

1.
1.4 Ex switchgear
Safety switches
Safety switch for hinged guards



Application These Ex safety switches are suitable for hinged safety guards which need to be closed to ensure the necessary operational security.

The variety of requirements to be found in practice can be met by means of the wide range of safety switches for hinged guards.

Depending on the particular version of the switches, small doors and service flaps, as well as heavy hinged doors on engineering machines and plants, can be protected in such a way as to provide for easy setting up and maintenance.

Design and mode of operation A general advantage of the safety switches shown here is the integral cam within the safety switch. The requirements of EN 1088, such as positive linkage between cam and actuator, as well as protection against tampering, are thus fulfilled.

This combination within the switches provides cost advantage for the user in avoiding the necessity of mounting a specially designed cam.

These safety switches are provided with slow action.

Flap safety switches

Features EEx 95 T.C

- Mounting dimensions to EN 50047
- 2 contacts
- Thermoplastic enclosure
- Compact design
- Slow action
- Suitable for fitting outside the hinge shaft

Hinge safety switches

EEx 13 SB

- 2 contacts ⊖
- Thermoplastic enclosure
- Slow action
- Prewired cable
- Double-shaft universal joint available

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Ex switchgear
Safety switches
Safety switch for hinged guards



Hinge
safety
switches

EEx 95 SB

- Mounting dimensions to EN 50047
- 2 contacts
- Thermoplastic enclosure
- Compact design
- Slow action
- Actuating shaft is fitted in the hinge axis
- Double-shaft universal joint available

TV.S 335
TV.S 355

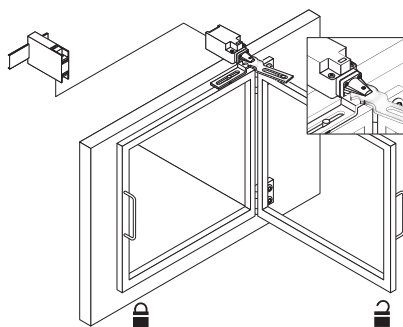
- Mounting dimensions to EN 50041
- 2 contacts
- Metal enclosure
- Compact design
- Slow action
- Actuating shaft is fitted in the hinge axis
- Ø 8 or 10 mm hole for shaft
- Double-shaft universal joint available

Note

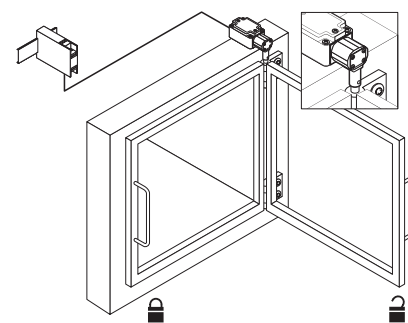
Technical data are shown in tabular form in chapter 1.4.7.

