

## Ex lift switchgear



SAFE SWITCHGEAR FOR COMPLEX  
AND CRITICAL APPLICATIONS

// Explosion protection



#### 4 The company

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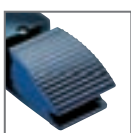
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STEUTE IN LÖHNE, GERMANY  
SAFE SWITCHGEAR FOR COMPLEX AND CRITICAL APPLICATIONS



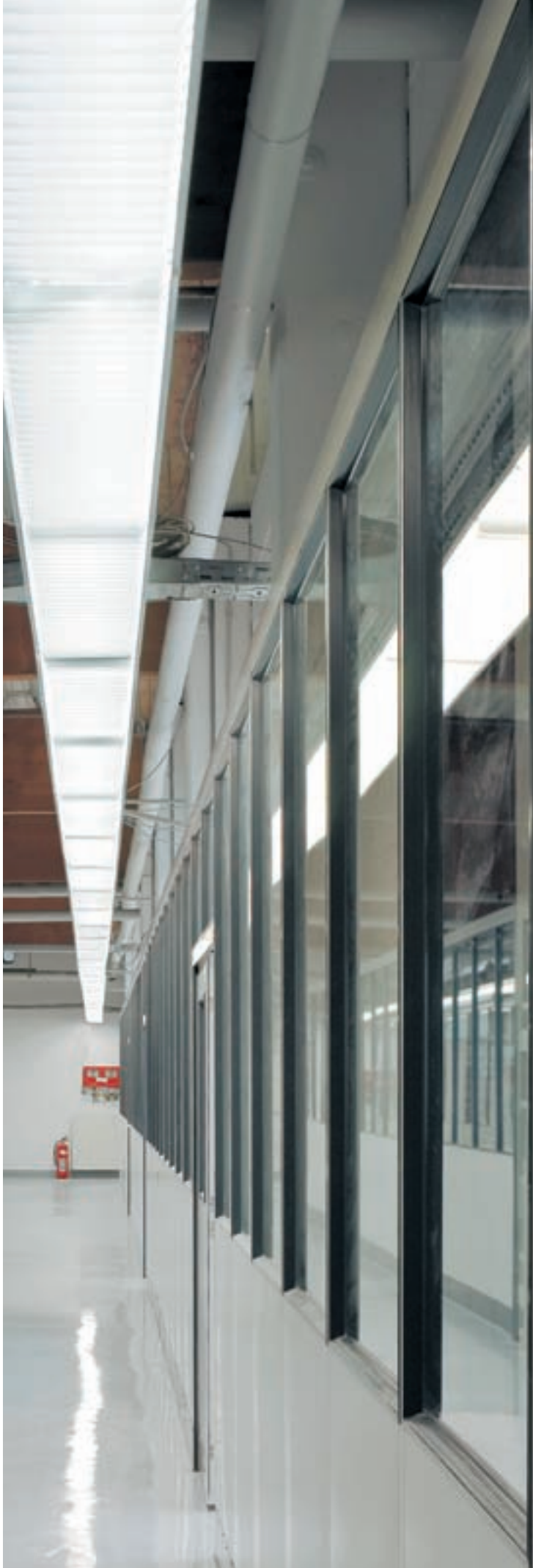


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Löhne in Westphalia, Germany. Nestling between the »Wiehengebirge« and the »Teutoburger Wald«. This is the location of steute Schaltgeräte GmbH & Co.KG, where switchgear is designed and produced for explosion protection, medical technology and control technology.

Historians know our region as the area where the battle of Varus took place in the year 9 AD. About 1700 years later, the Treaty of Westphalia marked the end of the 30-Years War. Gourmets adore the Westphalian sausage, walkers its beautiful scenery. In brief: it is a good place to live. It is also a good place to work. The industrial culture of Westphalia is mostly characterised by small to medium-sized companies; the region is also the home of many hidden champions and global market leaders, expert machine and system manufacturers, as well as electronic and connecting technology specialists.

This means that we have many important suppliers, customers and partners practically »on our doorstep«. And even so, our employees travel a great deal throughout the world. This is because renowned companies in all industrial markets use switchgear from steute when they need to focus on high quality and availability. And when they appreciate cooperating with suppliers who can flexibly adapt to their requests.



## SWITCHGEAR FROM STEUTE MEETS THE HIGHEST QUALITY REQUIREMENTS



Today, the company offers a homogenous product range, drawing on its wide know-how and characterised by a high degree of technological synergy.

180 employees attentively develop and manufacture electrical and electronic components for high-standard and explosive safety applications. This range of applications complies with established international directives, laws, standards and regulations. In this context, key significance is attributed to a close cooperation with technical certification institutions.

steute develops and produces safety components which have to meet high standards of safety and the high quality requirements of the following three QM systems:

- DIN EN ISO 9001: 2000
- DIN EN ISO 13485: 2003
- Certificate of Quality Assurance acknowledgment in accordance with the 94/9/EC (ATEX) Directive

On the following pages you will find our wide range of EX lift switchgear, each of which can be modified in accordance with customer specifications.

Talk to us. Let us help you find what you are looking for. The steute team.



## Ex door contacts with positive break

### Thermoplastic enclosure

// EEx 14 AZ range

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### Metal enclosure

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as of page 22



EEx 95 AZ



01-08-0024

# Ex door contacts with positive break

## Range of application

Ex door contacts with positive break are suitable for monitoring the closed condition of lift cabin doors to ensure the required operational safety. They monitor the closed condition and the locking of lift cabin doors. They can also be used for modernisation.

## Design and mode of operation

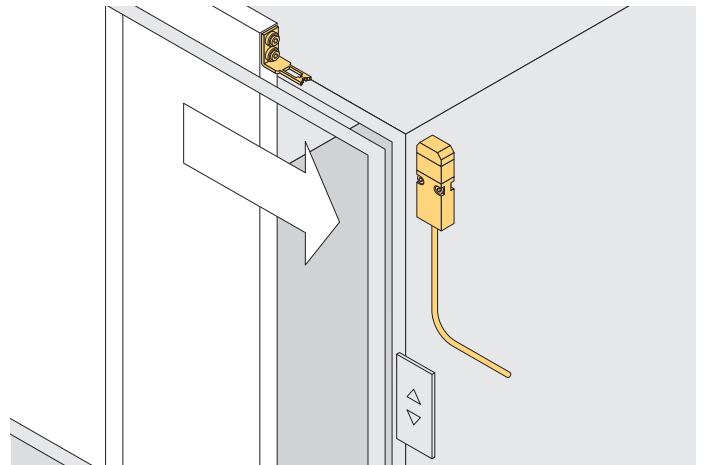
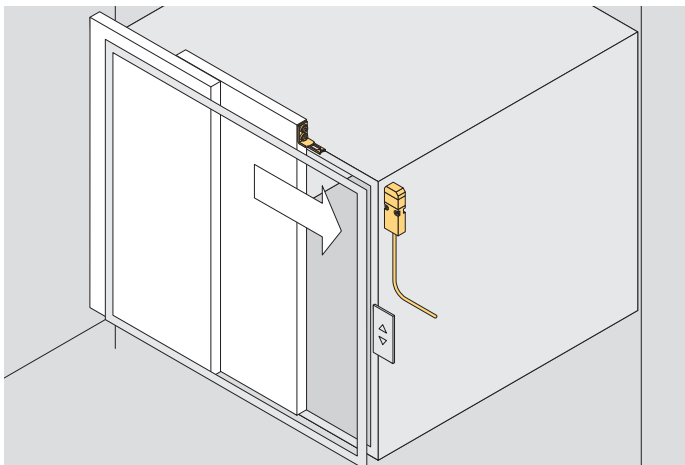
On the Ex door contacts with positive break, the switching element is not physically connected to the actuator but functionally brought together or separated by switching. When the lift cabin door is opened, the actuator is separated from the base unit. During this process, the NC contacts of the safety switch are positively opened and the NO contacts closed. A wide range of coded actuators, also suitable for small radii, is available for the Ex door contacts with positive break.

The protection class of all Ex door contacts with positive break is IP 65/67. The safety switches can be fitted in any desired mounting position.

The Ex door contacts with positive break presented in this section have the CE marking as per Directive ATEX 94/9/EC from the certified Testing Laboratory EXAM, identification number 0158.

## Application

On a lift cabin door in an open condition



# Ex door contacts with positive break

## // EEx 14 AZ range

### Features/Options

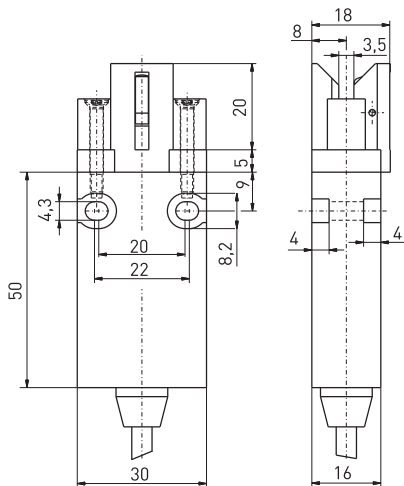
- Thermoplastic enclosure
- Double insulation ☐
- Slow action ⊖, 1 NC contact
- Version with pre-wired cable output on side available
- Pre-wired cable, cable length 1 metre
- Version for equipment category 3D, Dust-Ex zone 22 available

// EEX 14 AZ



### Technical data

<b>Standards:</b>	IEC/EN 60947-5-1; 95/16/EG, EN 81-1; EN 81-2; EN 1088; EN 50014; EN 50018; EN 50281-1-1
<b>Enclosure</b>	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing UL 94-V0 stainless steel 1.4301
<b>Actuator</b>	-
<b>Switch insert</b>	-
<b>Protection class</b>	IP 65 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break ⊖
<b>Switching elements</b>	1 NC contact
<b>Termination</b>	pre-wired cable H05VV-F
<b>Cable section</b>	2 x 0.75 mm <sup>2</sup>
<b>Cable length</b>	1.5 m
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	3 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	3 A/250 VAC; 0.2 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	3 A gL/gG D-fuse
<b>Positive break travel</b>	3.5 mm
<b>Positive break force</b>	-
<b>Actuating force</b>	3.5 N
<b>Ambient temperature</b>	-20 °C ... +65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Ex-marking</b>	⊕ II 2G EEx d IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	PTB 03 ATEX 1070 X



### Contact variants: Switch travel/contacts

	Slow action
1 NC contact	EEx 14 AZ 10
	0 2 3,5 BN-BU

### Ordering details

EEx 14 AZ	10	-s	1m	-3D	
					Equipment category 3D, Dust-Ex zone 22
					Cable length 1 m, (2 m, 5 m, 10 m)
					Pre-wired cable on side
					1 NC contact
					Separate actuator AZ
					Range
					Ex-certified device

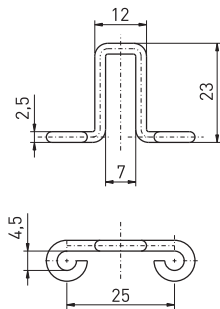
## Ex door contacts with positive break

### // EEx 14 AZ range, actuator

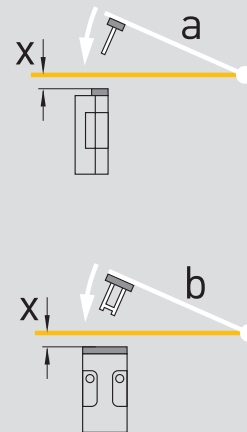
#### Features/Options

- Stainless steel actuator
- Actuating radius on hinged lift cabin/shaft doors
  - a = 100 mm and b = 100 mm
- Axial offset x = 2.5 mm

### // Straight actuator 14 AZ-B1



### // Actuating radius



- The axis of the hinge should be x mm above the top of the edge of the safety switch and in the same plane.
- a Actuating radius at 90° to the plane of the actuator
- b Actuating radius in line with the plane of the actuator
- x Axial offset

# Ex door contacts with positive break

## // EEx ST 14 range

### Features/Options

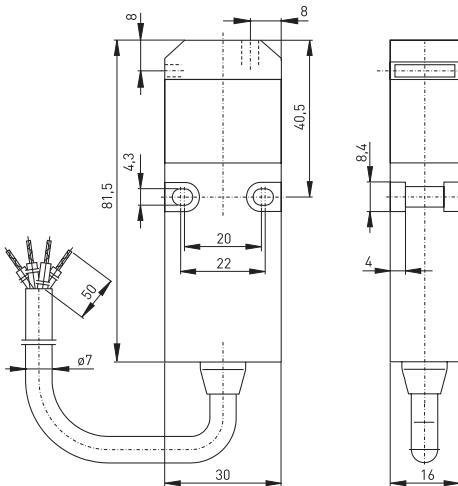
- Thermoplastic enclosure
- Double insulation ☐
- Slow action ⊖, double-break changeover contact
- Slow action with overlapping contacts available
- Version with pre-wired cable output on side available
- Pre-wired cable, cable length 1 metre
- Version for equipment category 3D, Dust-Ex zone 22 available

// EEX ST 14



### Technical data

<b>Standards:</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50281-1-1
<b>Enclosure</b>	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing UL 94-V0 stainless steel 1.4301
<b>Actuator</b>	-
<b>Switch insert</b>	-
<b>Protection class</b>	IP 65 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break ⊖
<b>Switching elements</b>	changeover contact Zb or 2 NC contacts, galvanically separated contact bridges
<b>Termination</b>	pre-wired cable H05VV-F 4 x 0.75 mm <sup>2</sup>
<b>Cable section</b>	4 x 0.75 mm <sup>2</sup>
<b>Cable length</b>	1, 2, 5 und 10 m
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 4 A/24 VDC; 0.25 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Positive break travel</b>	8 mm
<b>Positive break force</b>	-
<b>Ambient temperature</b>	-20 °C ... +65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Ex-marking</b>	⊕ II 2G EEx d IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	PTB 03 ATEX 1070 X



### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx ST 14 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx ST 14 UE</b> 
2 NC contacts	<b>EEx ST 14 2Ö</b> 

### Ordering details

<b>EEx ST 14 10/1S-s-1m-3D</b>	Equipment category 3D, Dust-Ex zone 22
	Cable length 1 m, (2 m, 5 m, 10 m)
	Pre-wired cable on side
	Contact type 1NC/1NO, (2Ö, UE)
	Range
	Safety door switch
	Ex-certified device

# Ex door contacts with positive break

## // EEx ST 14 range, actuator

### Features/Options

#### ST 14-B1

- Rubber mountings, damp vibrations on safety guards
- Actuating radius on hinged guards a = 140 mm and b = 1000 mm
- Axial offset x = 30 mm

#### ST 14-B3

- Particularly suitable for hinged guards
- Actuating radius on hinged guards a = 50 mm
- Axial offset x = 14 mm

### Features/Options

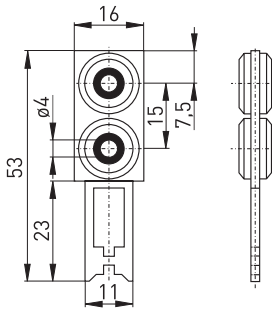
#### ST 14-B5

- Rubber mountings, damp vibrations on safety guards
- Particularly suitable for hinged guards
- Actuating radius on hinged guards a = 140 mm and b = 1000 mm
- Axial offset x = 15 mm

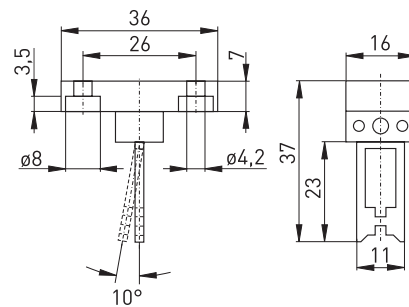
### Note

Inserted position of actuator = 0 in switch travel diagram. Actuators must be ordered separately.

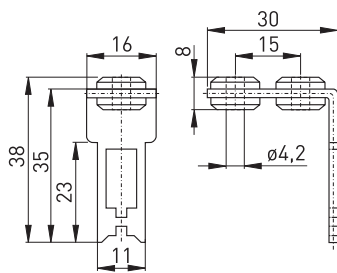
### // Straight actuator ST 14-B1



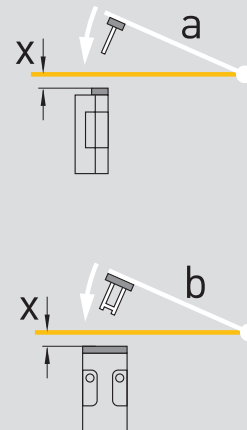
### // Flexible actuator ST 14-B3



### // Angled actuator ST 14-B5



### // Actuating radius



- The axis of the hinge should be x mm above the top of the edge of the safety switch and in the same plane.
- a Actuating radius at 90° to the plane of the actuator
- b Actuating radius in line with the plane of the actuator
- x Axial offset

# Ex door contacts with positive break

## // EEx 95 AZ range

### Features/Options

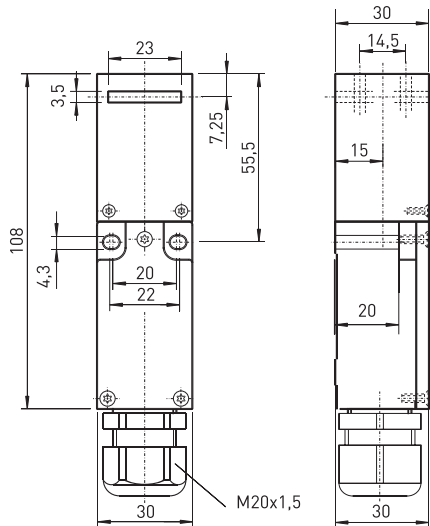
- Thermoplastic enclosure
- Double insulation ☐
- Slow action ⊖, double-break changeover contact
- Wiring compartment
- Mounting dimensions to EN 50 047
- Transversely slotted mounting holes
- Actuating head can be turned 4 x 90° in factory
- Version for equipment category 3D, Dust-Ex zone 22 available

// EEX 95 AZ



### Technical data

<b>Standards:</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50019; EN 50281-1-1
<b>Enclosure</b>	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing UL 94-V0 stainless steel 1.4301
<b>Actuator</b>	–
<b>Switch insert</b>	–
<b>Protection class</b>	IP 67 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break ⊖
<b>Switching elements</b>	changeover contact Zb or 2 NC contacts, galvanically separated contact bridges max. 1.5 mm <sup>2</sup> (incl. conductor ferrules)
<b>Cable section</b>	–
<b>Cable length</b>	–
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 0.25 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Positive break travel</b>	9 mm
<b>Positive break force</b>	–
<b>Ambient temperature</b>	–20 °C ... +60 °C
<b>Mechanical life</b>	> 1 million operations
<b>Ex-marking</b>	⊕ II 2G EEx de IIC T6, II 2D IP67 T80°C
<b>Approvals</b>	DMT 01 ATEX E 118



### Contact variants: Switch travel/contacts

	<b>Slow action</b>
1 NC/1 NO contact	<b>EEx 95 AZ 10/1S</b> 
2 NC contacts	<b>EEx 95 AZ 20</b> 

### Ordering details

<b>EEx 95 AZ 10/1S-LL-3D</b>	
Equipment category 3D, Dust-Ex zone 22	
Enclosure with longitudinally slotted mounting holes	
Contact type 1 NC/1 NO, (20)	
Separate actuator AZ	
Range	
Ex-certified device	

# Ex door contacts with positive break

## // EEx 95 AZ range, actuator

### Features/Options

#### 95 AZ-B1

- Actuating radius on hinged guards
  - a = 350 mm und b = 700 mm
- x = 11 mm

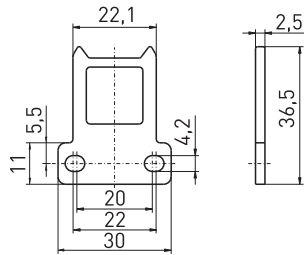
#### 95 AZ-B5

- Particularly suitable for hinged guards
- Actuating radius on hinged guards
  - a = 350 mm und b = 700 mm
- x = 13.5 mm

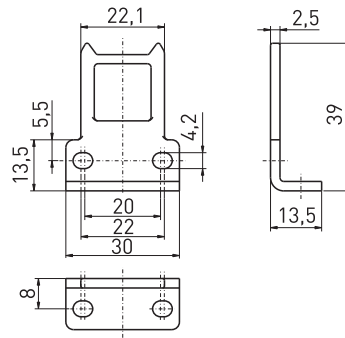
### Note

Inserted position of actuator = 0 in switch travel diagram.  
Actuators must be ordered separately.

