–	**Relative atmospheric humidity**

	AZ 13	AZ 14-1	AZ 19
Standards	EN 81	EN 81	EN 81
Test certificate	–	test assessment from TÜV	–
Enclosure	glass-fibre reinforced thermoplastic, self-extinguishing	glass-fibre reinforced thermoplastic, self-extinguishing	Ultramid, self-extinguishing, glass-fibre reinforced
Cover	thermoplastic, self-extinguishing	thermoplastic, self-extinguishing	Ultramid, self-extinguishing, glass-fibre reinforced
Actuator	Brass with silver coating in thermoplastic material	Brass with silver coating in thermo-plastic material	Brass with silver coating, Noryl, self-extinguishing
Protection class	IP 20	IP 20	IP 10
Contact material	Cu-rivets with silver coating	Cu-rivets with silver coating	silver
Switching elements	1 NC contact	1 NC contact	1 NC contact
Switching system	Butt contact with contact cleaning by rubbing	Butt contact with contact cleaning by rubbing	Butt contact with contact cleaning by rubbing
Termination	M4 screw terminals with self-lifting clamps	M4 screw terminals with self-lifting clamps	Terminals with cage clamps
Actuating force at 5 mm travel	approx. 1.6 N	approx. 2.2 N ± 20 %	2 N ± 20 %, 8 mm total travel
U_{imp}	–	–	4 kV
U_i	500 V	500 V	500 V
I_{the}	4 A	6 A	4 A
Utilisation category	AC-15, DC-13	AC-15, DC-13	AC-15, DC-13
I_e/U_e	2 A / 230 VAC, 2 A / 200 VDC	6 A / 380 VAC 2 A / 220 VDC	2 A / 230 VAC, 2 A / 200 VDC
Short-time current resistance	–	–	2 A gG D-fuse
Positive break travel	–	–	6,5 mm
Positive break force	10N	10N	10N
Ambient temperature	– 30 °C … + 70 °C	– 30 °C … + 70 °C	– 30 °C … + 70 °C
Mechanical life	>1 million operations	>1 million operations	>1 million operations
Relative atmospheric humidity	–	–	–

	AZ 15 zo
Standards	EN 81 IEC 60947-5-1/EN 60947-5-1/DIN EN 1088 BG-GS-ET-15
Test certificate	test assessment from TÜV cULus under preparation
Enclosure	glass-fibre reinforced thermoplastic, self-extinguishing
Cover	glass-fibre reinforced thermoplastic, self-extinguishing
Actuator	stainless steel 1.4301
Protection class	IP 67 to IEC 60529/EN 60529/DIN VDE 0470-1
Contact material	silver
Switching elements	1 NC contact, galvanically separated contact bridges
Switching system	⊖ IEC 60947-5-1 B BG-GS-ET-15 Slow action positive break NC contact
Termination	Screw terminals, cable section max. 2.5 mm2 (including conductor ferrules)
Actuating force at 5 mm travel	3,5 N
U_{imp}	6 kV
U_i	500 V
I_{the}	10 A
Utilisation category	AC-15 / DC 13
I_e/U_e	2 A / 230 VAC 0,5 A / 200 VDC
Short-time current resistance	6 A gG D-fuse
Positive break travel	6,5 mm
Positive break force	3,5N
Ambient temperature	– 30 °C … + 80 °C
Mechanical life	>1 million operations
Relative atmospheric humidity	–

BNS 260	
IEC 60947-5-3, BG-GS-ET14	**Standards**
rectangular with rounded corners	**Design**
glass-fibre reinforced thermoplastic	**Enclosure**
IP 67	**Protection class**
Boflex 4 x 0,25 mm^2 cable length 1 m; Connector M8 x 1, 4-pole	**Termination**
LED	**Switch status indicator**
24 VDC, 75 VDC	**Switching voltage**
max. 400 mA	**Switching current**
max. 10 VA	**Switching capacity**
–	**Dielectric strength**
5 Hz	**Switching frequency**
– 25 °C … + 70 °C	**Ambient temperature**
30 g / 11 ms	**Resistance to shocks**
10 … 55 Hz	**Resistance to vibrations**
BPS 260-1, BPS 260-2	**Actuating magnet**
5 mm	**max. Switching distance**

Further data, see page 2-38

Notes