Applications

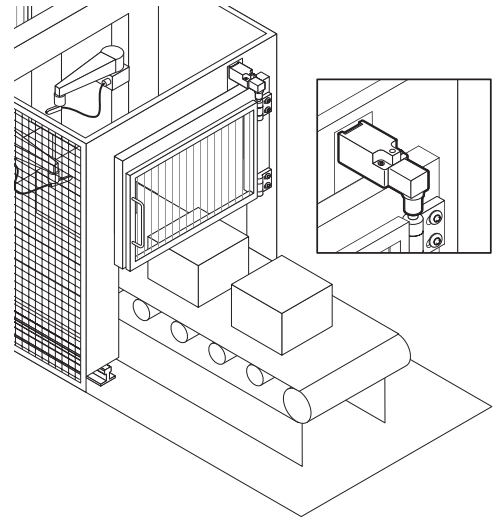
EEx 95 T.C on hinged guard



EEx 335 TV.S on hinged guard



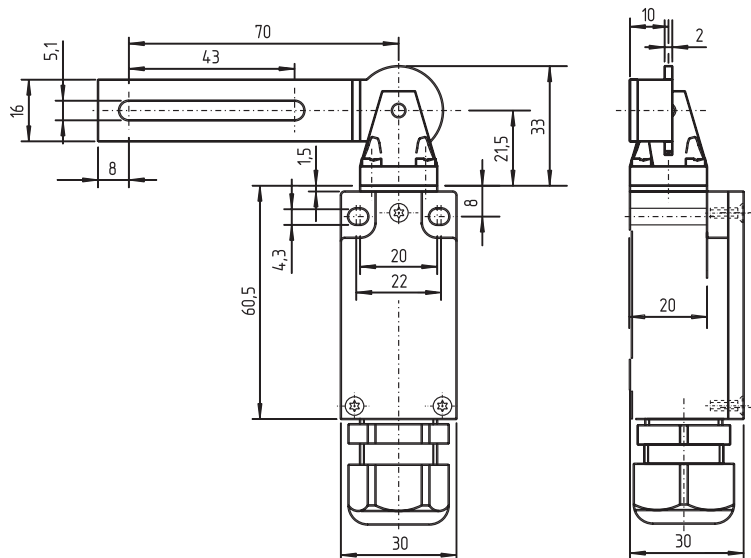
Application



1. Ex switchgear
1.4 Safety switches
1.4.1 Safety switch for hinged guards
1.4.1 EEx 95 T.C range



Right-hand version



Features

- Thermoplastic enclosure
- II 2G EEx de IIC T6
II 2D IP67 T80°C
- Actuator heads can be turned in steps 4 x 90°
- Opening angle 180°
- Stainless steel actuator

Approvals

EC Type test certificate:
DMT 01 ATEX E 118

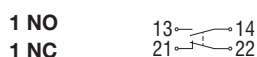
Ordering details

Flap safety switch for hinged guards, right-hand version, with 1 NO and 1 NC contact:
EEx 95 T5C 1Ö/1S

Info

Version for equipment category 3D
(dust-Ex zone 22) available
Ordering suffix: -3D

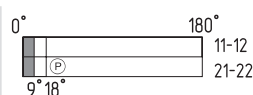
**Contacts/
Switch travel**



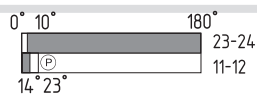
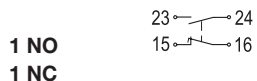
Slow action



EEx 95 T5C 1Ö/1S



EEx 95 T5C 2Ö



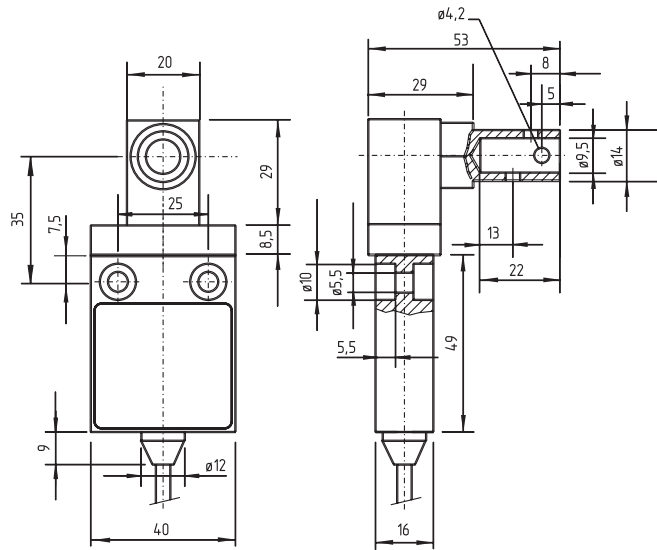
Slow action
with overlapping contacts

EEx 95 T5C UE

Notes

Closed guard device = 0° in contact switch travel diagrams.
This is the rest position of the switch.