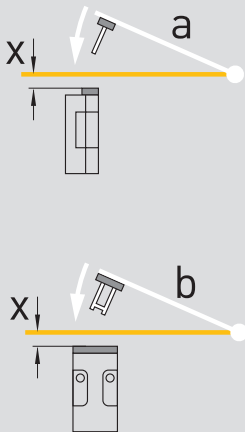
### // Straight actuator 95 AZ-B1



### // Angled actuator 95 AZ-B5



### // Actuating radius



- The axis of the hinge should be x mm above the top of the edge of the safety switch and in the same plane.
- a Actuating radius at 90° to the plane of the actuator
- b Actuating radius in line with the plane of the actuator
- x Axial offset



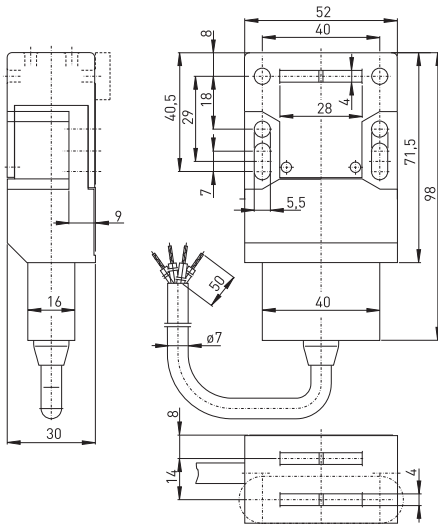
# Ex door contacts with positive break

## // EEx AZ 16 range

### Features/Options

- Thermoplastic enclosure
- Multiple coding of the actuator
- Slow action  $\ominus$ , double-break changeover contact
- Pre-wired cable, cable length 2 or 5 metres
- Version for equipment category 3D, Dust-Ex zone 22 available

## // EEX AZ 16



## Technical data

<b>Standards:</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50281-1-1
<b>Enclosure</b>	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing stainless steel 1.4301
<b>Actuator</b>	stainless steel 1.4301
<b>Switch insert</b>	EEx 13
<b>Protection class</b>	IP 65 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break $\ominus$
<b>Switching elements</b>	double-break changeover contact Zb, galvanically separated contact bridges
<b>Termination</b>	pre-wired cable H05VV-F 4 x 0.75 mm <sup>2</sup>
<b>Cable section</b>	4 x 0.75 mm <sup>2</sup>
<b>Cable length</b>	2 and 5 m
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 4 A/24 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Positive break travel</b>	9.5 mm
<b>Positive break force</b>	ca. 15 N
<b>Ambient temperature</b>	-20 °C ... +65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Ex-marking</b>	$\ominus$ II 2G EEx d IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	PTB 03 ATEX 1068 X, referring to the switch insert

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	EEx AZ 16 zvrk

### Ordering details

<b>EEx AZ 16 zvrk-2m-3D</b>	
	Equipment category 3D, Dust-Ex zone 22
	Cable length 2 m, (5 m)
	30 N holding force (spring return)
	Protection class IP 67
	Range
	Separate actuator AZ
	Ex-certified device

# Ex door contacts with positive break

## // EEx AZ 16 range, actuator

### Features/Options

#### AZ 15/16-B1

- Actuating radius on hinged guards  
a = 150 mm and b = 150 mm
- Axial offset x = 5 mm

#### AZ 15/16-B2

- Actuating radius on hinged guards  
b = 45 mm
- Axial offset x = 11 mm

#### AZ 15/16-B3

- Actuating radius on hinged guards  
a = 32 mm

### Features/Options

- Axial offset x = 11 mm

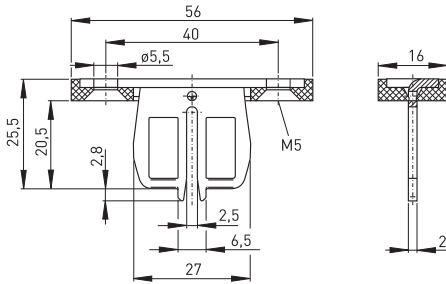
#### AZ 15/16-B6

- Actuating radius on hinged guards  
a = 38 mm und b = 25 mm
- Axial offset x = 11 mm

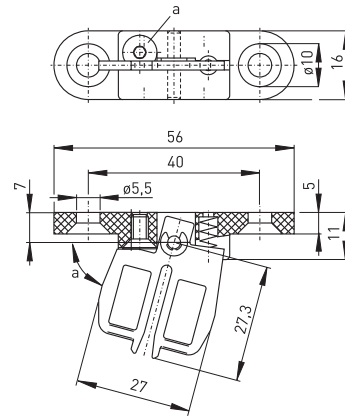
### Note

Inserted position of actuator = 0 in switch travel diagram.  
Actuators must be ordered separately.

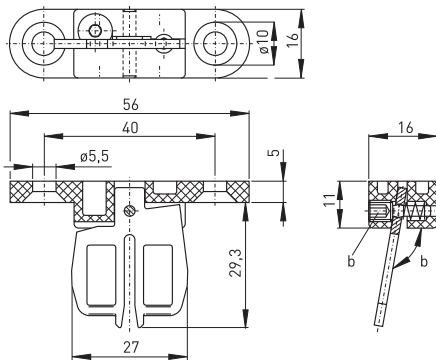
### // Straight actuator AZ 15/16-B1



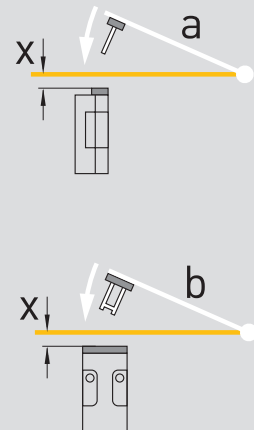
### // Flexible actuator AZ 15/16-B2



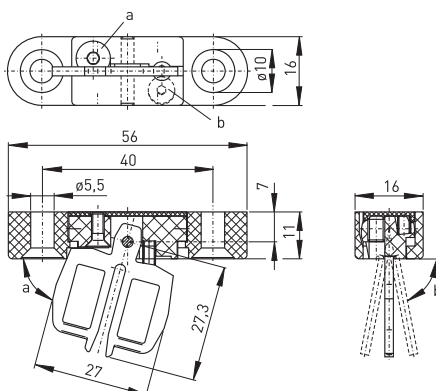
### // Angled actuator AZ 15/16-B3



### // Actuating radius



### // Angled actuator AZ 15/16-B6



- The axis of the hinge should be x mm above the top of the edge of the safety switch and in the same plane.
- a Actuating radius at 90° to the plane of the actuator
- b Actuating radius in line with the plane of the actuator
- x Axial offset

# Ex door contacts with positive break

## // EEx 335 AZ range

### Features/Options

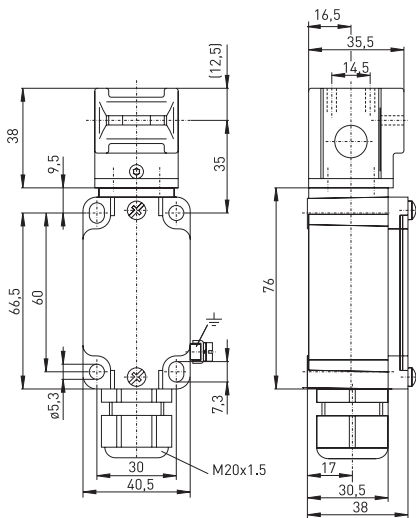
- Metal enclosure
- Mounting dimensions to EN 50 041
- Slow action  $\ominus$ , double-break changeover contact or 2 NC contacts available
- Wiring compartment
- Actuating head can be turned in 4 x 90° steps in factory
- Version for equipment category 3D, Dust-Ex zone 22 available

## // EEX 335 AZ



### Technical data

<b>Standards:</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 500190; EN 50281-1-1
<b>Enclosure</b>	zinc die-cast, enamel finish
<b>Actuator</b>	stainless steel 1.4301
<b>Switch insert</b>	Ex 95
<b>Protection class</b>	IP 65 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break $\ominus$
<b>Switching elements</b>	changeover contact Zb or 2 NC contacts, galvanically separated contact bridges
<b>Termination</b>	M3 screw terminals
<b>Cable section</b>	max. 1.5 mm <sup>2</sup> (incl. conductor ferrules)
<b>Cable length</b>	-
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 4 A/24 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Positive break travel</b>	7 mm
<b>Positive break force</b>	-
<b>Ambient temperature</b>	-20 °C ... +65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Ex-marking</b>	$\ominus$ II 2G EEx d IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	BVS 04 ATEX 126



### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	EEx 335 AZ 10/15 
2 NC contacts	EEx 335 AZ 20 

### Ordering details

<b>EEx 335 AZ 10/15-3D</b>	
	Equipment category 3D, Dust-Ex zone 22
	Contact type 1 NC/1 NO, (20)
	Separate actuator AZ
	Range
	Ex-certified device

# Ex door contacts with positive break

## // EEx 335 AZ range, actuator

### Features/Options

#### AZ 335/355-B1

- Actuating radius on hinged guards  
a = 700 mm and b = 900 mm
- Axial offset x = 52.7 mm

#### AZ 335/355-B1-2246

- Rubber mountings, damp vibrations on safety guards
- Actuating radius on hinged guards  
a = 700 mm and b = 900 mm
- Axial offset x = 52.7 mm

### Features/Options

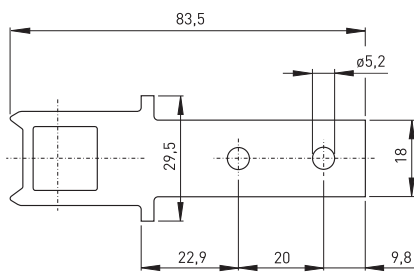
#### AZ 335/355-B5

- Particularly suitable for hinged guards
- Actuating radius on hinged guards  
a = 700 mm and b = 900 mm
- Axial offset x = 15.4 mm

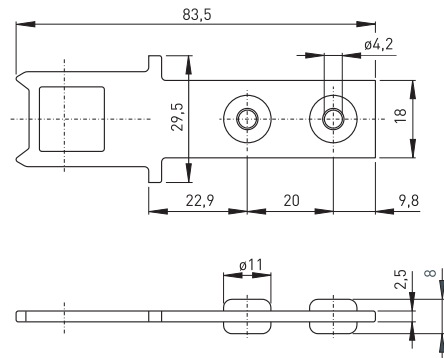
### Note

Inserted position of actuator = 0 in switch travel diagram.  
Actuators must be ordered separately.

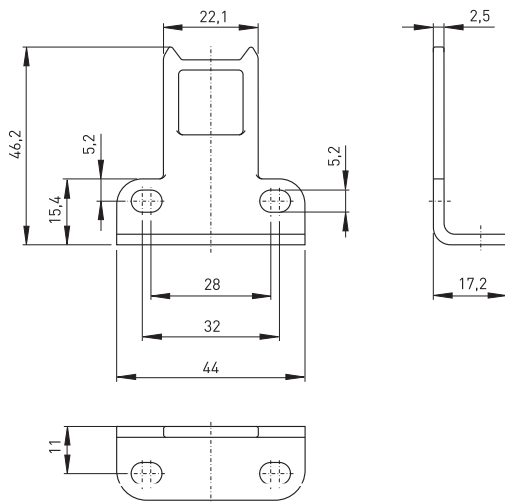
### // Straight actuator AZ 335/355-B1



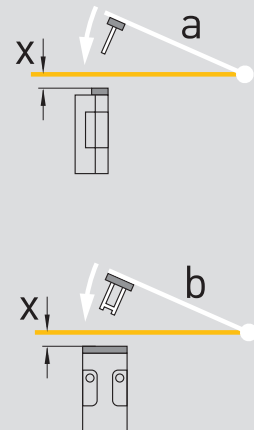
### // Straight actuator AZ 335/355-B1-2245



### // Angled actuator AZ 335/355-B5



### // Actuating radius



- The axis of the hinge should be x mm above the top of the edge of the safety switch and in the same plane.
- a Actuating radius at 90° to the plane of the actuator
- b Actuating radius in line with the plane of the actuator
- x Axial offset

# Ex door contacts with positive break

## // EEx ST 61 range

### Features/Options

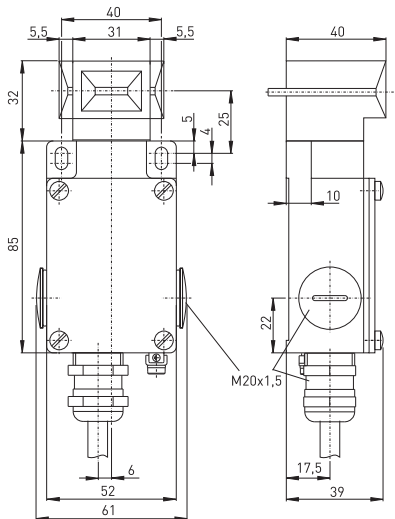
- Metal enclosure
- Double insulation ☐
- Slow action ⊖, double-break changeover contact
- Pre-wired cable, cable length 3 metres
- Long life
- High level of contact reliability with low voltage and currents

// EEX ST 61



### Technical data

<b>Standards</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50281-1-1
<b>Enclosure</b>	aluminium die-cast, enamel finish
<b>Actuator</b>	stainless steel 1.4301
<b>Switch insert</b>	EEx 13
<b>Protection class</b>	IP 65 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break ⊖
<b>Switching elements</b>	double-break changeover contact Zb, galvanically separated contact bridges
<b>Termination</b>	pre-wired cable H05VV-F 4 x 0.75 mm <sup>2</sup>
<b>Cable section</b>	4 x 0.75 mm <sup>2</sup>
<b>Cable length</b>	3 m
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 0.25 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Positive break travel</b>	12 mm
<b>Positive break force</b>	-
<b>Ambient temperature</b>	-20 °C ... +65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Ex-marking</b>	⊕ II 2G EEx d IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	PTB 03 ATEX 1068 X, referring to the switch insert



### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	EEx ST 61 10/1S

### Ordering details

EEx ST 61 10/1S

- Contact type 1 NC/1 NO, (20)
- Range
- Safety door switch
- Ex-certified device

# Ex door contacts with positive break

## // EEx ST 61 range, actuator

### Features/Options

#### ST 61-B1

- Rubber mountings, damp vibrations on safety guards
- Actuating radius on hinged guards
  - a = 140 mm und b = 1000 mm
- x = 30 mm

### Features/Options

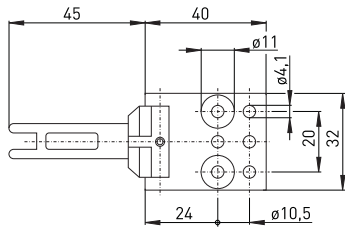
#### ST 61-B5

- Rubber mountings, damp vibrations on safety guards
- Particularly suitable for hinged guards
- Actuating radius on hinged guards
  - a = 140 mm and b = 1000 mm
- x = 15 mm

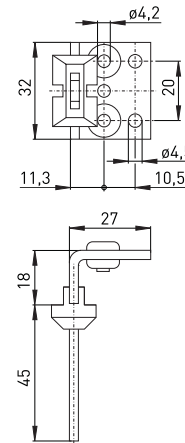
### Note

Inserted position of actuator = 0 in switch travel diagram.  
Actuators must be ordered separately.

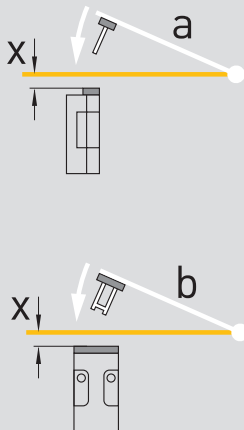
### // Straight actuator ST 61-B1



### // Angled actuator ST 61-B5



### // Actuating radius



- The axis of the hinge should be x mm above the top of the edge of the safety switch and in the same plane.
- a Actuating radius at 90° to the plane of the actuator
- b Actuating radius in line with the plane of the actuator
- x Axial offset



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## Ex position switches

### Thermoplastic enclosure

// EEx 13 range

as of page 30

// EEx 14 range

as of page 40

// EEx 95 range

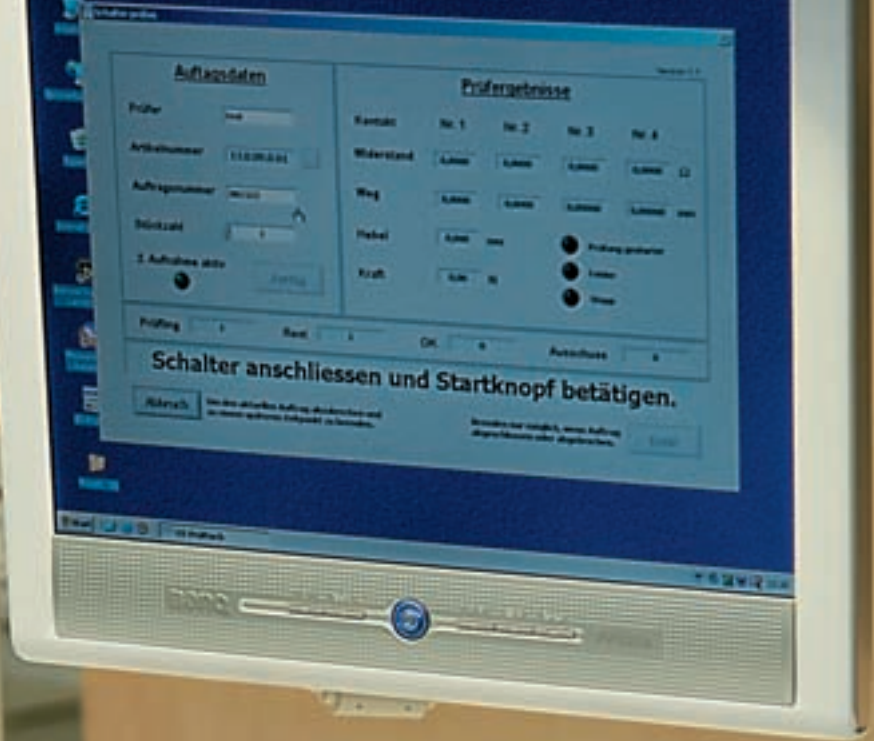
as of page 48

### Metal enclosure

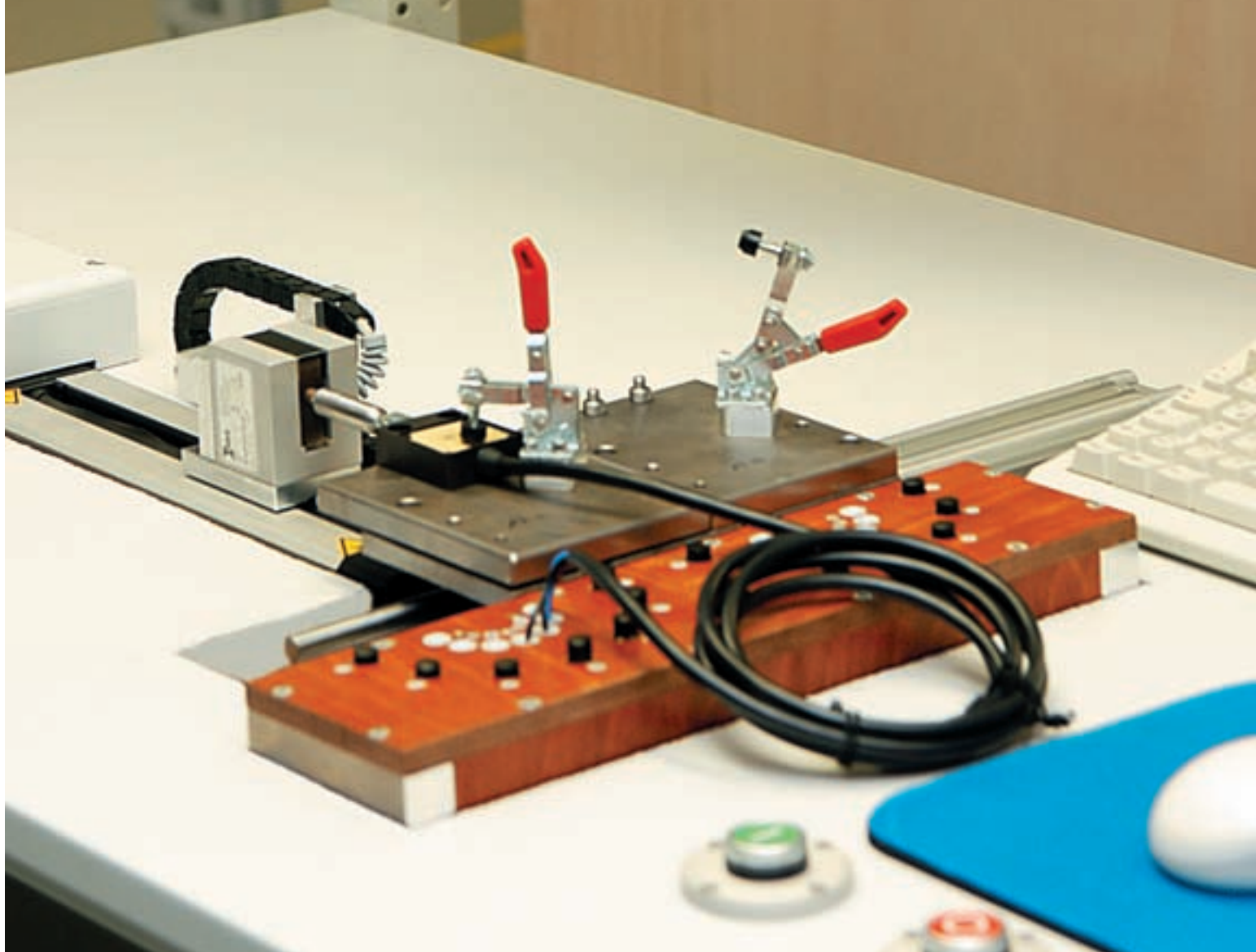
// EEx 335 range

as of page 56





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# Ex position switches

## Range of application

Ex position switches with safety function are used for the most varied positioning duties, e.g. as contacts on speed limiters during the triggering or the locking of the speed limiter.

Ex position switches with safety function are furthermore used to monitor the door position on existing lifts and the routing of the lift cabin.

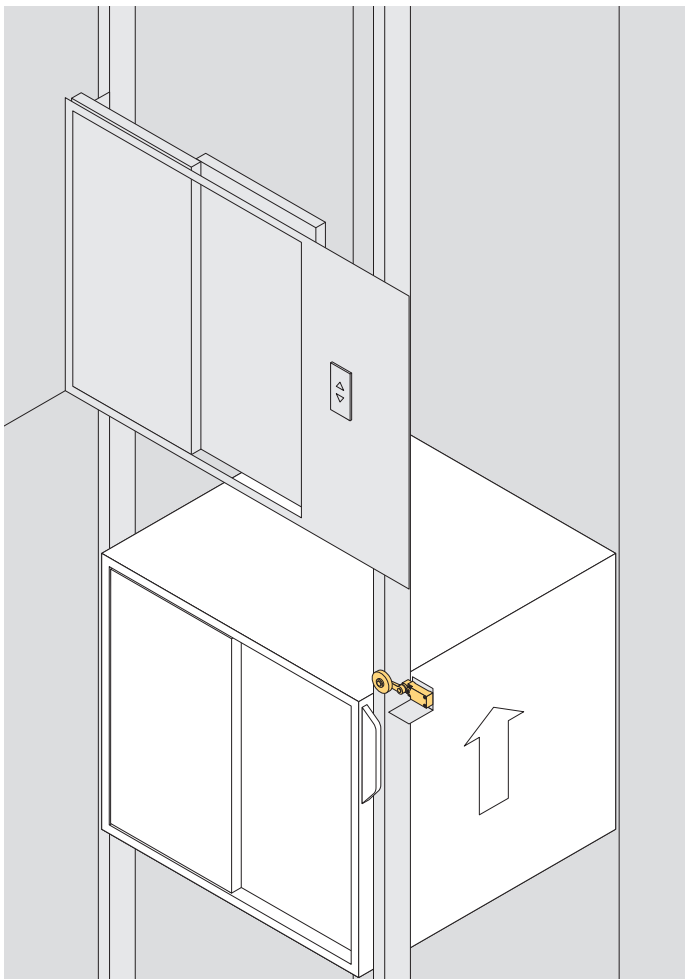
For speed reduction before the end of the track, Ex Position switches with silent rubber roller are used.

Ex position switches are furthermore used as limit switches in the shaft head and in the pit to maintain the levelling accuracy in case of malfunction of the lift unit or as a guard contact in case of excessive speed to shut down the lift upon activation of the braking mechanism.

Ex position switches are furthermore used as slack-wire switches to monitor the carrier cable tension of the lift cabin on indirect hydraulic lifts.

## Application

### as speed pre-limit switch



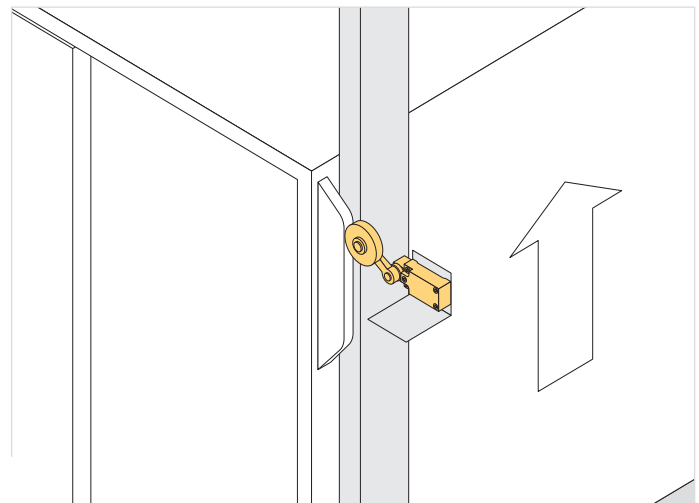
## Design and mode of operation

The Ex position switches with safety function have positive linkage from the actuator to the positive-break NC contact. Different versions with snap or slow action, as well as mechanical locking and latching options, are available.

The Ex position switches with safety function can be fitted in any desired mounting position.

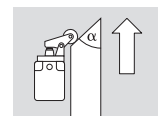
The Ex position switches presented in this section have the CE marking as per Directive ATEX 94/9/EC from the certified Testing Laboratory EXAM, identification number 0158.

### actuated



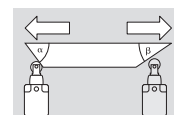
### Legends

$\alpha$ : Actuating angle from below, referring to the lever position as shown in the drawing



$\alpha$ : Actuating angle from right

$\beta$ : Actuating angle from left, referring to the lever position as shown in the drawing






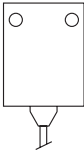
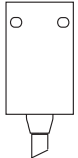
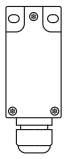
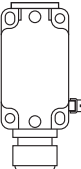


# Selection table

## Ex position switches










// Ranges

// Actuator

		↓	↓	↺	↺	↺
						
<b>EEx 13, as of page 30</b> - Thermoplastic enclosure - Pre-wired cable		+ W	F	KU WKU	FKU	
<b>EEx 14, as of page 40</b> - Thermoplastic enclosure - Pre-wired cable		+ W	F	KU WKU	FKU	VKU
<b>EEx 95, as of page 48</b> - Thermoplastic enclosure - Wiring compartment - 1 cable entry - Design to DIN EN 50 047		W				
<b>EEx 335, as of page 56</b> - Metal enclosure - Wiring compartment - 1 cable entry		S				
+ default: plunger without watertight collar						

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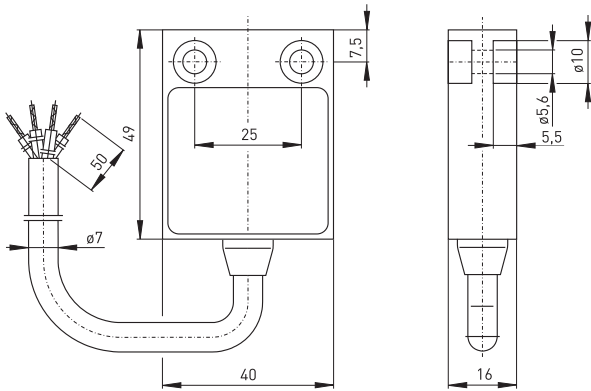
Actuating direction →

	↔	↔	↔	↔	↔	↑	↔	↔	↔	
										
	R WR			WH	WHL	WPH	D	DL	DS	
	R WR		VR				D	DL	DS	
	R	RL		WH WHM	WHLM	WPH WPHM	D D50		DS	
	R			1K		3K	4VH 4VH50	4V3H	4V7H	

# Ex position switches

// EEx 13 range

// EEX 13



## Features/Options

- Thermoplastic enclosure
- Double insulation
- Slow action, double-break changeover contact
- Slow action with overlapping contacts available
- Suitable for in-line mounting
- Pre-wired cable, cable length 1 metre
- Version for equipment category 3D, Dust-Ex zone 22 available

## Technical data

Standards	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50281-1-1
Enclosure	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing UL 94-V0
Switch insert	-
Protection class	IP 65 to EN 60529
Contact material	silver
Switching system	slow action, NC contact with positive break
Switching elements	changeover contact Zb or 2 NC contacts, galvanically separated contact bridges
Termination	pre-wired cable H05VV-F
Cable section	4 x 0.75 mm <sup>2</sup>
Cable length	1, 2, 5 und 10 m
U <sub>imp</sub>	4 kV
U <sub>i</sub>	250 V
I <sub>the</sub>	6 A
I <sub>e</sub> /U <sub>e</sub>	6 A/250 VAC; 0.25 A/230 VDC
Utilisation category	AC-15, DC-13
Max. fuse rating	6 A gL/gG D-fuse
Ambient temperature	-20 °C ... +65 °C
Mechanical life	> 1 million operations
Switching frequency	1800/h
Repeat accuracy of switching points	± 0.1 mm
Impact resistance/Contact opening	max. 2 x 4.5 mm
Ex-marking	⊕ II 2G EEx d IIC T6, II 2D IP65 T80°C
Approvals	PTB 03 ATEX 1068 X

## Ordering details

EEx 13 WR 10/1S-V-s-1m-3D

- Equipment category 3D, Dust-Ex zone 22
- Cable length 1 m, (2 m, 5 m, 10 m)
- Pre-wired cable on side
- Mechanical locking
- Contact type 1 NC/1 NO, (UE)
- Actuator R (H, TK, D, etc. ...)
- Watertight collar
- Range
- Ex-certified device

# Ex position switches

## // EEx 13 range

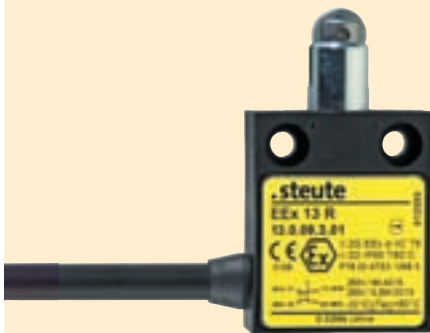
### Features/Options

- Special cables available on request
- Gold-plated contacts available on request
- Mechanical locking: actuate to lock, pull unlocking button to unlock

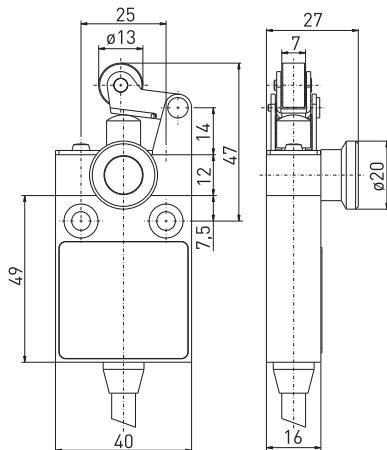
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 0° to switch axis

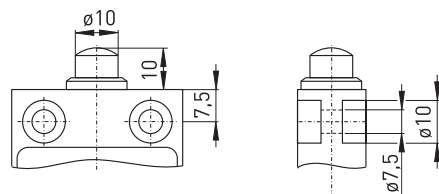
### // Pre-wired cable on side



### // Mechanical locking



### // Plunger

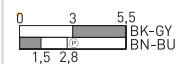


Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

EEx 13



# Ex position switches

## // EEx 13 range, actuator

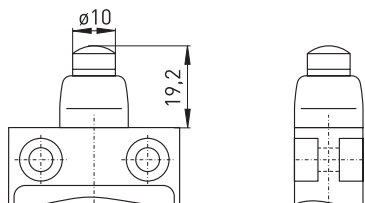
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 0° to switch axis
- Collar to protect against entry of foreign bodies

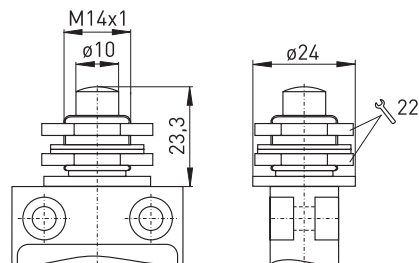
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 0° to switch axis

### // Plunger with watertight collar W



### // Plunger for top mounting F



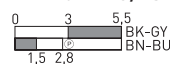
Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

EEx 13 W 10/15

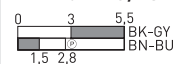


BK-GY  
BN-BU

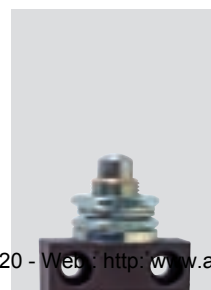
#### Slow action

1 NC/1 NO contact

EEx 13 F 10/15



BK-GY  
BN-BU



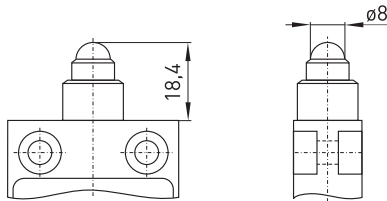
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 20° to switch axis
- Can be actuated in line with or from side of switch axis
- Actuator head with captive stainless steel ball actuator
- Exact repeatability of switching point

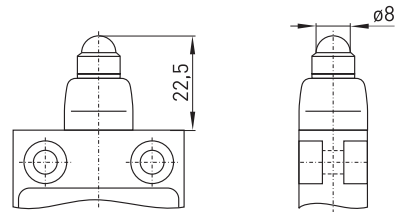
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 15° to switch axis
- Can be actuated in line with or from side of switch axis
- Actuator head with captive stainless steel ball actuator
- Exact repeatability of switching point
- Collar to protect against entry of foreign bodies

// Ball plunger KU



// Ball plunger collar WKU

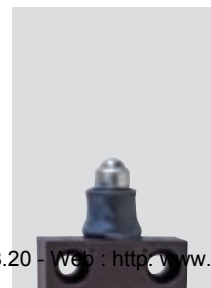
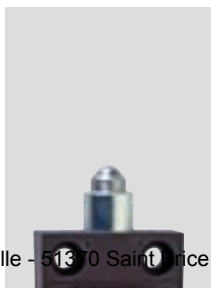


Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<p><b>EEx 13 KU 10/1S</b></p>

	Slow action
1 NC/1 NO contact	<p><b>EEx 13 WKU 10/1S</b></p>





# Ex position switches

## // EEx 13 range, actuator

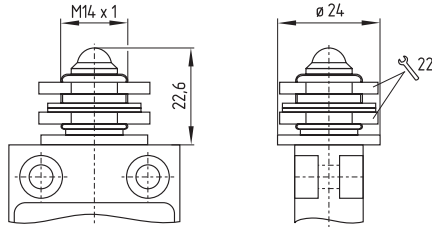
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 20° to switch axis
- Can be actuated in line with or from side of switch axis
- Actuator head with captive stainless steel ball actuator
- Ball diameter 8 mm
- Exact repeatability of switching point

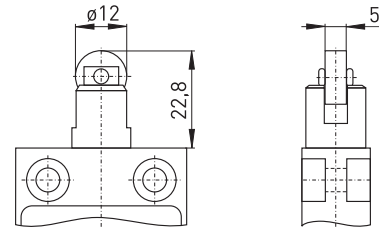
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 30° to switch axis
- Metal roller
- Can be supplied with actuator turned by 90°

## // Ball plunger for top mounting FKU



## // Roller plunger R



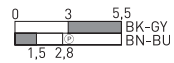
34

Contact variants: Switch travel/contacts

Slow action

1 NC/1 NO contact

EEx 13 FKU 10/1S

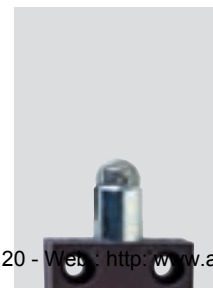
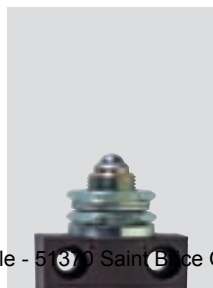
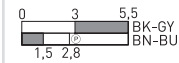


Contact variants: Switch travel/contacts

Slow action

1 NC/1 NO contact

EEx 13 R 10/1S



**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 25° to switch axis
- Metal roller
- Can be supplied with actuator turned by 90°
- Collar to protect against entry of foreign bodies

**Features/Options**

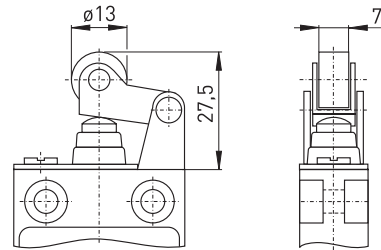
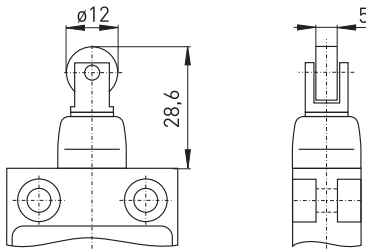
- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 40^\circ$  and  $\beta = 25^\circ$  to switch axis
- Metal roller
- Can be supplied with actuator turned by 180°
- Collar to protect against entry of foreign bodies
- Available with thermoplastic roller on request

**Note**

Actuation from the left should be avoided, as this reduces the mechanical life of the position switch.

// Roller plunger collar WR

// Lever collar WH

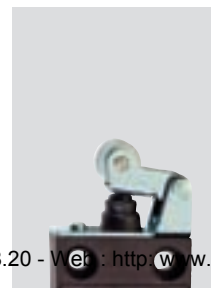
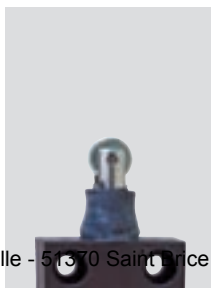


Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

Slow action	
1 NC/1 NO contact	<p><b>EEx 13 WR 10/1S</b></p>

Slow action	
1 NC/1 NO contact	<p><b>EEx 13 WH 10/1S</b></p>



# Ex position switches

## // EEx 13 range, actuator

### Features/Options

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 40^\circ$  and  $\beta = 25^\circ$  to switch axis
- Metal roller
- Can be supplied with actuator turned by  $180^\circ$
- Collar to protect against entry of foreign bodies
- Available with thermoplastic roller on request

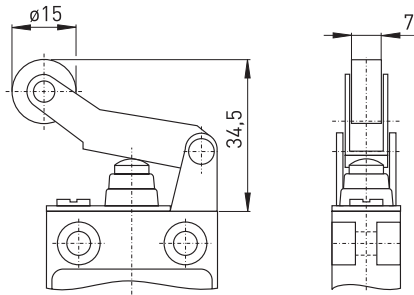
### Note

Actuation from the left should be avoided, as this reduces the mechanical life of the position switch.

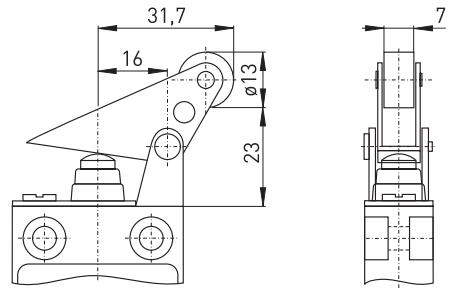
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Actuation from bottom parallel to the switch
- Metal roller
- Can be supplied with actuator turned by  $180^\circ$
- Collar to protect against entry of foreign bodies
- Available with thermoplastic roller on request

## // Long lever collar WHL



## // Parallel lever collar WPH



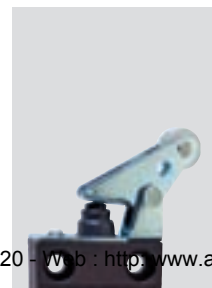
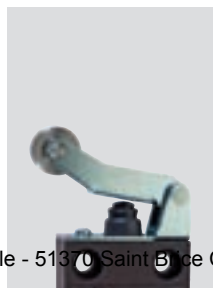
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### Contact variants: Switch travel/contacts

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	EEx 13 WHL 1Ö/1S

	Slow action
1 NC/1 NO contact	EEx 13 WPH 1Ö/1S



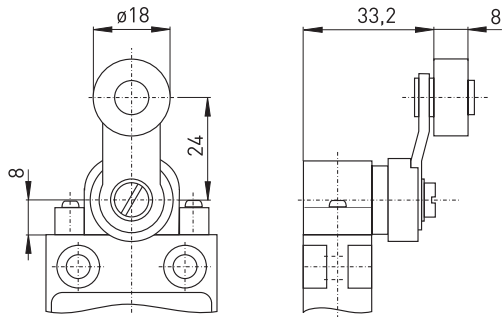
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 45° to switch axis
- Wear-resistant thermoplastic roller
- Lever can be repositioned by 10° steps clockwise or counter-clockwise
- Actuator can be repositioned by 180°
- Metal roller available on request

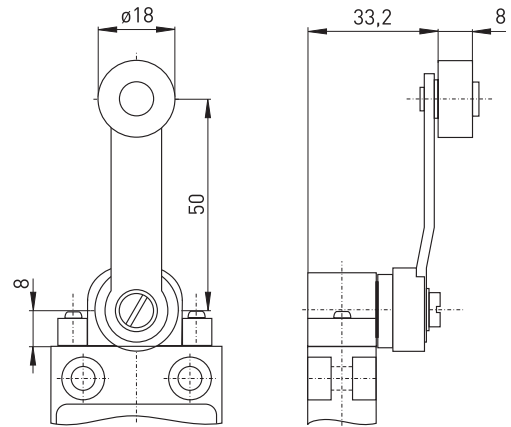
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 45° to switch axis
- Wear-resistant thermoplastic roller
- Lever can be repositioned by 10° steps clockwise or counter-clockwise
- Actuator can be repositioned by 180°
- Metal roller available on request

// Roller lever D



// Long roller lever DL

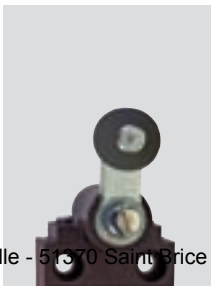


Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<p><b>EEx 13 D 10/1S</b></p>

	Slow action
1 NC/1 NO contact	<p><b>EEx 13 DL 10/1S</b></p>



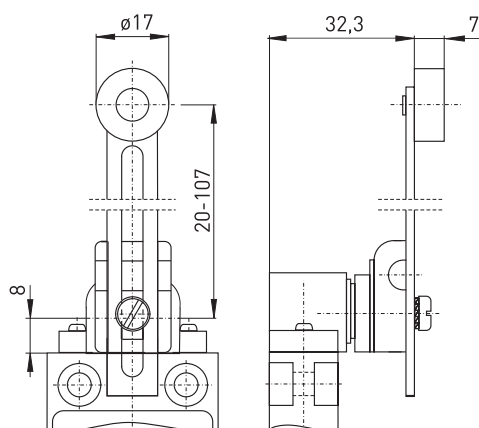
# Ex position switches

## // EEx 13 range, actuator

### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 45° to switch axis
- Wear-resistant thermoplastic roller
- Lever can be repositioned by 10° steps clockwise or counter-clockwise
- Actuator can be repositioned by 180°
- Metal roller available on request

### // Length-adjustable roller lever DS

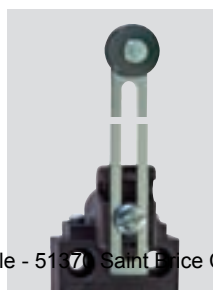
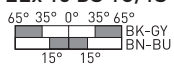