1. Ex switchgear
1.4 Safety switches
1.4.2 Safety switch for hinged guards
EEx 13 SB range



Features

- Thermoplastic enclosure
- Prewired cable
- Double insulated □
- II 2G EEx d IIC T6
II 2D IP65 T80°C
- Actuating shaft can be turned 360°
- Bore for shaft Ø 9.5 mm

Approvals

EC Type test certificate:
PTB 03 ATEX 1068 X

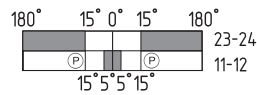
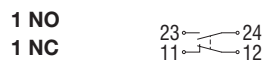
Info

- Shaft bore Ø 10 mm available, ordering suffix -10mm
- Universal joint K2 available to compensate for axial displacement

Info

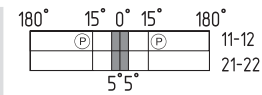
Version for equipment category 3D
(dust-Ex zone 22) available
Ordering suffix: -3D

**Contacts/
Switch travel**



Slow action

EEx 13 SB 1Ö/1S



EEx 13 SB 2Ö

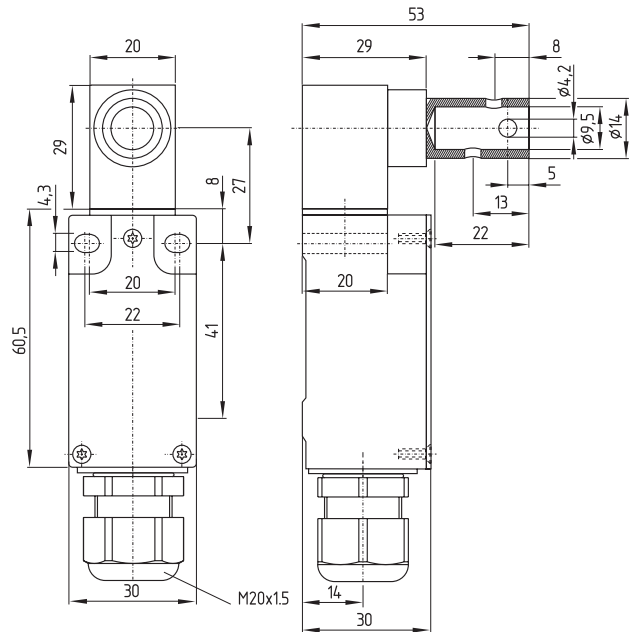
Note

Closed guard device = 0° in contact switch travel diagrams.
This is the rest position of the switch.

**Ordering
details**

Hinge safety switch for hinged guards,
2 NC contacts:
EEx 13 SB 2Ö

1. Ex switchgear
1.4 Safety switches
1.4.3 Safety switch for hinged guards
EEEx 95 SB range



Features

- Thermoplastic enclosure
- Wiring compartment
- Double insulated □
- Ⓜ II 2G EEx de IIC T6
II 2D IP67 T80°C
- Actuator head can be repositioned in steps 4 x 90°
- Actuating shaft can be turned 360°
- Bore for shaft Ø 9.5 mm
- Cable entry M20 x 1.5

Info

- Shaft bore Ø 10 mm available, ordering suffix -10mm
- Universal joint K2 available to compensate for axial displacement

Info

Version for equipment category 3D (dust-Ex zone 22) available
 Ordering suffix: -3D