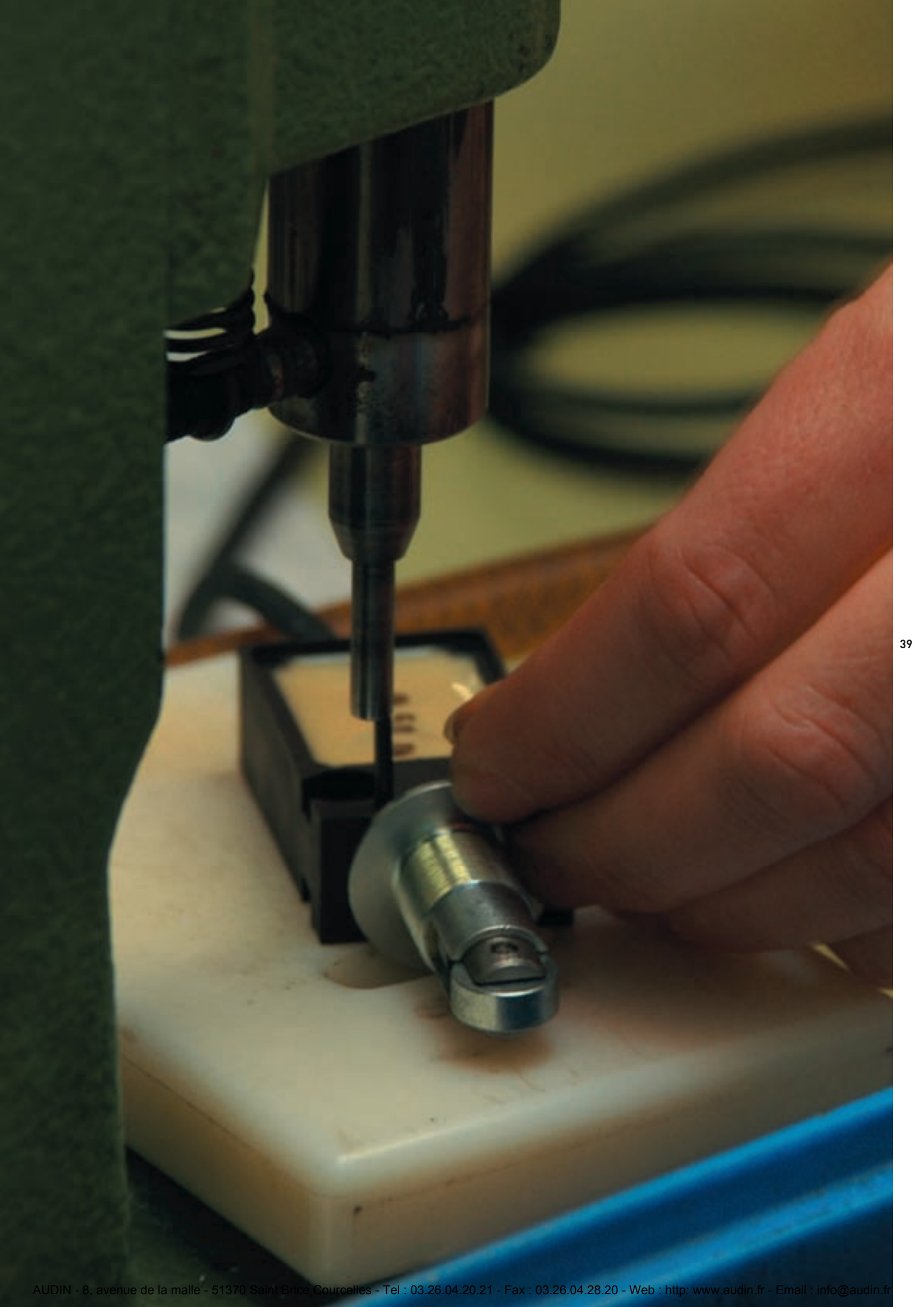
Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

EEx 13 DS 10/15





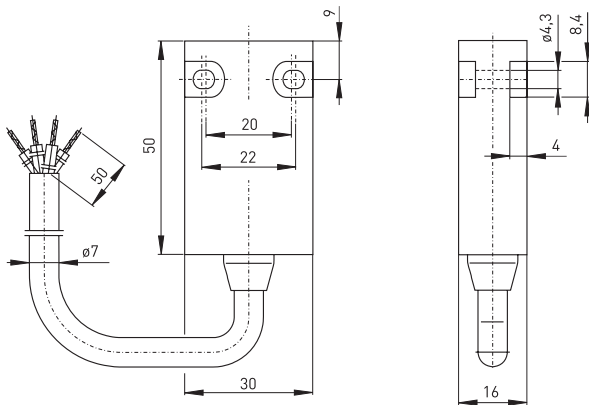
# Ex position switches

## // EEx 14 range

### // EEX 14



40



#### Features/Options

- Thermoplastic enclosure
- Double insulation ☐
- Slow action ⊖, changeover contact or 2 NC contacts with double break
- Available with overlapping contacts
- Mounting dimensions to DIN EN 50 047
- Suitable for in-line mounting
- Pre-wired cable, cable length 1 metre
- Version for equipment category 3D, Dust-Ex zone 22 available

### Technical data

Standards	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50281-1-1
Enclosure	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing UL 94-V0
Switch insert	-
Protection class	IP 65 to EN 60529
Contact material	silver
Switching system	slow action, NC contact with positive break ⊖ or snap action
Switching elements	changeover contact, galvanically separated contact bridges
Termination	pre-wired cable H05VV-F
Cable section	4 x 0.75mm <sup>2</sup>
U <sub>imp</sub>	4 kV
U <sub>i</sub>	250 V
I <sub>the</sub>	6 A
I <sub>e</sub> /U <sub>e</sub>	6 A/250 VAC
Utilisation category	AC-15, DC-13
Max. fuse rating	6 A gL/gG D-fuse
Ambient temperature	-20 °C ... +65 °C
Mechanical life	> 1 million operations
Switching frequency	1800/h
Repeat accuracy of switching points	± 0.1 mm
Contact opening	max. 2 x 4 mm
Ex-marking	⊕ II 2G EEx d IIC T6, II 2D IP65 T80°C
Approvals	PTB 03 ATEX 1070 X
Note	Protect switch against mechanical damage!

#### Ordering details

**EEx 14 WR 10/1S-RE-s-1m-3D**

Equipment category 3D, Dust-Ex zone 22  
 Cable length 1 m, (2 m, 5 m, 10 m)  
 Pre-wired cable on side  
 Latching  
 Contact type 1 NC/1 NO, (UE, 2Ö)  
 Actuator R (H, TK, D, etc. ...)  
 Watertight collar  
 Range  
 Ex-certified device

# Ex position switches

## // EEx 14 range, actuator

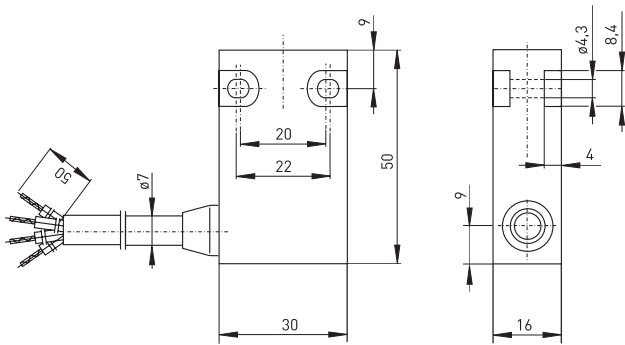
### Features/Options

- Snap action, double-break changeover contact available, e.g. EExM 14 R 1 NC/1 NO
- Slow action with 2 NC contacts available
- Gold-plated contacts available on request
- With latching: make-and-break principle

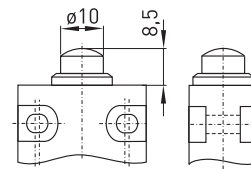
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 0° from switch axis

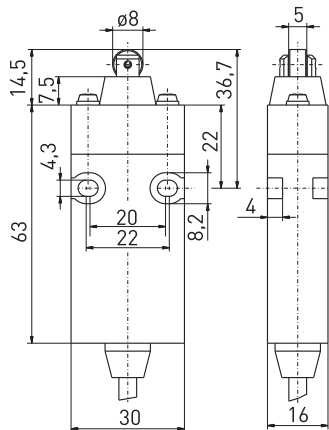
## // Pre-wired cable on side



## // Plunger



## // With latching

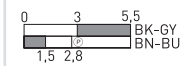


### Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

EEx 14 10/15





# Ex position switches

## // EEx 14 range, actuator

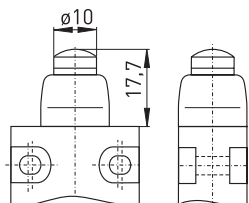
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 0° to switch axis
- Collar to protect against entry of foreign bodies

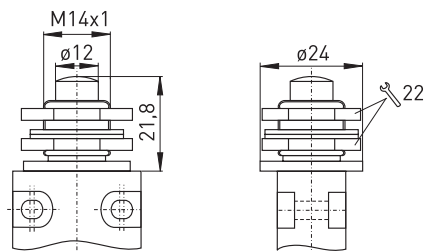
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 0° to switch axis

### // Plunger collar W



### // Plunger for top mounting F

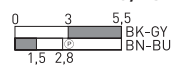


Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

**EEx 14 W 10/15**

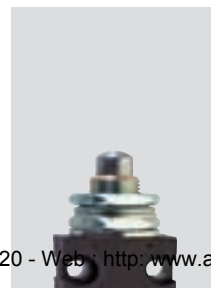
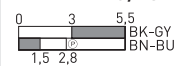


Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

**EEx 14 F 10/15**



**Features/Options**

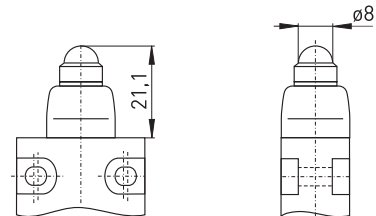
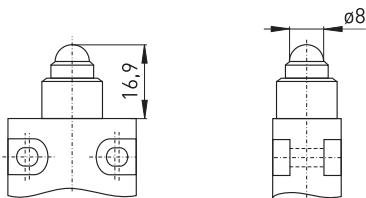
- Actuating speed 0.5 m/s with actuating angle of 20° to switch axis
- Can be actuated in line with or from side of switch axis
- Actuator head with captive stainless steel ball actuator
- Exact repeatability of switching point

**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 20° to switch axis
- Can be actuated in line with or from side of switch axis
- Actuator head with captive stainless steel ball actuator
- Exact repeatability of switching point
- Collar to protect against entry of foreign bodies

**// Ball plunger KU**

**// Ball plunger collar WKU**

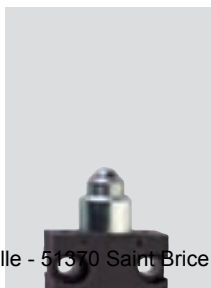


Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<p><b>EEx 14 KU 10/1S</b></p>

	Slow action
1 NC/1 NO contact	<p><b>EEx 14 WKU 10/1S</b></p>



# Ex position switches

## // EEx 14 range, actuator

### Features/Options

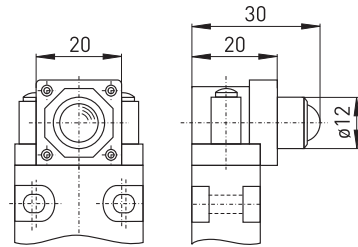
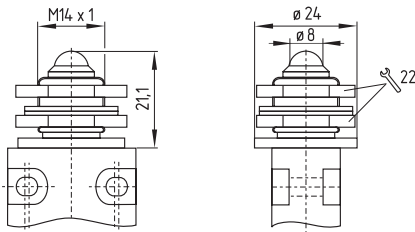
- Actuating speed 0.5 m/s with actuating angle of 20° to switch axis
- Can be actuated in line with or from side of switch axis
- Actuator head with captive stainless steel ball actuator
- Exact repeatability of switching point

### Features/Options

- Actuation from any direction
- Actuator head with captive stainless steel ball actuator

## // Ball plunger for top mounting FKU

## // Vertical ball plunger VKU



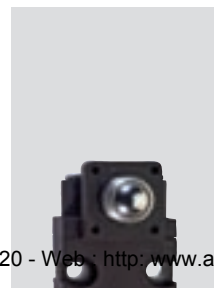
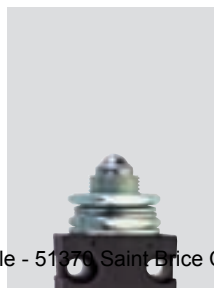
44

### Contact variants: Switch travel/contacts

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 14 FKU 10/1S</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 14 VKU 10/1S</b> 



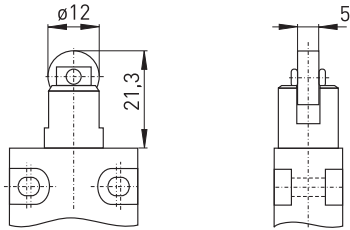
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 30° to switch axis
- Metal roller
- Can be supplied with actuator turned by 90°

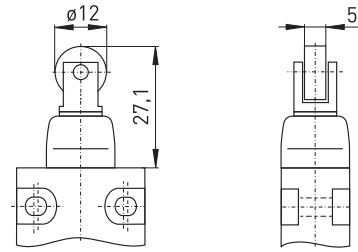
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 25°
- Metal roller
- Can be supplied with actuator turned by 90°
- Collar to protect against entry of foreign bodies

// Roller plunger R



// Roller plunger collar WR



Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

Slow action	
1 NC/1 NO contact	<p><b>EEx 14 R 10/1S</b></p>

Slow action	
1 NC/1 NO contact	<p><b>EEx 14 WR 10/1S</b></p>



# Ex position switches

## // EEx 14 range, actuator

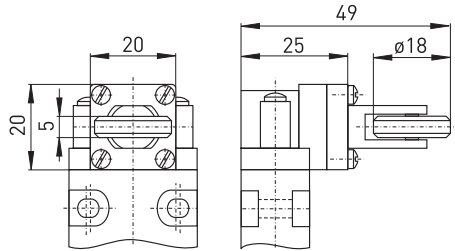
### Features/Options

- Actuator can be repositioned by 90°
- Wear-resistant thermoplastic roller

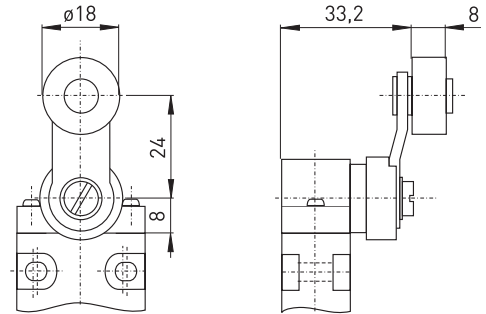
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of 45°
- Wear-resistant thermoplastic roller
- Lever can be repositioned by 10° steps clockwise or counter-clockwise
- Actuator can be repositioned by 180°
- Metal roller available on request

### // Vertical roller plunger VR



### // Roller lever D

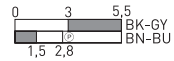


Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

**EEx 14 VR 10°/1S**

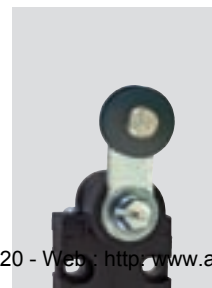
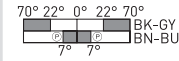


Contact variants: Switch travel/contacts

#### Slow action

1 NC/1 NO contact

**EEx 14 D 10°/1S**



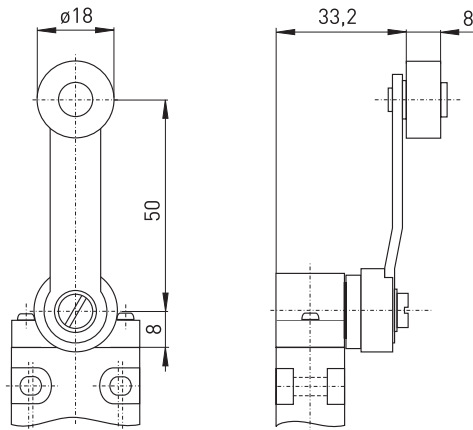
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 45° to switch axis
- Wear-resistant thermoplastic roller
- Lever can be repositioned by 10° steps clockwise or counter-clockwise
- Actuator can be repositioned by 180°
- Metal roller available on request

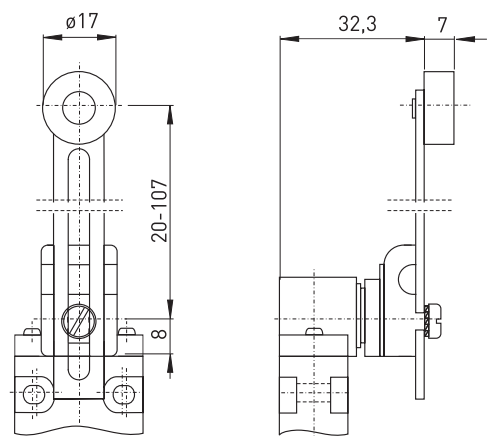
**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of 45° to switch axis
- Wear-resistant thermoplastic roller
- Lever can be repositioned by 10° steps clockwise or counter-clockwise
- Actuator can be repositioned by 180°
- Metal roller available on request

// Long roller lever DL



// Length-adjustable roller lever DS



Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

	Slow action												
1 NC/1 NO contact	<b>EEx 14 DL 10/15</b>												
	<table border="1"> <tr> <td>70°</td> <td>22°</td> <td>0°</td> <td>22°</td> <td>70°</td> <td>BK-GY</td> </tr> <tr> <td>7°</td> <td>7°</td> <td></td> <td>7°</td> <td>7°</td> <td>BN-BU</td> </tr> </table>	70°	22°	0°	22°	70°	BK-GY	7°	7°		7°	7°	BN-BU
70°	22°	0°	22°	70°	BK-GY								
7°	7°		7°	7°	BN-BU								

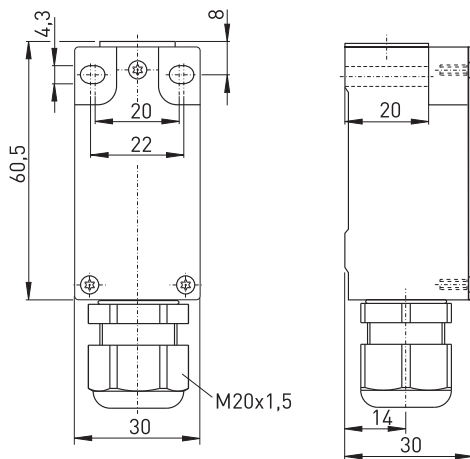
	Slow action												
1 NC/1 NO contact	<b>EEx 14 DS 10/15</b>												
	<table border="1"> <tr> <td>70°</td> <td>22°</td> <td>0°</td> <td>22°</td> <td>70°</td> <td>BK-GY</td> </tr> <tr> <td>7°</td> <td>7°</td> <td></td> <td>7°</td> <td>7°</td> <td>BN-BU</td> </tr> </table>	70°	22°	0°	22°	70°	BK-GY	7°	7°		7°	7°	BN-BU
70°	22°	0°	22°	70°	BK-GY								
7°	7°		7°	7°	BN-BU								



# Ex position switches

// EEx 95 range

// EEX 95



## Features/Options

- Thermoplastic enclosure
- To DIN EN 50 047
- Transversely slotted mounting holes
- Double insulation ☐
- Enclosure with longitudinally slotted holes available on request
- Slow action with overlapping contacts available
- Actuating heads can be repositioned by 4 x 90°
- Roller lever actuator can be repositioned by 10° steps
- Gold-plated contacts available on request
- Version for equipment category 3D, Dust-Ex zone 22 available

## Technical data

<b>Standards</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50019; EN 50281-1-1
<b>Enclosure</b>	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing UL 94-V0 stainless steel 1.4301
<b>Actuator</b>	-
<b>Switch insert</b>	-
<b>Protection class</b>	IP 67 gem. EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break ⊖
<b>Switching elements</b>	changeover contact Zb or 2 NC contacts, galvanically separated contact bridges
<b>Termination</b>	M3 screw terminals
<b>Cable section</b>	max. 1,5 mm <sup>2</sup> (incl. conductor ferrules)
<b>Cable length</b>	-
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 0,25 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Ambient temperature</b>	-20 °C ... +65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Switching frequency</b>	3600/h
<b>Repeat accuracy of switching points</b>	± 0,1 mm
<b>Contact opening</b>	max. 2 x 3,5 mm
<b>Ex-marking</b>	⊕ II 2G EEx de IIC T6, II 2D IP67 T80°C
<b>Approvals</b>	DMT 01 ATEX E 118

## Ordering details

EEx 95 WH 10/1S-LL-3D

- Equipment category 3D, Dust-Ex zone 22
- Longitudinally slotted holes
- Contact type 1NC/1NO, (2Ö, 2S, UE)
- Actuator H H (R, D, DS, etc. ...)
- Watertight collar
- Range
- Ex-certified device

# Ex position switches

## // EEx 95 range, actuator

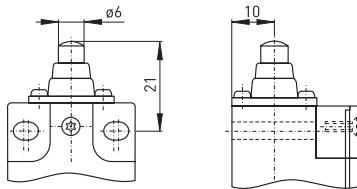
### Features/Options

- Actuator type B to DIN EN 50 047
- Actuator with watertight collar

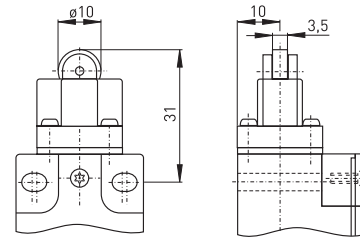
### Features/Options

- Actuator type C to DIN EN 50 047
- Wear-resistant thermoplastic roller
- Metal roller available on request
- Can be supplied with actuator turned by 4 x 90°

### // Plunger W



### // Roller plunger R



#### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 95 W 10/15</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 W UE</b> 
2 NC contacts	<b>EEx 95 W 20</b> 

#### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 95 R 10/15</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 R UE</b> 
2 NC contacts	<b>EEx 95 R 20</b> 



# Ex position switches

## // EEx 95 range, actuator

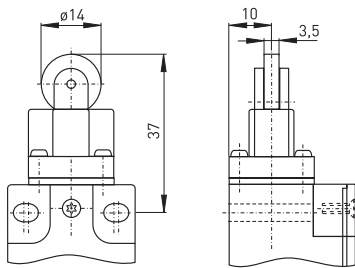
### Features/Options

- Wear-resistant thermoplastic roller
- Metal roller available on request
- Can be supplied with actuator turned by 4 x 90°

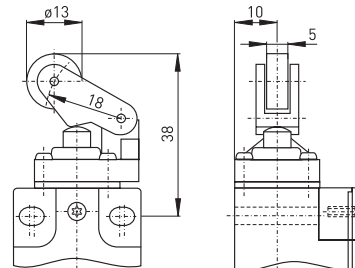
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 40^\circ$  and  $\beta = 25^\circ$  to switch axis
- Actuator type E to DIN EN 50 047
- Actuator with watertight collar
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by 4 x 90°
- Metal roller available on request

## // Long roller plunger RL



## // Roller lever WH



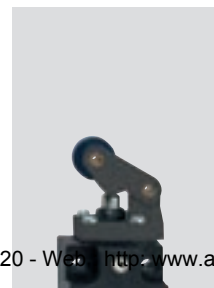
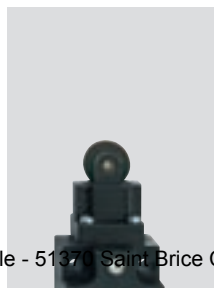
50

### Contact variants: Switch travel/contacts

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 95 RL 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 RL UE</b> 
2 NC contacts	<b>EEx 95 RL 2Ö</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 95 WH 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 WH UE</b> 
2 NC contacts	<b>EEx 95 WH 2Ö</b> 



**Features/Options**

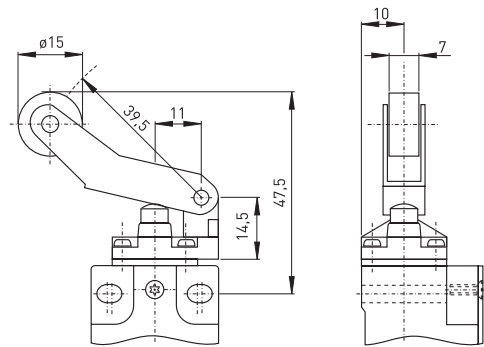
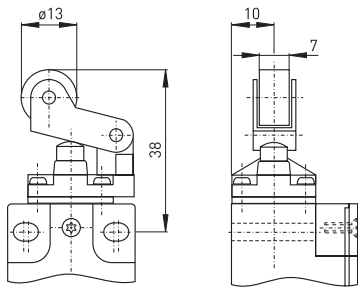
- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 40^\circ$  and  $\beta = 25^\circ$  to switch axis
- Actuator with watertight collar
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$
- Metal roller available on request

**Features/Options**

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 40^\circ$
- Actuator with watertight collar
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$
- Metal roller available on request

**// Metal roller lever WHM**

**// Long metal roller lever WHLM**

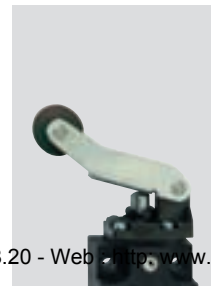
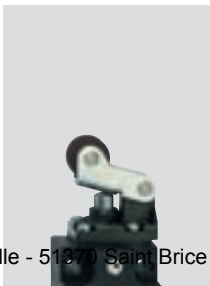


**Contact variants: Switch travel/contacts**

**Contact variants: Switch travel/contacts**

	Slow action
1 NC/1 NO contact	<p><b>EEx 95 WHM 1Ö/1S</b></p>
1 NC/1 NO contact with overlapping	<p><b>EEx 95 WHM UE</b></p>
2 NC contacts	<p><b>EEx 95 WHM 2Ö</b></p>

	Slow action
1 NC/1 NO contact	<p><b>EEx 95 WHLM 1Ö/1S</b></p>
1 NC/1 NO contact with overlapping	<p><b>EEx 95 WHLM UE</b></p>
2 NC contacts	<p><b>EEx 95 WHLM 2Ö</b></p>



# Ex position switches

## // EEx 95 range, actuator

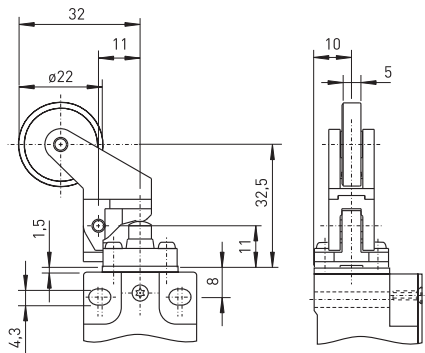
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 40^\circ$  to switch axis
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by 4 x 90°
- Metal roller available on request

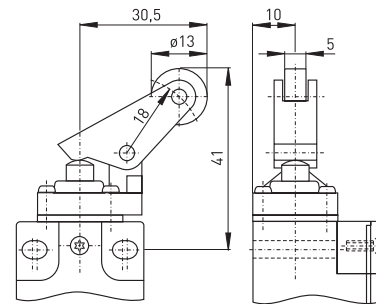
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Actuator with watertight collar
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by 4 x 90°
- Actuation from bottom parallel to the switch
- Metal roller available on request

## // Thermoplastic roller lever 4K



## // Parallel lever WPH



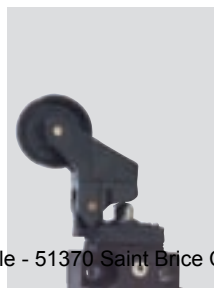
52

### Contact variants: Switch travel/contacts

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 95 4K 1Ö/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 4K UE</b> 
2 NC contacts	<b>EEx 95 4K 2Ö</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 95 WPH 1Ö/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 WPH UE</b> 
2 NC contacts	<b>EEx 95 WPH 2Ö</b> 



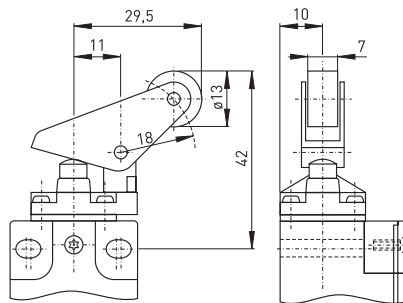
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Actuator with watertight collar
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$
- Actuation from bottom parallel to the switch
- Metal roller available on request

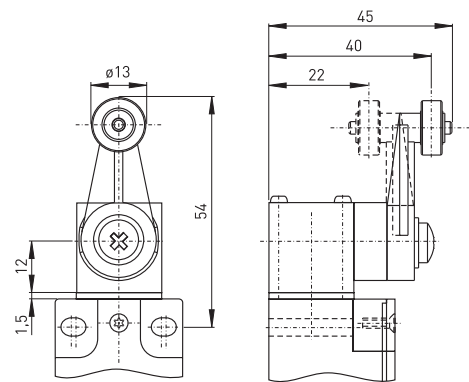
### Features/Options

- Actuator can be repositioned by  $10^\circ$  steps
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$
- Metal roller available on request

## // Metal parallel lever WPHM



## // Roller lever D

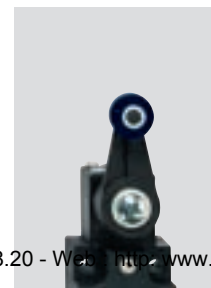


### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 95 WPHM 1Ö/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 WPHM UE</b> 
2 NC contacts	<b>EEx 95 WPHM 2Ö</b> 

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 95 D 1Ö/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 D UE</b> 
2 NC contacts	<b>EEx 95 D 2Ö</b> 



# Ex position switches

## // EEx 95 range, actuator

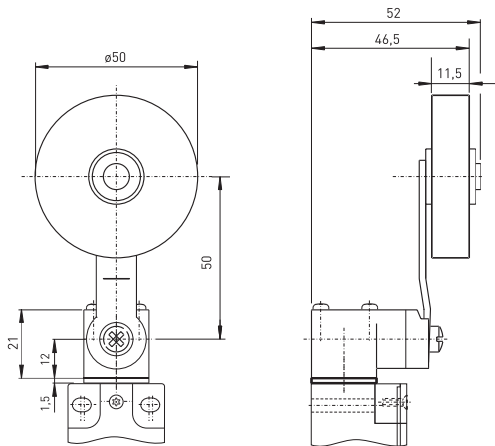
### Features/Options

- Actuator can be repositioned by 10° steps
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by 4 x 90°
- Metal roller available on request

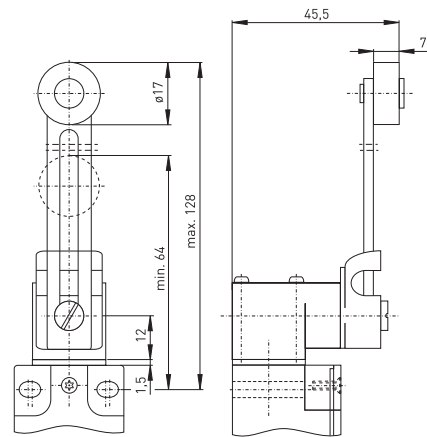
### Features/Options

- Actuator can be repositioned by 10° steps
- Adjustable roller position
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by 4 x 90°
- Metal roller available on request

## // Roller lever with rubber roller D50



## // Length-adjustable roller lever DS



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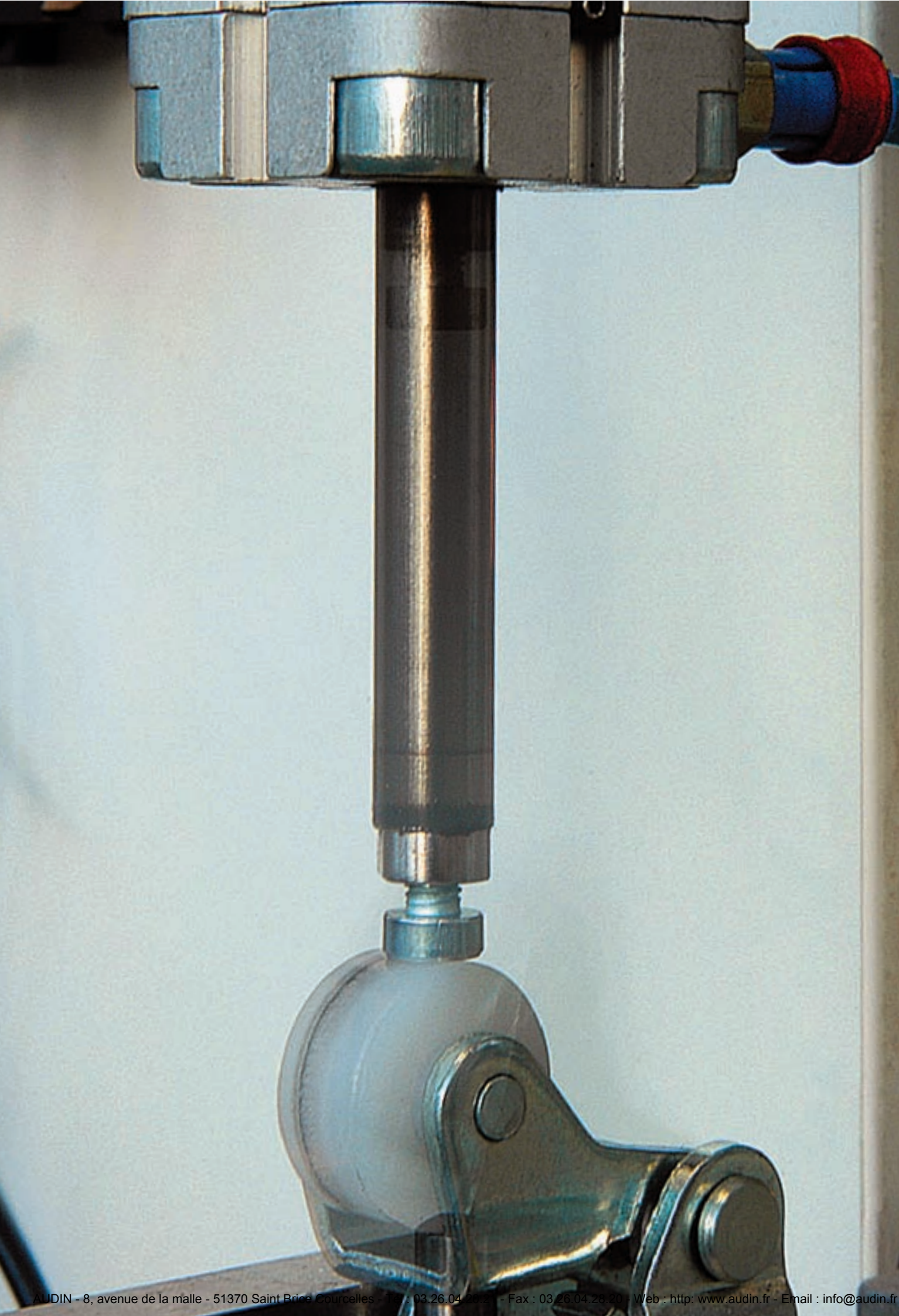
### Contact variants: Switch travel/contacts

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 95 D50 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 D50 UE</b> 
2 NC contacts	<b>EEx 95 D50 20</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 95 DS 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 95 DS UE</b> 
2 NC contacts	<b>EEx 95 DS 20</b> 





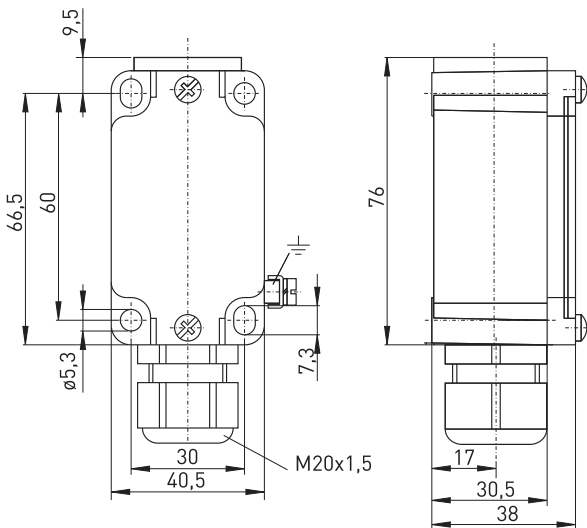
# Ex position switches

// EEx 335 range

// EEX 335



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## Features/Options

- Metal enclosure
- To EN 50041
- Slow action with 2 positive-break NC contacts to EN 60947-5-1
- Slow action with overlapping contacts available
- Wiring compartment
- Actuating heads can be repositioned by 4 x 90°
- Rocking lever actuator can be repositioned by 10° steps
- Version for equipment category 3D, Dust-Ex zone 22 available

## Technical data

<b>Standards</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50019; EN 50281-1-1
<b>Enclosure</b>	zinc die-cast, enamel finish
<b>Actuator</b>	stainless steel 1.4301
<b>Switch insert</b>	Ex 95
<b>Protection class</b>	IP 65 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break ⊖
<b>Switching elements</b>	double-break changeover contact Zb or 2 NC contacts, galvanically separated contact bridges
<b>Termination</b>	M3 screw terminals
<b>Cable section</b>	max. 1.5 mm <sup>2</sup> (incl. conductor ferrules)
<b>Cable length</b>	-
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/400 VAC; 0.25 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Ambient temperature</b>	-20 °C ... +60 °C
<b>Mechanical life</b>	> 1 million operations
<b>Switching frequency</b>	1800/h
<b>Repeat accuracy of switching points</b>	± 0.1 mm
<b>Contact opening</b>	max. 2 x 3.5 mm
<b>Ex-marking</b>	⊕ II 2G EEx de IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	DMT 01 ATEX E 178

## Ordering details

EEx 335 S 10/1S-3D

Equipment category 3D,  
Dust-Ex zone 22  
Contact type 1NC/1NO, (2Ö, 2S, UE)  
Actuator S (R, 4VH, 4V7H, etc. ...)  
Range  
Ex-certified device

# Ex position switches

## // EEx 335 range, actuator

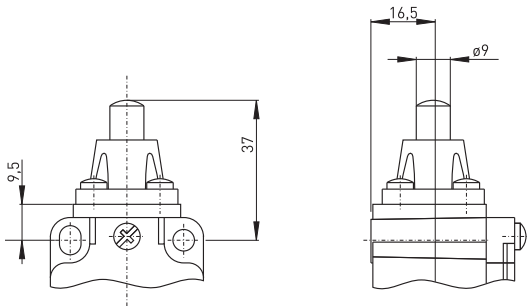
### Features/Options

- Actuator type C to DIN EN 50 041
- Actuating speed max.0.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis

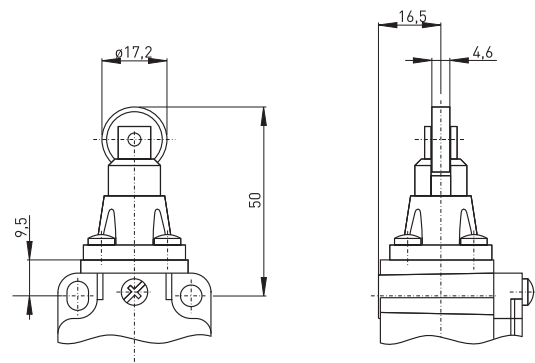
### Features/Options

- Actuator type B to DIN EN 50 041
- Actuating speed max.0.5 m/s with actuating angle of  $\alpha = 0^\circ$  to switch axis

### // Plunger S



### // Roller plunger R



Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 335 S 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 335 S UE</b> 
2 NC contacts	<b>EEx 335 S 20</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 335 R 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 335 R UE</b> 
2 NC contacts	<b>EEx 335 R 20</b> 





# Ex position switches

## // EEx 335 range, actuator

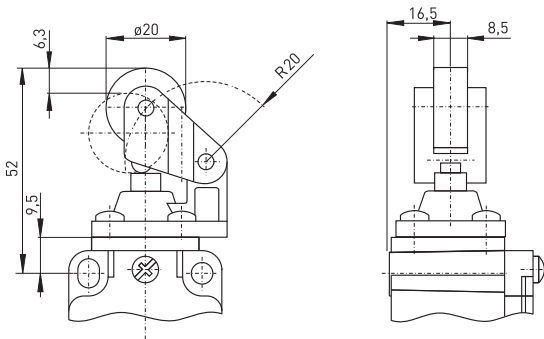
### Features/Options

- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$

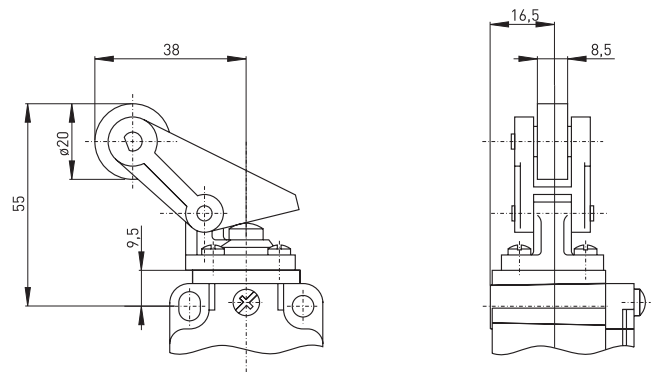
### Features/Options

- Actuation from bottom parallel to the switch
- Actuating speed 0.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$

### // Roller lever 1K



### // Parallel roller lever 3K



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Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 335 1K 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 335 1K UE</b> 
2 NC contacts	<b>EEx 335 1K 20</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 335 3K 10/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 335 3K UE</b> 
2 NC contacts	<b>EEx 335 3K 20</b> 



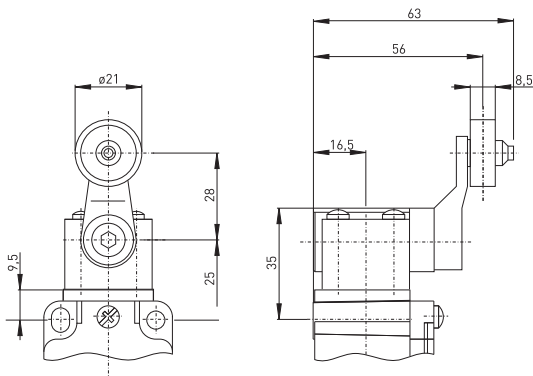
**Features/Options**

- Actuator type A to DIN EN 50 041
- Actuating speed max.2.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$

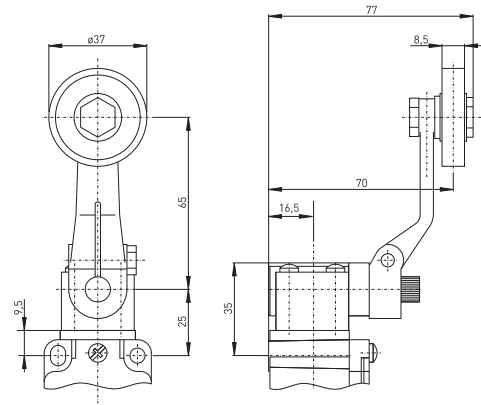
**Features/Options**

- Actuating speed max.2.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$

// Roller lever 4VH



// Long roller lever 4V3H

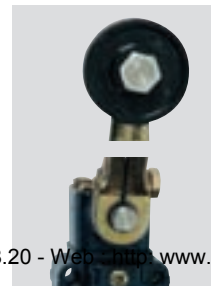


Contact variants: Switch travel/contacts

Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 335 4VH 10/1S</b> $85^\circ \quad 25^\circ 0' 25^\circ \quad 85^\circ$  $30^\circ 15' 15^\circ 30^\circ$
1 NC/1 NO contact with overlapping	<b>EEx 335 4VH UE</b> $85^\circ \quad 20^\circ 0' 20^\circ \quad 85^\circ$  $40^\circ 25' 25^\circ 40^\circ$
2 NC contacts	<b>EEx 335 4VH 20</b> $85^\circ \quad 30^\circ \quad 0^\circ \quad 30^\circ \quad 85^\circ$  $15^\circ 15^\circ$

	Slow action
1 NC/1 NO contact	<b>EEx 335 4V3H 10/1S</b> $85^\circ \quad 25^\circ 0' 25^\circ \quad 85^\circ$  $30^\circ 15' 15^\circ 30^\circ$
1 NC/1 NO contact with overlapping	<b>EEx 335 4V3H UE</b> $85^\circ \quad 20^\circ 0' 20^\circ \quad 85^\circ$  $40^\circ 25' 25^\circ 40^\circ$
2 NC contacts	<b>EEx 335 4V3H 20</b> $85^\circ \quad 30^\circ \quad 0^\circ \quad 30^\circ \quad 85^\circ$  $15^\circ 15^\circ$