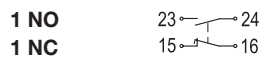
Approvals

EC Type test certificate:
 DMT 01 ATEX E 118

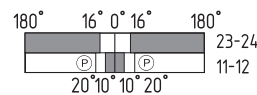
Ordering details

Hinge safety switch for hinged guards, 1 NO and 1 NC contact: EEx 95 SB 1Ö/1S

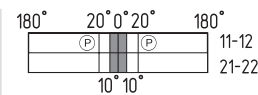
**Contacts/
Switch travel**



Slow action



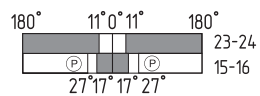
EEx 95 SB 1Ö/1S



EEx 95 SB 2Ö



Slow action
 with overlapping contacts

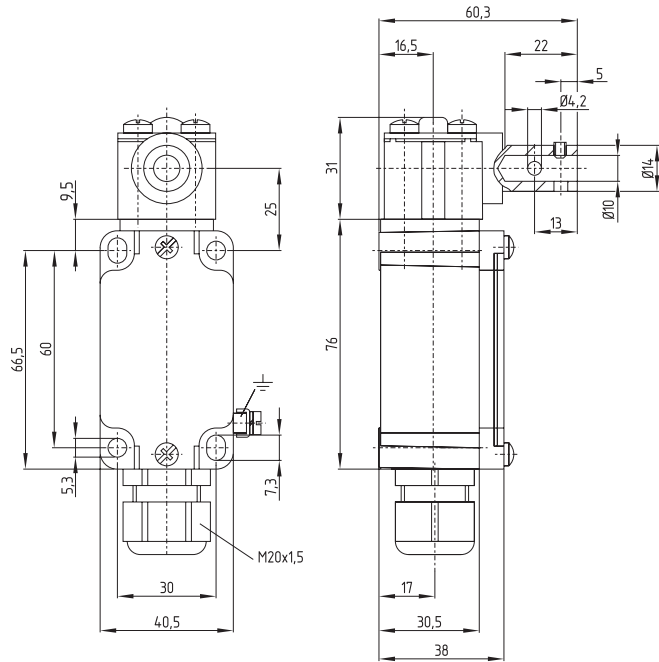


EEx 95 SB UE

Note

Closed guard device = 0° in contact switch travel diagrams.
 This is the rest position of the switch.

1. Ex switchgear
1.4 Safety switches
1.4.4 Safety switch for hinged guards
1.4.4 EEx 335 V.S range



Features

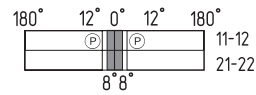
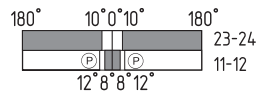
- Metal enclosure
- II 2G EEx de IIC T6 II 2D IP65 T80°C
- Actuator heads can be turned in steps 4 x 90° using Torx T 20 screwdriver with pin
- Actuating shaft can be turned 360°
- 1 cable entry

Shaft bore A Hinge pin fixing
 EEx 335 V10S : Ø 10 mm

Info Version for equipment category 3D (dust-Ex zone 22) available
 Ordering suffix: -3D

Approvals EC Type test certificate:
 DMT 01 ATEX E 178

**Contacts/
 Switch travel**



Slow action

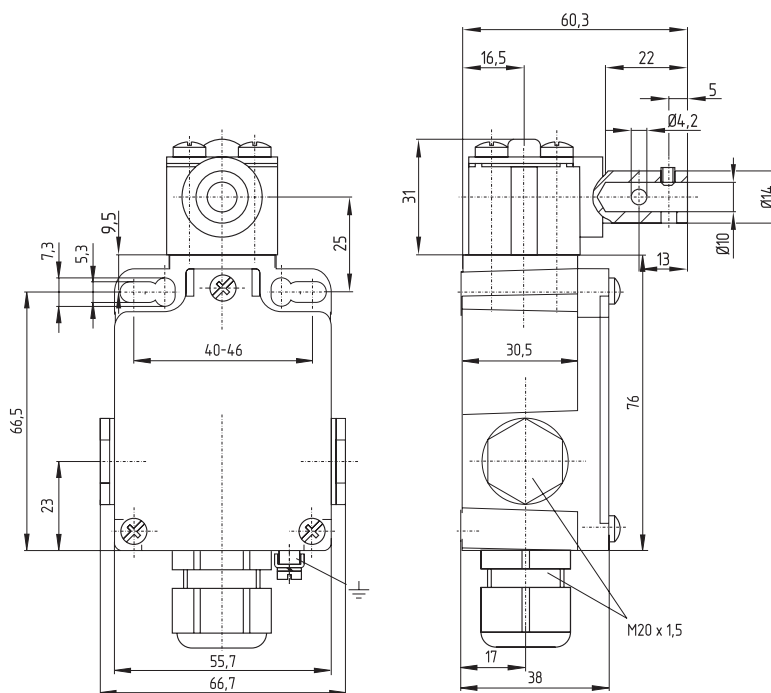
EEx 335 V10S 1Ö/1S

EEx 335 V10S 2Ö

Notes Closed guard device = 0° in contact switch travel diagrams.
 This is the rest position of the switch.