# Ex position switches

## // EEx 335 range, actuator

### Features/Options

- Actuating speed max.2.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Silent rubber roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$

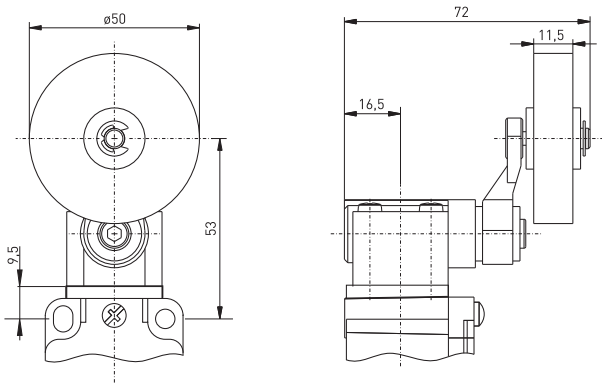
### Features/Options

- Actuating speed max.2.5 m/s with actuating angle of  $\alpha = 30^\circ$  to switch axis
- Wear-resistant thermoplastic roller
- Can be supplied with actuator turned by  $4 \times 90^\circ$
- For safety tasks with positively linked actuator  $\ominus$ , ordering index -2138

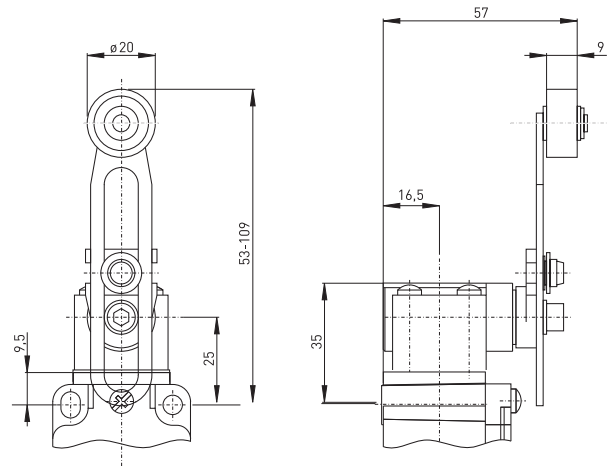
### Note

Positive break angle  $\ominus$  only applicable in combination with ordering index -2138

## // Roller lever with rubber roller 4VH50



## // Length-adjustable roller lever 4V7H

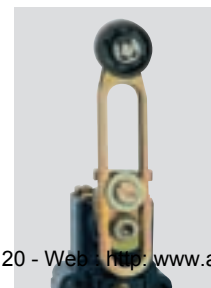


Contact variants: Switch travel/contacts

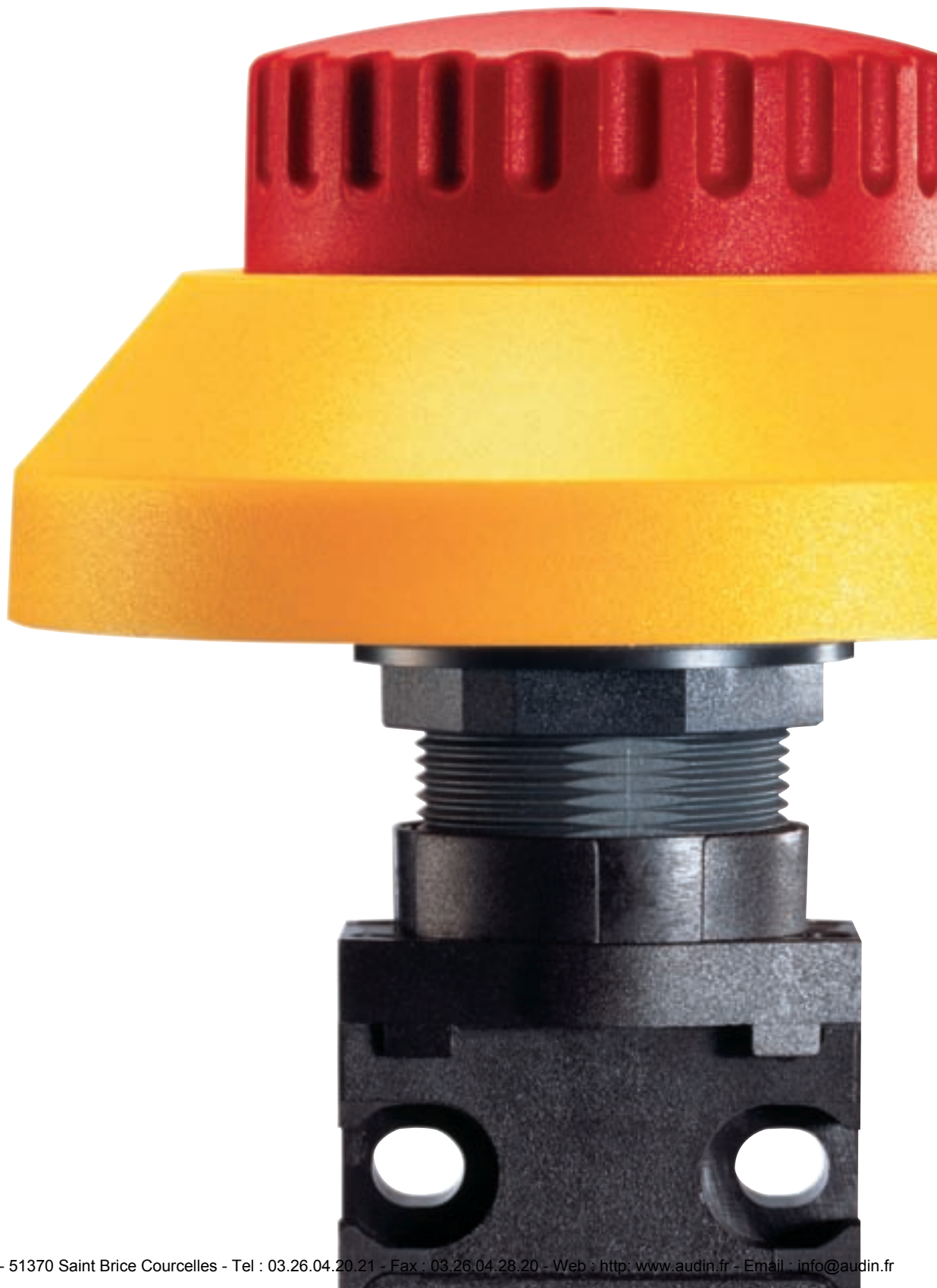
Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 335 4VH50 1Ö/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 335 4VH50 UE</b> 
2 NC contacts	<b>EEx 335 4VH50 2Ö</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 335 4V7H 1Ö/1S</b> 
1 NC/1 NO contact with overlapping	<b>EEx 335 4V7H UE</b> 
2 NC contacts	<b>EEx 335 4V7H 2Ö</b> 







Ex command devices

Thermoplastic enclosure  
// EEx 14 range  
as of page 66

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EEx 14 RUV



# Ex command devices

## Range of application

Ex command devices are used, for instance, as inspection control and electrical emergency operation devices, as well as shaft control devices for manual command of a lift during maintenance.

Push-button, semi-rotary, key-operated and emergency-stop versions are available. The emergency stop pushbuttons are integrated within the safety circuits of machines and plants. They fulfil the requirements of EN 60204-1.

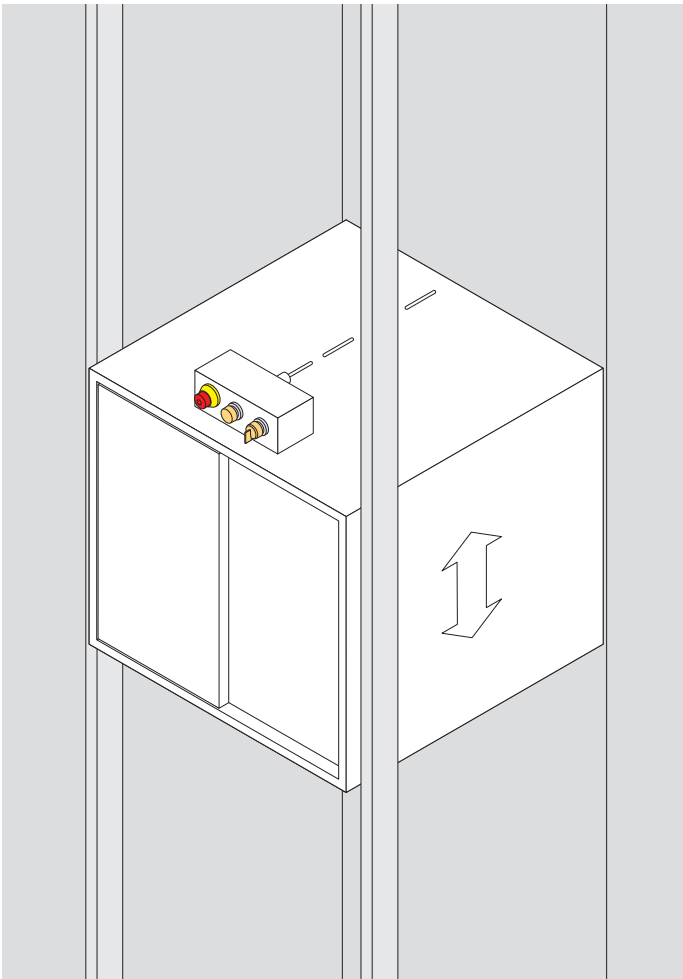
## Design and mode of operation

Our explosion-proof command devices fit in  $\varnothing$  22.5 mm mounting holes and are suitable for spacings of 30 mm between centres. All Ex command devices provide protection class IP 65, and the devices are doubly insulated to protection class II. The actuator is connected by a bayonet fastener to the EEx 14 switch. Switching elements are available with slow action: emergency stop pushbuttons, pushbuttons with and without a diaphragm, selectors and key actuators

The Ex command devices presented in this section have the CE marking as per Directive ATEX 94/9/EC from the certified Testing Laboratory EXAM, identification number 0158.

## Application

As an inspection control device on lift cabins





# Ex command devices

## // EEx 14 range

### Features/Options

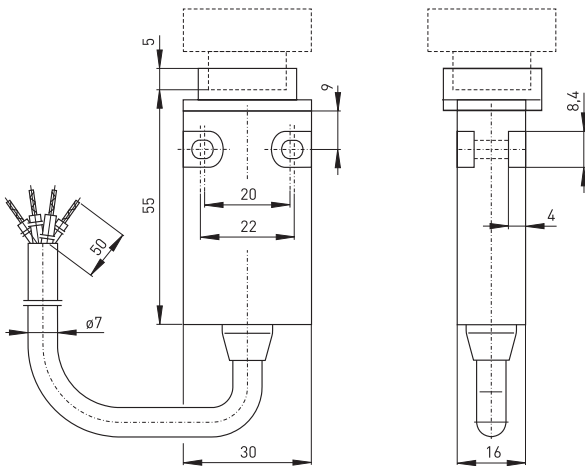
- Thermoplastic enclosure
- Double insulation ☐
- Slow action ⊖, changeover contact or 2 NC contacts with double break
- Available with overlapping contacts
- For Ø 22.5 mm mounting holes
- Pre-wired cable, cable length 1 metre
- Version for equipment category 3D, Dust-Ex zone 22 available

// EEX 14



### Technical data

<b>Standards</b>	IEC/EN 60947-5-1; EN 1088; EN 50014; EN 50018; EN 50281-1-1
<b>Enclosure</b>	glass-fibre reinforced, shock-resistant thermoplastic, auto-extinguishing UL 94-V0
<b>Switch insert</b>	-
<b>Protection class</b>	IP 65 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	slow action, NC contact with positive break ⊖
<b>Switching elements</b>	double-break changeover contact, galvanically separated contact bridges
<b>Termination</b>	pre-wired cable H05VV-F
<b>Cable section</b>	4 x 0.75mm <sup>2</sup>
<b>U<sub>imp</sub></b>	4 kV
<b>U<sub>i</sub></b>	250 V
<b>I<sub>the</sub></b>	6 A;
<b>I<sub>e</sub>/U<sub>e</sub></b>	6 A/250 VAC; 0,25 A/230 VDC
<b>Utilisation category</b>	AC-15, DC-13
<b>Max. fuse rating</b>	6 A gL/gG D-fuse
<b>Umgeb.temperatur</b>	-20 °C ... +65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Switching frequency</b>	1800/h
<b>Ex-marking</b>	⊕ II 2G EEx d IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	PTB 03 ATEX 1070 X
<b>Note</b>	protect switch against mechanical damage!



### Ordering details

EEx 14 RUV 10/1S-s-1m-3D

Equipment category  
3D, Dust-Ex zone 22  
Cable length 1 m,  
(2 m, 5 m, 10 m)  
Pre-wired cable on side  
Contact type 1NC/1NO (20 only  
with RUV)  
Actuator RUV (RT, RSSA, RW, etc. ...)  
Range  
Ex-certified device

# Ex command devices

## // EEx 14 range, actuator

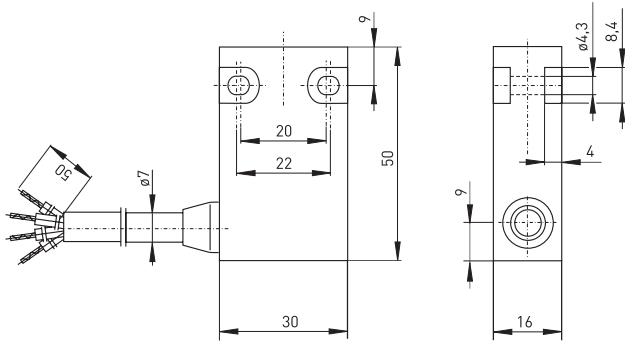
### Features/Options

- Slow action mit 2 NC contacts available
- Gold-plated contacts available on request
- Available with high-grade steel actuators as push-button, selector, control switch or key actuator

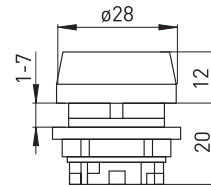
### Features/Options

- Pre-wired cable, cable length 1 metre
- Protection class IP 65
- Available with high-grade steel actuator

### // Pre-wired cable on side



### // Pushbutton RT



Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	EEx 14 RT



# Ex command devices

## // EEx 14 range, actuator

### Features/Options

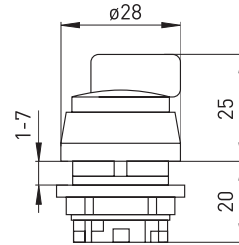
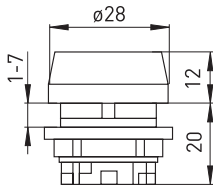
- Diaphragm of transparent silicon material
- IP 67 for actuator with diaphragm
- Pre-wired cable, cable length 1 metre
- Available with high-grade steel actuator

### Features/Options

- Selector with rest positions
- 3 different versions available
- Protection class IP 65
- Pre-wired cable, cable length 1 metre
- Available with high-grade steel actuator

## // Pushbutton with diaphragm RTM

## // Selector RW



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### Contact variants: Switch travel/contacts

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 14 RTM</b> 

	Slow action
1 NC/1 NO contact	<b>EEx 14 RW ...</b> 
2 Switching positions Switching angle 90° 0 - I or I - II	<b>EEx 14 RWA 0 - I</b> <b>EEx 14 RWA I - II</b> 
3 switching positions Switching angle -45° + 45° I - 0 - II	<b>EEx 14 RWB I - 0 - II</b> 
Key-operated selector switch, Left-hand side switching, right-hand side stroke Switching angle -45° + 45° I - 0 ← II	<b>EEx 14 RWC I - 0 ← II</b> 



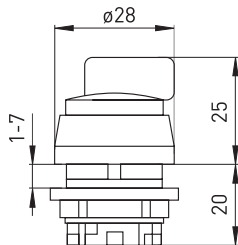
**Features/Options**

- RST control switch with spring return
- 2 different versions available
- Protection class IP 65
- Pre-wired cable, cable length 1 metre
- Available with high-grade steel actuator

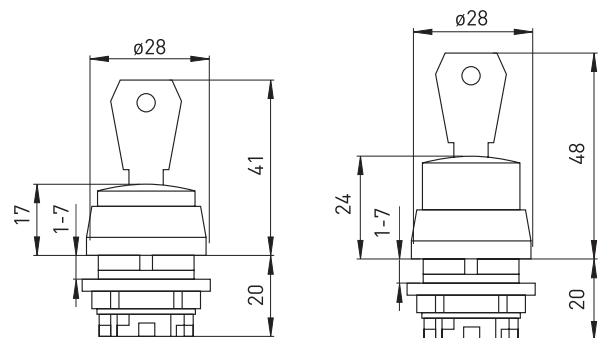
**Features/Options**

- RSSA key switch with safety cylinder lock (locks against turning)
- Normal version always has same key number
- 9 different versions available
- Up to 20 lock combinations available on request
- Protection class IP 65
- Pre-wired cable, cable length 1 metre
- Available with high-grade steel actuator

// RST control switch



// Key switch RSSA



Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<p><b>EEx 14 RST ...</b></p> <p>BK — GY BU — BN</p>
Switching angle 90° with return in left position, 0 ← I	<p><b>EEx 14 RSTA 0 ← I</b></p>
Switching angle -45° + 45° with return in centre position I → 0 ← II	<p><b>EEx 14 RSTB I → 0 ← II</b></p>

**Legend**

- I Switching position
- Spring return
- o Position for key removal

Contact variants: Switch travel/contacts

	Slow action	2 switching positions	3 switching positions
1 NC/1 NO contact	<p><b>EEx 14 RSSA ...</b></p>		
Key switch	<b>EEx 14 RSSA 14</b>		<b>EEx 14 RSSA 12</b>
	<b>EEx 14 RSSA 15</b>		<b>EEx 14 RSSA 13</b>
	<b>EEx 14 RSSA 17</b>		<b>EEx 14 RSSA 23</b>
	<b>EEx 14 RSSA 18</b>		<b>EEx 14 RSSA 24</b>
	<b>EEx 14 RSSA 27</b>		



# Ex command devices

## // EEx 14 range, actuator

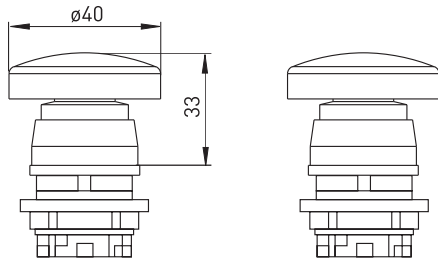
### Features/Options

- Thermoplastic actuator
- Protection class IP 65
- Pre-wired cable, cable length 1 metre

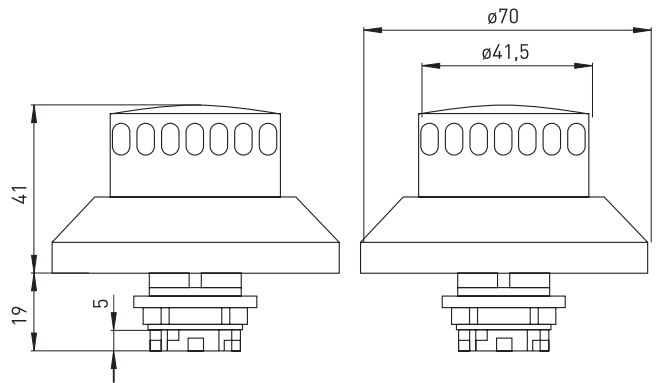
### Features/Options

- Thermoplastic actuator
- To EN 418
- 1 NC contact and 1 NO contact, double-break, type Zb
- Projection from front of panel 41 mm
- With collar to prevent blocking
- Reset by turning clockwise
- With pressure point to protect against unintentional actuation
- Protection class IP 65
- Pre-wired cable, cable length 1 metre

## // Pushbutton RS SW



## // Emergency stop pushbutton RUV



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### Contact variants: Switch travel/contacts

### Contact variants: Switch travel/contacts

	Slow action
1 NC/1 NO contact	<b>EEx 14 RS SW</b> BK — GY BU — BN
2 NC contacts	<b>EEx 14 RS SW 2Ö</b> BK — GY BU — BN

	Slow action
1 NC/1 NO contact	<b>EEx 14 RUV</b> BK — GY BU — BN
2 NC contacts	<b>EEx 14 RS RUV 2Ö</b> BK — GY BU — BN







## Ex foot switches

// EEx GF range  
as of page 76





# Ex foot switches

## Range of application

Ex foot switches are used, amongst other things, in good lifts and service elevators to open the cabin doors. Using these switches, operators do not have to lay down carried goods or materials to open the lift cabin door and load the lift cabin.

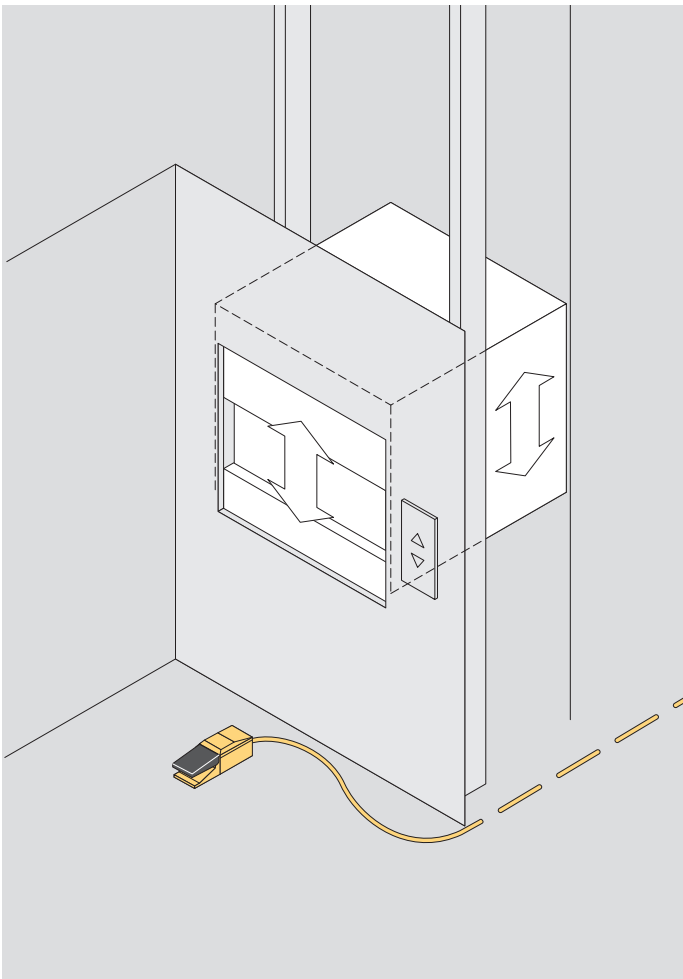
## Design and mode of operation

The Ex foot switches from the EEx GF range are available with slow or snap action. They provide protection class IP 65. Other Ex foot controls with and without protective shields can be found in our foot switches catalogue.

The Ex foot switches presented in this section have the CE marking as per Directive ATEX 94/9/EG from the certified Testing Laboratory EXAM, identification number 0158.

## Application

### Ex foot switches in service elevators



# Ex foot switches

## // EEx GF range

### Features/Options

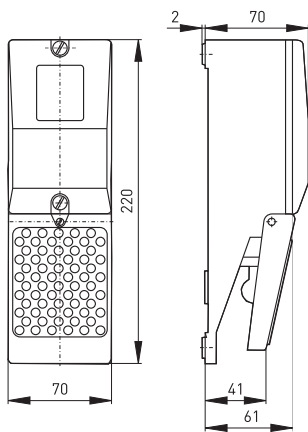
- Without protective shield, also available with protective shield
- Max. 2 contacts
- Metal enclosure
- High level of stability
- Low pedal height
- Pre-wired cable, cable length 3 metres
- Available with special finish in RAL colour tones
- Version for equipment category 3D, Dust-Ex zone 22 available

// EEX GF



### Technical data

<b>Standards</b>	IEC/EN 60947-5-1; EN 50014; EN 50018; EN 50281-1-1
<b>Enclosure</b>	aluminium die-cast, enamel finish, RAL 5011
<b>Cover</b>	glass-fibre reinforced thermoplastic
<b>Pedal</b>	glass-fibre reinforced thermoplastic
<b>Protective shield</b>	-
<b>Termination</b>	pre-wired cable H05VV-F
<b>Cable section</b>	4 x 0.75 mm <sup>2</sup> (incl. conductor ferrules)
<b>Cable length</b>	3 m
<b>Contact material</b>	silver
<b>Protection class</b>	IP 65 to EN 60529
<b>Switching system</b>	slow action with double break, positive-break NC ⊖ or snap action with single break
<b>Switch insert</b>	slow action: EEx 14 snap action: EExM 14
<b>Utilisation category</b>	AC-15; DC-13
<b>I<sub>e</sub>/U<sub>e</sub></b>	slow action: 6 A/250 VAC; 0,25 A/230 VDC snap action: 5 A/250 VAC; 0,25 A/230 VDC
<b>Max. fuse rating</b>	slow action: 6 A gL/gG D-fuse snap action: 5 A gL/gG D-fuse
<b>Ambient temperature</b>	- 20 °C ... + 65 °C
<b>Mechanical life</b>	> 1 million operations
<b>Ex-marking</b>	⊕ II 2G EEx d IIC T6, II 2D IP65 T80°C
<b>Approvals</b>	EEx GF: PTB 03 ATEX 1070 X; EExM GF: PTB 03 ATEX 1069 X, referring to the switch insert



### Contact variants: Switch travel/contacts

	Snap action	Slow action
1 NC/1 NO contact	EEx GFM BN GY BK	EEx GF 10/1S BN 11 12 BU BK 23 24 GY

### Ordering details

EEx GFM K 10/1S-3D

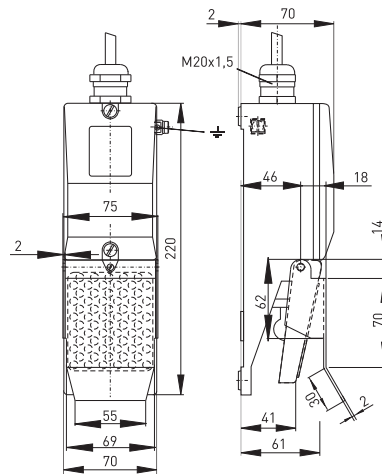
- Equipment category 3D, Dust-Ex zone 22
- 1 NC contact/1 NO contact
- Pedal cover
- M snap action (without M: slow action)
- Range
- Ex-certified device

Ex foot switches  
// EEx GF range, variants

// Pedal cover K



// Pedal cover K





## Ex magnetic sensors

// EEx RC 15 range

as of page 82

// EEx RC 13,5 range

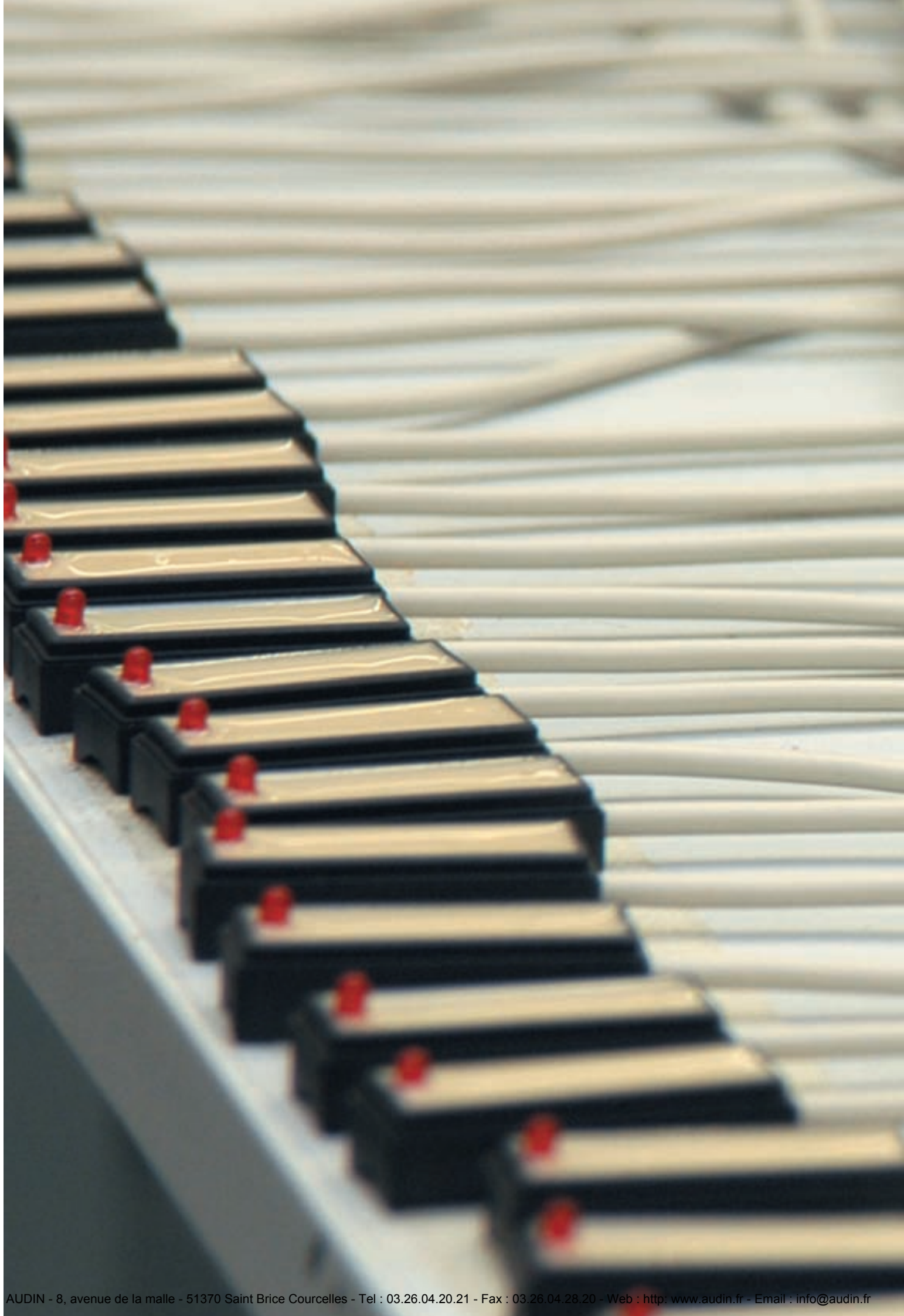
as of page 83

// EEx RC M20 range

as of page 84



EEx RC M20



# Ex magnetic sensors

## Range of application

Ex magnetic sensors are suitable for positioning and controlling lift cabins in the lift industry.

They are generally used as an alternative to mechanically operated limit switches in cases where unfavourable operating conditions, such as high or low actuating speeds, large switching frequencies, extreme dirt or dust production, high humidity, chemical atmospheres, highly fluctuating actuating distances, etc., occur. Even in the presence of aggressive materials, safe switching is ensured through the encapsulation of the contacts.

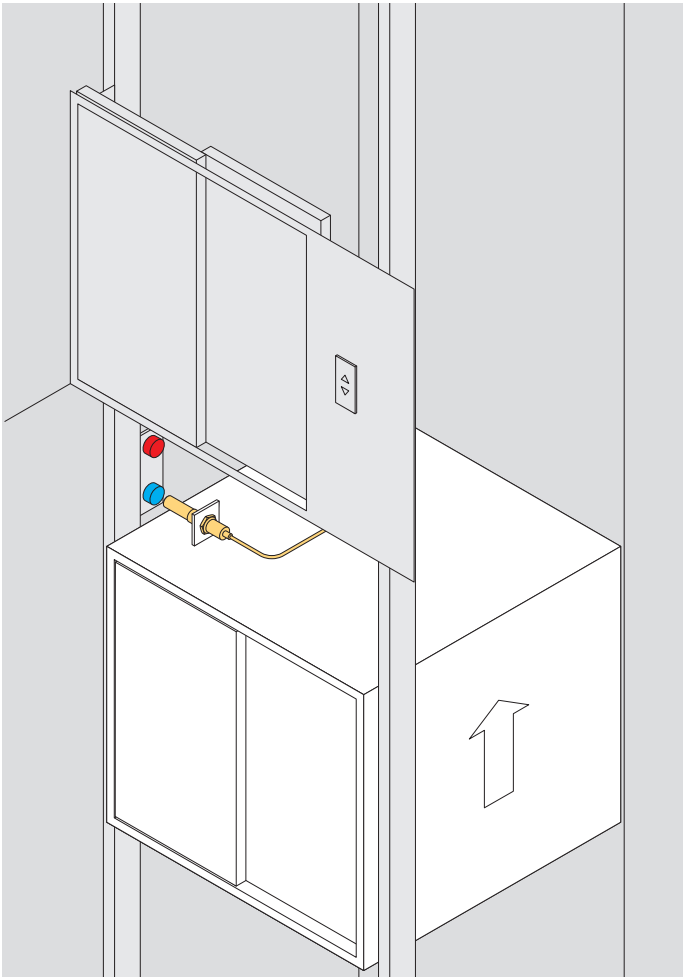
## Design and mode of operation

The Ex magnetic sensors are actuated by an M range permanent magnet, entering their proximity without any physical contact. These devices are available with NO, NC, changeover, bistable or bistable changeover contacts. All magnetic sensors described in this section are supplied with pre-wired cables. When using Ex magnetic sensors, care must be taken that their mounting site is free of magnetic fields.

The Ex magnetic sensors presented in this section have the CE marking as per Directive ATEX 94/9/EC from the certified Testing Laboratory EXAM, identification number 0158.

## Application

Ex magnetic sensors in the lift shaft at the entrance to the floor





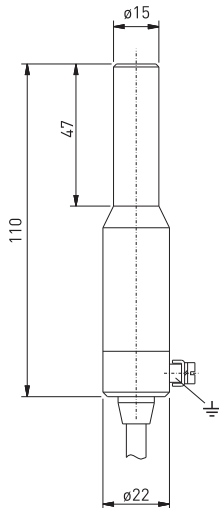
# Ex magnetic sensors

## // EEx RC 15 range

### Features/Options

- Nickel-plated brass enclosure
- Long life
- 1 magnetic reed contact
- Actuation from front
- Switching distance up to 25 mm, depending on the actuating magnets
- With pre-wired cable, cable length 1 metre
- Version for equipment category 3D, Dust-Ex zone 22 available

## // EEX RC 15



## Technical data

<b>Standards</b>	EN 50014; EN 50018; EN 50281-1-1
<b>Enclosure</b>	nickel-plated brass
<b>Actuator</b>	magnet range M
<b>Protection class</b>	IP 67 to EN 60529
<b>Contact material</b>	silver
<b>Switching system</b>	magnetic reed contact
<b>Switching elements</b>	NC, NO or changeover contact
<b>Termination</b>	pre-wired cable, H05VV-F or MNZ 45 MC
<b>Cable section</b>	1NO: 3 x 0.75 mm <sup>2</sup> , 1NC, 1CO: 4 x 0.75 mm <sup>2</sup>
<b>Cable length</b>	1, 2 and 5 m
<b>Switching voltage</b>	250 V
<b>Switching current</b>	1.5 A
<b>Switching capacity</b>	1NC, 1CO: max.50 VA/W, 1NO: max.100 VA/W
<b>Utilisation category</b>	AC-15, DC-13
<b>Bounce duration</b>	0.3 ... 0.6 ms
<b>Ambient temperature</b>	-20 °C ... +70 °C
<b>Mechanical life</b>	> 1 million operations
<b>Electrical life</b>	10 <sup>6</sup> ... 10 <sup>9</sup> operations
<b>Switching time »Close«</b>	3.5 ... 4.5 ms
<b>Switching time »Open«</b>	0.2 ... 2.5 ms
<b>Resistance to vibrations</b>	1NO: 50 ... 100 g, 1NC, 1CO: 10 ... 50 g
<b>Ex-marking</b>	⊕ II 2G EEx m IIC T6, II 2D IP67 T80°C
<b>Approvals</b>	DMT 01 ATEX E 058 X

### Contact variants: Switch travel/contacts

	Actuation from front
1 NC contact	<b>EEx RC 15 1Ö</b> BU — BN
1 NO contact	<b>EEx RC 15 1S</b> BU — BN
1 Changeover contact	<b>EEx RC 15 1W</b> BN — BK BU

### Ordering details

<b>EEx RC 15 1W-3D</b>	Equipment category 3D, Dust-Ex zone 22
	1 Changeover contact, (1S, 1Ö)
	Housing diameter 15 mm
	Range
	Ex-certified device

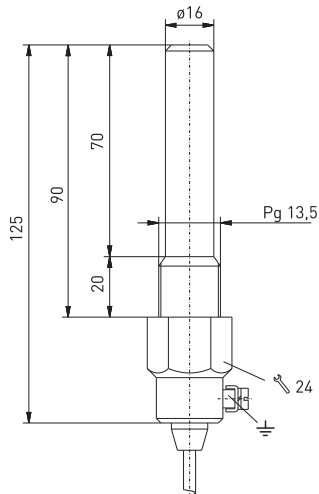
# Ex magnetic sensors

## // EEx RC 13.5 range

### Features/Options

- Nickel-plated brass enclosure
- Long life
- 1 magnetic reed contact
- Actuation from front
- Switching distance up to 30 mm, depending on the actuating magnets
- With pre-wired cable, cable length 1 metre
- Version for equipment category 3D, Dust-Ex zone 22 available

## // EEX RC 13,5



## Technical data

Standards	EN 50014; EN 50018; EN 50281-1-1
Enclosure	nickel-plated brass
Actuator	magnet range M
Protection class	IP 67 gem. EN 60529
Contact material	silver
Switching system	magnetic reed contact
Switching elements	NC, NO or changeover contact
Anschlussart	pre-wired cable, H05VV-F oder MNZ 45 MC
Cable section	1NO: 3 x 0.75 mm <sup>2</sup> , 1NC, 1CO: 4 x 0.75 mm <sup>2</sup>
Cable length	1, 2 and 5 m
Switching voltage	250 V
Switching current	1,5 A
Switching capacity	1NC, 1CO: max.50 VA/W, 1NO: max.100 VA/W
Utilisation category	AC-15, DC-13
Bounce duration	0.3 ... 0.6 ms
Ambient temperature	-20 °C ... +70 °C
Mechanical life	> 1 million operations
Electrical life	10 <sup>6</sup> ... 10 <sup>9</sup> operations
Switching time »Close«	3.5 ... 4.5 ms
Switching time »Open«	0.2 ... 2.5 ms
Resistance to vibrations	1NO: 50 ... 100 g, 1NC, 1CO: 10 ... 50 g
Ex-marking	Ⓢ II 2G EEx m IIC T6, II 2D IP67 T80°C
Approvals	DMT 01 ATEX E 058 X

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### Contact variants: Switch travel/contacts

	Actuation from front
1 NC contact	EEx RC 13,5 1Ö BU  BN
1 NO contact	EEx RC 13,5 1S BU  BN
1 Changeover contact	EEx RC 13,5 1W BN  BK BU

### Ordering details

EEx	RC	13,5	1W-3D
			Equipment category 3D, Dust-Ex zone 22
			1 Changeover contact, (1S, 1Ö)
			Housing diameter Pg 13,5
			Range
			Ex-certified device

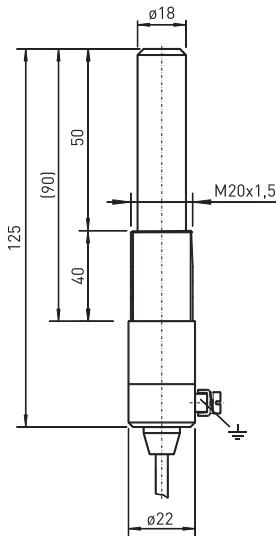
# Ex magnetic sensors

## // EEx RC M20 range

### Features/Options

- Nickel-plated brass enclosure
- Long life
- 1 magnetic reed contact
- Actuation from front, actuation from side only for bistable contacts
- Switching distance up to 30 mm depending on the actuating magnets
- With pre-wired cable, cable length 1 metre
- Available in high-grade steel
- Version for equipment category 3D, Dust-Ex zone 22 available

## // EEX RC M20



### Technical data

Standards	EN 50014; EN 50018; EN 50281-1-1
Enclosure	nickel-plated brass
Actuator	magnet range M
Protection class	IP 67 to EN 60529
Contact material	silver
Switching system	magnetic reed contact
Switching elements	NC, NO or changeover contact
Termination	pre-wired cable, H05VV-F oder MNZ 45 MC
Cable section	1NO:3 x 0.75 mm <sup>2</sup> , 1Ö, 1CO:4 x 0.75 mm <sup>2</sup>
Cable length	1, 2 and 5 m
Switching voltage	250 V
Switching current	1.5 A
Switching capacity	1NC, 1CO:max.50 VA/W, 1NO:max.100 VA/W
Utilisation category	AC-15, DC-13
Bounce duration	0.3 ... 0.6 ms
Ambient temperature	-20 °C ... +70 °C
Mechanical life	> 1 million operations
Electrical life	10 <sup>6</sup> ... 10 <sup>7</sup> operations
Switching time »Close«	3.5 ... 4.5 ms
Switching time »Open«	0.2 ... 2.5 ms
Resistance to vibrations	1NO: 50 ... 100 g, 1NC, 1CO: 10 ... 50 g
Ex-marking	⊕ II 2G EEx m IIC T6, II 2D IP67 T80°C
Approvals	DMT 01 ATEX E 058 X

### Contact variants: Switch travel/contacts

	actuation from front	actuation from side
1 NO contact	<b>EEx RC M20 1S</b> BU  BN	
1 bistable contact	<b>EEx RC M20 1Sr</b> BU  BN	<b>EEx RC M20 1Sr</b> BU  BN
1 Changeover contact	<b>EEx RC M20 1W</b> BN  BK BU	
1 bistable changeover contact	<b>EEx RC M20 1Wr</b> BN  BK BU	<b>EEx RC M20 1Wr</b> BN  BK BU

### Ordering details

<b>EEx RC M20 1W-3D</b>	Equipment category 3D, Dust-Ex zone 22
	1 Changeover contact, (1S, 1Ö, 1Sr, 1Wr)
	Housing diameter M20 x 1,5
	Range
	Ex-certified device

# Ex magnetic sensors

## // Actuator

### Features/Options

M 50 U, M 100 U, M 200 U

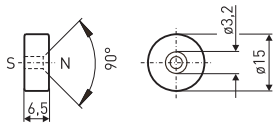
- Unenclosed
- Barium ferrite
- Ambient temperature: -20 °C ... ++80 °C

### Features/Options

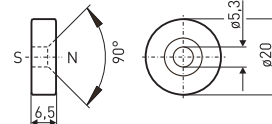
M 100 S, M 100 N, M 200 S, M 200 N

- Thermoplastic enclosure, blue S or red N
- Barium ferrite
- Ambient temperature: -20 °C ... ++80 °C