Ordering details Hinge safety switch for hinged guards,
 2 NC contacts:
EEx 335 V10S 2Ö

1. Ex switchgear
1.4 Safety switches
1.4.5 Safety switch for hinged guards
EEEx 355 V.S range



Features

- Metal enclosure
- II 2G EEx de IIC T6 II 2D IP67 T80°C
- Actuator heads can be turned in steps 4 x 90° using Torx T 20 screwdriver and pin
- Actuating shaft can be turned 360°
- 3 cable entries

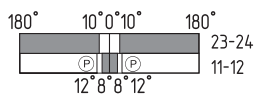
Shaft bore A Hinge pin fixing
 EEx 355 V10S: Ø 10 mm

Approvals

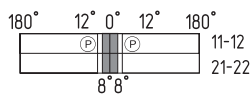
EC Type test certificate:
 BVS 04 ATEX E 126

Info
 Version for equipment category 3D
 (dust-Ex zone 22) available
 Ordering suffix: -3D

**Contacts/
 Switch travel**



EEx 355 V10S 1Ö/1S



EEx 355 V10S 2Ö

Slow action

Notes

Closed guard device = 0° in contact switch travel diagrams.
 This is the rest position of the switch.

**Ordering
 details**

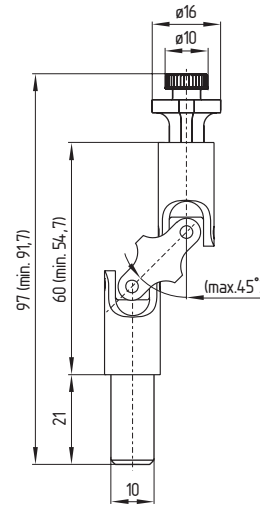
Hinge safety switch for hinged guards,
 2 NC contacts:
EEx 355 V10S 2Ö

1. Ex switchgear
 1.4 Safety switches
 1.4.6 Safety switch for hinged guards
 Accessories



Universal joint K2

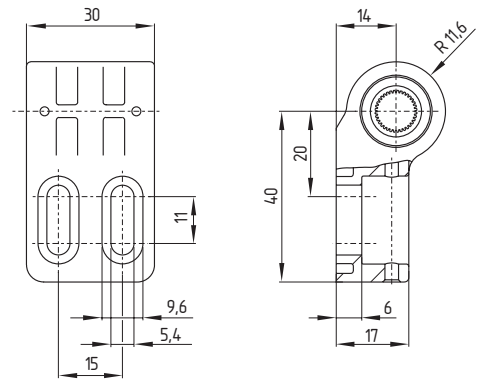
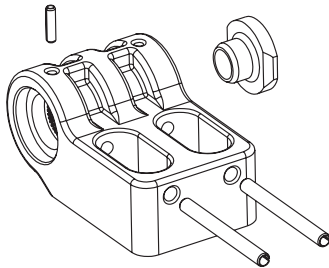
- Factory-mounted pins
- Suitable for EEx 335 V10S, EEx 95 SB-10mm and EEx 335 V10S
- Suitable only in connection with hinges F and L



Fixed hinge F

Included in delivery

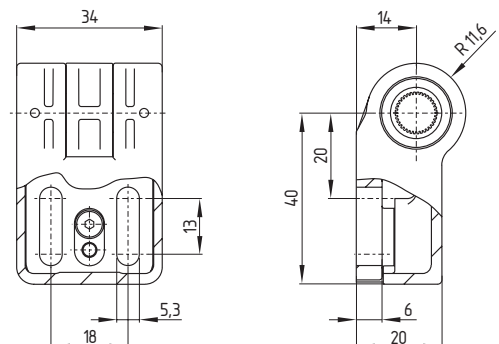
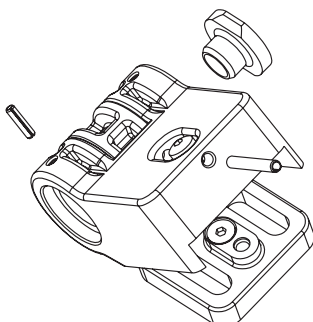
- Locating pins
- One blanking plug
- Two M 5 x 20 screws to ISO 7380