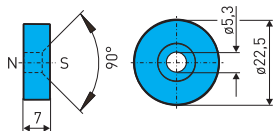
## // Actuator M 50 U



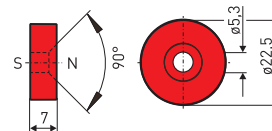
## // Actuator M 100 U



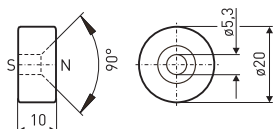
## // Actuator M 100 S



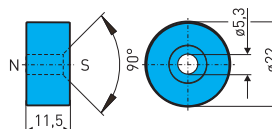
## // Actuator M 100 N



## // Actuator M 200 U



## // Actuator M 200 S



# Ex magnetic sensors

## // Actuator

### Features/Options

M 300 U, M 400 U

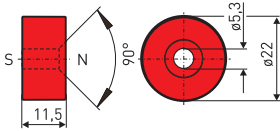
- Unenclosed
- M 300 U: colour coding of the north pole (red point)
- Barium ferrite
- Ambient temperature: -20 °C ... +80 °C

### Features/Options

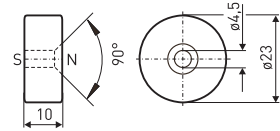
M 100 S, M 100 N, M 200 S, M 200 N

- Thermoplastic enclosure, blue S or red N
- Barium ferrite
- Ambient temperature: -20 °C ... +80 °C

## // Actuator M 200 N

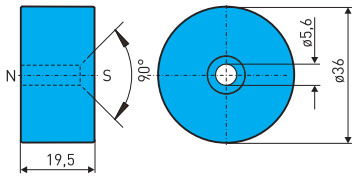


## // Actuator M 300 U

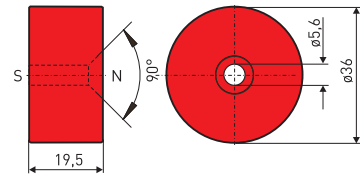


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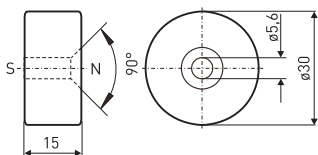
## // Actuator M 300 S



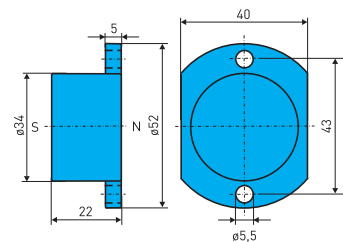
## // Actuator M 300 N



## // Actuator M 400



## // Actuator M 700 S



# Ex magnetic sensors

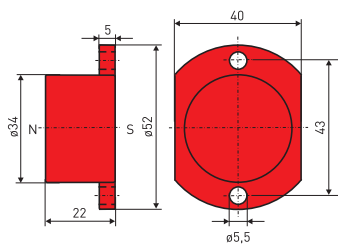
## // Actuator

### Features/Options

#### M 700 N

- Thermoplastic enclosure, red N
- Barium ferrite
- Ambient temperature: -20 °C ... +80 °C

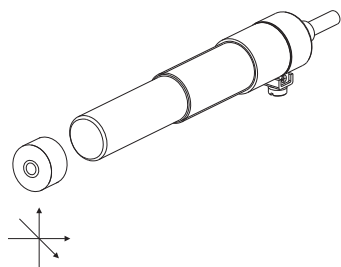
## // Actuator M 700 N



# Ex switchgear

## // Ex magnetic sensors, switching distances

### // Actuation from front



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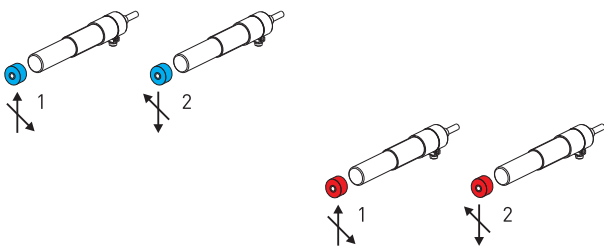
#### Actuating magnet for actuation from front

Part number	EEx RC 15 1Ö EEx RC 13,5 1Ö	EEx RC 15 1S EEx RC 13,5 1S	EEx RC 15 1W EEx RC 13,5 1W EEx RC M20 1W
Contact travel			
Contacts	1 NC contact	1 NO contact	1 Changeover contact
Actuating type	N or S	N or S	N or S
Actuating magnet	switching distance [mm] on    off	switching distance [mm] on    off	switching distance [mm] on    off
M 50 U	4    7	-    -	4    7
M 100	10   13	3    11	10   13
M 100 U	10   13	3    11	10   13
M 200	13   16	7    17	13   16
M 200 U	13   16	7    17	13   16
M 300	17   20	10   24	17   20
M 300 U	17   20	10   24	17   20
M 400 U	33   37	28   43	33   37
M 700	30   35	25   40	30   35

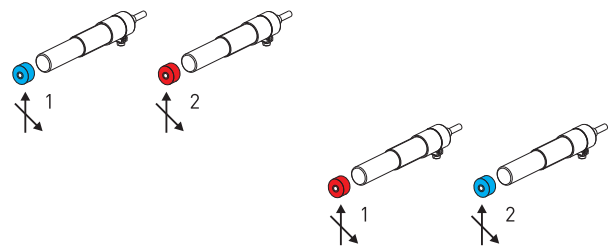
# Ex switchgear

## // Ex magnetic sensors, switching distances

### // Actuation from front



### // Actuation from front



#### Actuating magnet for actuation from front of bistable contacts

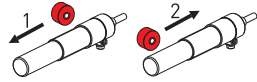
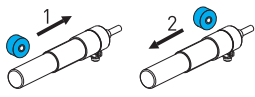
Part number	EEx RC M20 1S-R		EEx RC M20 1W-R	
	on	off	on	off
Contact travel				
Contacts	1 changeover		1 bistable changeover contact	
Actuation type	N/S		N/S	
Actuating magnet	switching distance [mm]		switching distance [mm]	
M 50 U	12	6	-	-
M 100	22	12	20	40
M 100 U	22	12	20	40
M 200	30	30	25	50
M 200 U	30	30	25	50
M 300	37	23	30	60
M 300 U	37	23	30	60
M 400 U	63	43	50	90
M 700	60	40	50	75



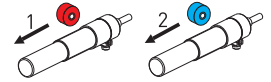
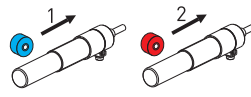
# Ex switchgear

## // Ex magnetic sensors, switching distances

### // Actuation from side



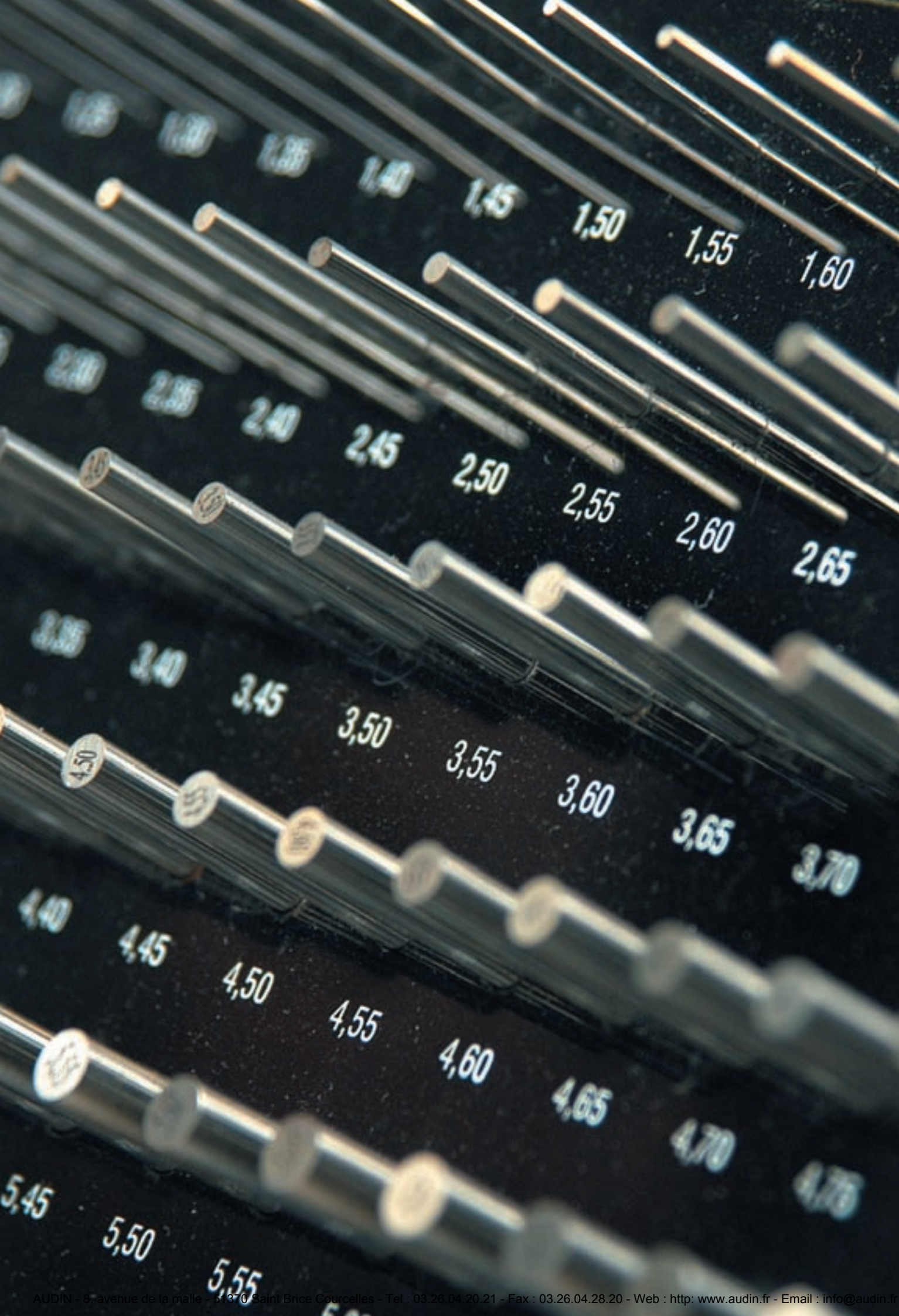
### // Actuation from side



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#### Actuating magnet for actuation from side of bistable contacts

Part number	EEx RC M20 1S-R		EEx RC M20 1W-R	
Contact travel				
Contacts	1 bistable		1 bistable changeover contact	
Actuation type	N or S		N or S	
Actuating magnet	switching distance [mm] on    off		switching distance [mm] on    off	
M 50 U	-	-	-	-
M 100	-	-	15	20
M 100 U	-	-	15	20
M 200	-	-	20	25
M 200 U	-	-	20	25
M 300	-	-	25	30
M 300 U	-	-	25	30
M 400 U	-	-	30	35
M 700	-	-	40	50







## Ex inductive sensors

// EEx IS range

as of page 96

// Relay module EEx RM 1W 1

as of page 99



# Ex inductive sensors

## Range of application

Ex inductive sensors are suitable for positioning and controlling of lift cabins in the lift industry.

They are generally used as an alternative to mechanically operated limit switches in cases where unfavourable operating conditions, such as high or low actuating speeds, large switching frequencies, extreme dirt or dust production, high humidity, chemical atmospheres, highly fluctuating actuating distances, etc., occur. Even in the presence of aggressive materials, safe switching is ensured through the encapsulation of the contacts.

## Design and mode of operation

The namur sensor changes its current consumption or its internal resistance with the approach of metal to the sensor surface. There are variants for flush and non-flush mounting. The protection class IP 67 even permits safe application under rough ambient conditions.

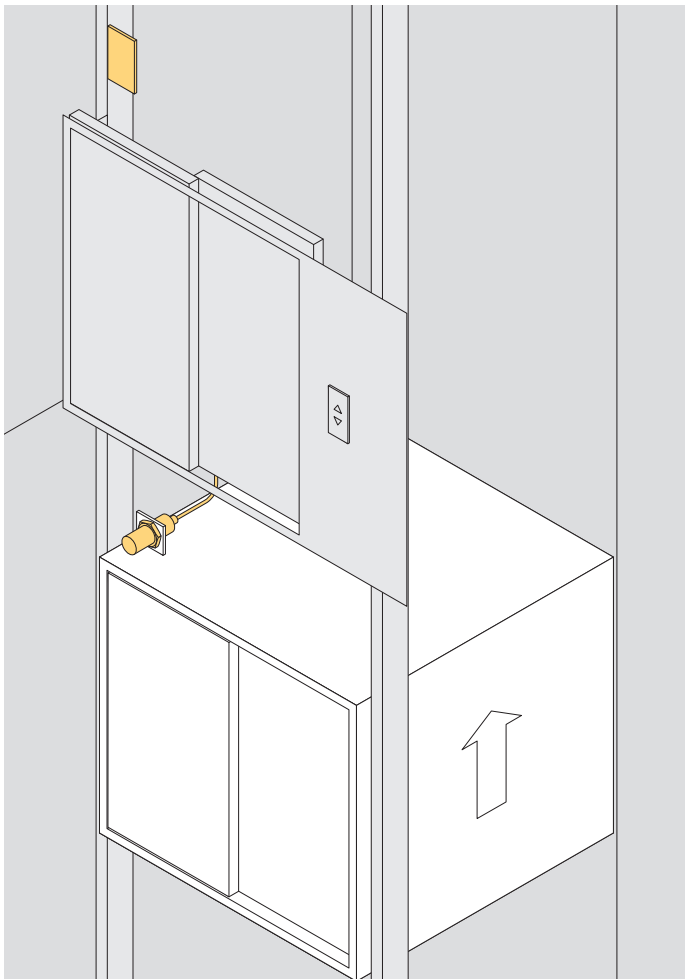
The EEx IS M12/M18/M30 range is offered as a complete system with a relay module, which is available in two variants for 24 VDC and 230 VAC operating voltages. The relay module, which is suitable for cabinet mounting, supplies the required intrinsic power for the sensor and transmits the sensor signal. The function of the input circuit can be programmed as NO or NC contact.

The LEDs of the EEx RM 1W 1 relay module indicate the operational condition of the sensor, as well as possible malfunctions such as wire breakages and short-circuits.

The Ex inductive sensors presented in this section have the CE marking as per Directive ATEX 94/9/EC from the certified Testing Laboratory TÜV Hannover/Sachsen-Anhalt, identification number 0032.

## Application

### Ex inductive sensors in the lift shaft at the entrance to the floor



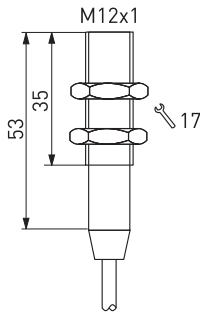
# Ex inductive sensors

## // EEx IS range

### Features/Options

- Metal enclosure
- Variants for flush or non-flush mounting
- Long life, no mechanical wear
- Suitable for the food processing industry
- Insensitive to soiling
- Housing diameter M12x1, M18x1, M 30x1.5
- Version for equipment category 3D, Dust-Ex zone 22 available

### // EEX IS M12 B



### Technical data

<b>Standards</b>	IEC/EN 60947-5-2
<b>Enclosure</b>	brass-nickel, PA
<b>Nuts</b>	2, brass-nickel
<b>Switching system</b>	Namur to DIN EN 60947-5-6
<b>Termination</b>	2 m pre-wired cable PVC 2 x 0.5 mm <sup>2</sup>
<b>Protection class</b>	IP 67
<b>Switching distance <math>s_n</math></b>	EEx IS M12 b: 2 mm, EEx IS M12 nb: 4 mm EEx IS M18 b: 5 mm, EEx IS M12 nb: 8 mm EEx IS M30 b: 10 mm, EEx IS M30 nb: 15 mm
<b>Switching distance in %</b>	steel St 37: 100 %, stainless steel: 70 %, brass: 50 %, copper: 45 %, aluminium: 40 %
<b>Input power <math>P_i</math></b>	max. 50 mW
<b>Input voltage <math>U_i</math></b>	max. 12.6 VDC
<b>Input current <math>I_i</math></b>	max. 15.9 mA
<b>Tightening torque for the nuts</b>	M12x1: 10 Nm, M18x1: 36 Nm, M30x1.5: 100 Nm
<b>Ambient temperature</b>	-25°C ... +75°C
<b>Ex-marking</b>	⊕ II 1G EEx ia IIC T6, II 1D IP67 T100°C
<b>Approvals</b>	TÜV 03 ATEX 2036

### Ordering details

**EEx IS M12 nb-3D**

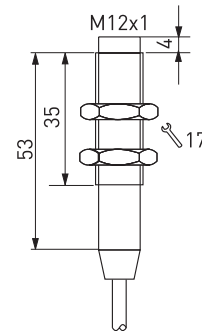
Equipment category 3D,  
Dust-Ex zone 22  
Non-flush mounting, (b flush  
mounting)  
Housing diameter M12  
Range  
Ex-certified device

Ex inductive sensors  
// EEx IS range, variants

// EEX IS M12 NB



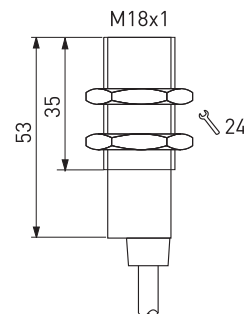
// EEX IS M12 NB



// EEX IS M18 B



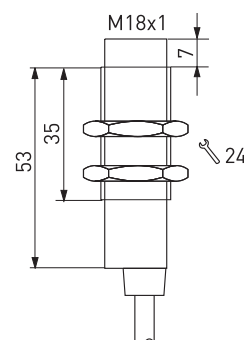
// EEX IS M18 B



// EEX IS M18 NB



// EEX IS M18 NB



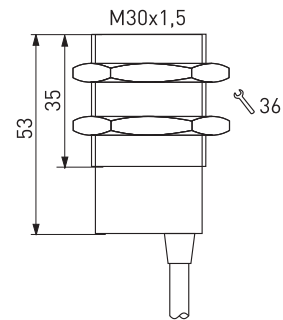


Ex inductive sensors  
// EEx IS range, variants

// EEX IS M30 B



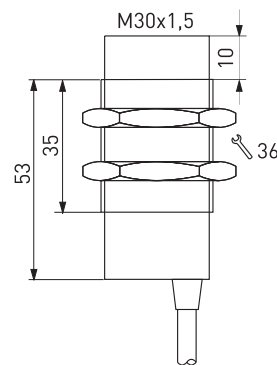
// EEX IS M30 B



// EEX IS M30 NB



// EEX IS M30 NB



# Ex relay module

## // EEx RM 1W 1 range

### Features/Options

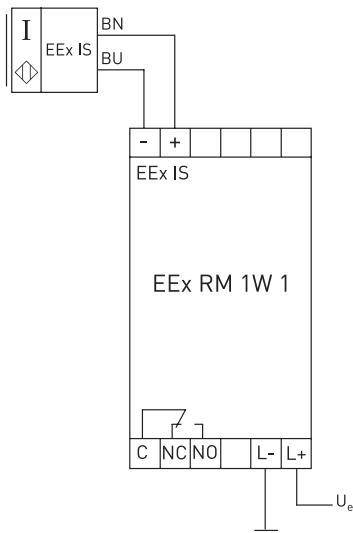
- Thermoplastic enclosure
- Output: relay
- 40 mm housing width
- 24 VDC or 230 VAC operating voltage



### Technical data

<b>Standards</b>	IEC/EN 60947-5-2
<b>Enclosure</b>	brass-nickel, PA
<b>Dimensions</b>	40 x 70 x 110 mm (BxHxT)
<b>Mounting DIN</b>	rail mounting to DIN EN 50022
<b>Connection</b>	screw clamps
<b>Protection class</b>	IP 20
<b>Operating voltage <math>U_e</math></b>	24 VDC $\pm 15\%$ , 230 VAC $+10/-15\%$
<b>Power consumption</b>	1.8 W, 1.5 VA
<b>Output power <math>P_o</math></b>	max. 50 mW
<b>Output voltage <math>U_o</math></b>	max. 12.6 VDC
<b>Output current <math>I_o</math></b>	max. 15.9 mA
<b>Output</b>	relay: change-over contact
<b>Switching voltage</b>	250 VAC/24 VDC
<b>Switching current</b>	4 A, $\cos \phi > 0,7$
<b>Display</b>	LEDs, red: cable breakage and short circuit yellow: relay energised green: operating voltage
<b>Ambient temperature</b>	-20°C ... +60°C
<b>Ex-marking</b>	⊕ II (1)GD [EEx ia] IIC
<b>Approvals</b>	TÜV 97 ATEX 1148

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SWITCHGEAR FROM STEUTE ENSURES SAFETY AT WORK, AS WELL AS HIGH PRODUCTIVITY

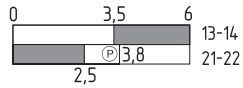


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# EXPLANATION OF SYMBOLS

$\Upsilon$	spanner size across flats
	positive break NC contact
	positive break travel/angle
	CSA/UL approval, Canada
	TÜV prototype tested
	BG prototype tested
	standard-compliant, see Declaration of Conformity
$I_e$	rated operating current
$I_{the}$	thermal test current
$U_e$	rated operating voltage
$U_i$	rated insulation voltage
$U_{imp}$	rated impulse withstand voltage

## Explanation of the switch travel diagrams



	Contact open
	Contact closed

X1-X2	NC contacts
X3-X4	NO contacts
X5-X6	overlapping contacts

## Colour code to DIN IEC 757

BK	black
BN	brown
BU	blue
GN	green
GY	grey
OG	orange
PK	pink
RD	red
TQ	turquoise
VI	violet
WH	white
YE	yellow

## NOTES

Besides Ex switchgear, steute also manufactures devices for complex and critical industrial applications – for example pull-wire switches, door handle switches, foot and safety switches. Our medical section develops and

manufactures control devices complying with the medical technology directives and standards. The product range covers standard devices for medical equipment, as well as complex, customised multifunctional switches.

steute  
Schaltgeräte GmbH & Co. KG  
Brückenstraße 91  
32584 Löhne, Germany  
Telefon + 49 (0) 57 31 745-0  
Telefax + 49 (0) 57 31 745-200  
E-mail [info@steute.com](mailto:info@steute.com)  
[www.steute.com](http://www.steute.com)