Adjustable hinge L

Included in delivery

- Locating pins
- One blanking plug
- Two M 5 x 20 screws to ISO 7380



1. Ex switchgear
1.4 Safety switches
1.4.7 Safety switch for hinged guards
1.4.7 Technical data



	EEx 95 T.C	EEx 13 SB
Standards:	IEC 60947-5-1; EN 1088; BG-GS-ET 15; EN 50014; EN 50018; EN 50281-1-1	
	EN 50019	–
Ex marking:	⊕ II 2G EEx de IIC T6 II 2D IP67 T80°C	⊕ II 2G EEx d IIC T6 II 2D IP65 T80°C
Certification:	DMT 01 ATEX E 118	PTB 03 ATEX 1068 X
Switch insert:	–	
Design:	Mountings to EN 50047	–
Enclosure:	Glass-fibre reinforced thermoplastic, self-extinguishing	
Protection class:	IP 67 to IEC/EN 60529	IP 65 to IEC/EN 60529
Contact material:	Silver	
Contact type:	Change-over contact with double break Zb or 2 NC contacts, with galvanically separated contact bridges	Change-over contact with double break Zb with galvanically separated contact bridges
Switching system:	Slow action, NC contacts with positive break ⊖	
Termination:	M3 screw terminals for max. 1.5 mm ² wire (including conductor ferrules)	cable H05VV-F4 x 0.75 mm ²
Rated impulse		
withstand voltage U _{imp} :	4 kV	
Rated insulation voltage U _i :	250 V	
Thermal test current I _{the} :	6 A	
Utilisation category:	AC-15; DC-13	
Rated operating		
current/voltage I _e /U _e :	6 A/250 VAC; 0.25 A/230 VDC	
Max. fuse rating:	6 A gL/gG D-fuse	
Ambient temperature:	–25 °C ... +60 °C	–20 °C ... +65 °C
Mechanical life:	> 1 million operations	
Switching frequency:	1800/h	
Shaft bore:	–	Ø 9.5 mm, Ø 10 mm
Positive break angle:	18°	
Positive break torque:	–	0.6 Nm



1. Ex switchgear
1.4 Safety switches
1.4.7 Safety switch for hinged guards
1.4.7 Technical data



	EEx 95 SB	EEx 335 V10S/EEx 355 V10S
Standards:	IEC 60947-5-1; EN 1088; BG-GS-ET 15; EN 50014; EN 50018; EN 50019; EN 50281-1-1	
Ex marking:	⊕ II 2G EEx de IIC T6 II 2D IP67 T80°C	⊕ II 2G EEx de IIC T6 II 2D IP65 T80°C
Certification:	DMT 01 ATEX E 118	DMT 01 ATEX E 178/BVS 04 ATEX E 126
Switch insert:	–	EEx 95
Design:	Mountings to EN 50047	Mountings to EN 50041
Enclosure:	Glass-fibre reinforced thermoplastic, self-extinguishing	Zinc die-cast, enamel finish
Protection class:	IP 67 to IEC/EN 60529	IP 65 to IEC/EN 60529/IP 67 to IEC/EN 60529
Contact material:	Silver	
Contact type:	Change-over contact with double break Zb or 1 NC or 2 NC contacts, with galvanically separated contact bridges	
Switching system:	Slow action, NC contacts with positive break ⊖	
Termination:	Screw terminals for max. 1.5 mm ² wire (including conductor ferrules)	
Rated impulse		
withstand voltage U _{imp} :	4 kV	
Rated insulation voltage U _i :	250V	
Thermal test current I _{the} :	6 A	
Utilisation category:	AC-15; DC-13	AC-15
Rated operating		
current/voltage I _e /U _e :	6 A/250 VAC; 0.25 A/230 VDC	
Max. fuse rating:	6 A gL/gG D-fuse	
Ambient temperature:	–20 °C ... +60 °C	
Mechanical life:	> 1 million operations	
Switching frequency:	1800/h	
Shaft bore:	Ø 9.5 mm, Ø 10 mm	Ø 10 mm
Positive break angle:	18°	12°
Positive break torque:	0.6 Nm	–

