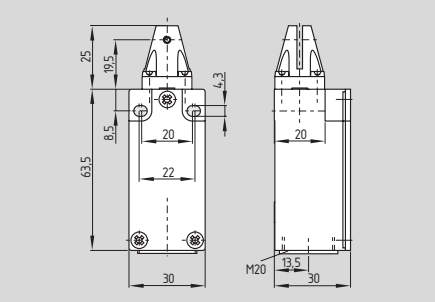
T.C 235

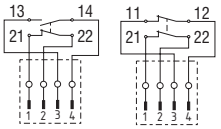


- Metal enclosure
- Versions available for left-hand (T3C 235), right-hand (T5C 235) and swing-doors (T4C 235)
- 1 cable entry M20 x 1.5
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned in steps 4 x 90°
- Opening angle 180°
- Stainless steel actuator

Technical data

Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	fixings to EN 50047
Enclosure:	light-alloy diecast, paint finish
Protection class:	IP 67 to 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:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 2.5 mm², min. 0.75 mm² (incl. conductor ferrules)
Cable entry:	1 x M20 x 1.5
U_{imp}:	6 kV connector: 0,8 kV
U_i:	500 V connector: 50 V
I_{the}:	10 A
Utilisation category:	AC-15
I_e/U_e:	4 A / 230 VAC 1 A / 24 VDC connector: 4 A / 50 V
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 30 °C … + 80 °C
Mechanical life:	> 1 million operations
Switching frequency:	max. 5000/h
Positive break angle:	12.5°
Positive break torque:	0.185 Nm

Connector



Approvals

Ordering details

T①C 235-②z-③-④

No.	Replace	Description
①	3	Left-hand version
	4	Swing-door version
	5	Right-hand version
②	01	1 NC
	02	2 NC
	11	1 NO / 1 NC
③		Cable entry M20
	ST	Connector M12 (A-Coding)
	2310	(B-Coding)
④		Actuator 78 mm
	2313	Prolonged actuator 113 mm

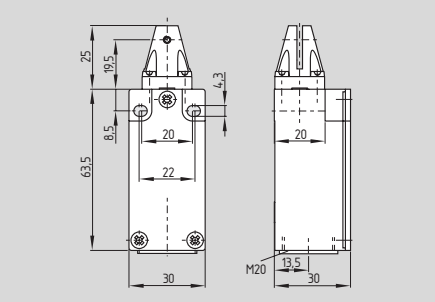
Note

Information regarding the actuators such as dimensions, switch travel and contact diagrams, etc. can be found as of page 1-68.

Note

Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.

T.C 236

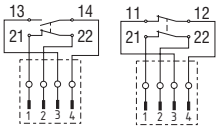


- Thermoplastic enclosure
- Versions available for left-hand (T3C 236), right-hand (T5C 236) and swing-doors (T4C 236)
- Double insulated ⧈
- 1 cable entry M20 x 1.5
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned in steps 4 x 90°
- Opening angle 180°
- Stainless steel actuator

Technical data

Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	fixings to EN 50047
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Protection class:	IP 67 to 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:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 2.5 mm², min. 0.75 mm² (incl. conductor ferrules)
Cable entry:	1 x M20 x 1.5
U_{imp}:	6 kV
U_i:	500 V
I_{the}:	10 A
Utilisation category:	AC-15
I_e/U_e:	4 A / 230 VAC 1 A / 24 VDC
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 30 °C … + 80 °C
Mechanical life:	> 1 million operations
Switching frequency:	max. 5000/h
Positive break angle:	12.5°
Positive break torque:	0.185 Nm

Connector



Approvals

Ordering details

T①C 236-②z-③-④

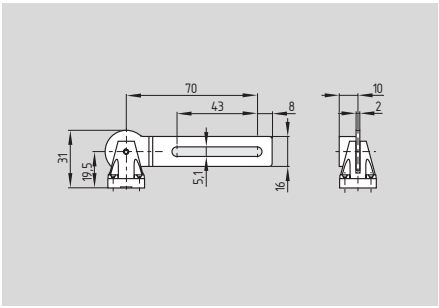
No.	Replace	Description
①	3	Left-hand version
	4	Swing-door version
	5	Right-hand version
②	01	1 NC
	02	2 NC
	11	1 NO / 1 NC
③		Cable entry M20
	ST	Connector M12 (A-Coding)
	2310	(B-Coding)
④		Actuator 78 mm
	2313	Prolonged actuator 113 mm

Note

Information regarding the actuators such as dimensions, switch travel and contact diagrams, etc. can be found as of page 1-68.

Note

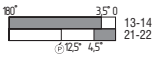
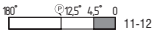
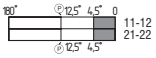
Left-hand version



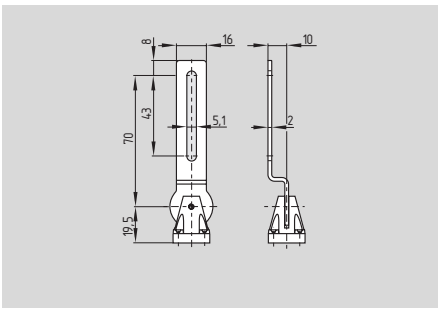
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned by 4 x 90°
- Opening angle 180°

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

Contact variants

Contacts/ Switch travel	Slow action
1 NO 1 NC	**T3C 235-11z** **T3C 236-11z** 
1 NC	**T3C 235-01z** **T3C 236-01z** 
2 NC	**T3C 235-02z** **T3C 236-02z** 

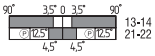
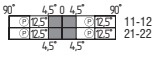
Swing-door version



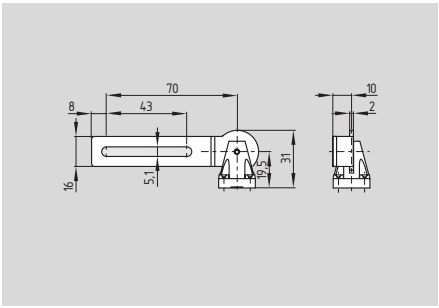
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned in steps 4 x 90°
- Opening angle 2 x 90°

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

Contact variants

Contacts/ Switch travel	Slow action
1 NO 1 NC	**T4C 235-11z** **T4C 236-11z** 
1 NC	**T4C 235-01z** **T4C 236-01z** 
2 NC	**T4C 235-02z** **T4C 236-02z** 

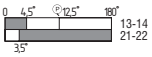
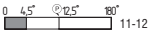
Right-hand version



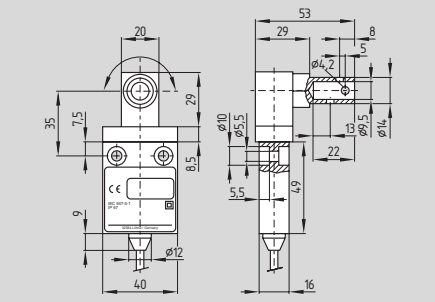
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned by 4 x 90°
- Opening angle 180°

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

Contact variants

Contacts/ Switch travel	Slow action
1 NO **1 NC**	**T5C 235-11z** **T5C 236-11z** 
1 NC	**T5C 235-01z** **T5C 236-01z** 
2 NC	**T5C 235-02z** **T5C 236-02z** 

ES 13 SB



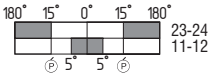
- Thermoplastic enclosure
- Double insulated ⧈
- Bore for shaft Ø 9.5 mm
- Version with 3 contacts has cable on left-hand side
- Overlapping contacts available
- With pre-wired cable

Technical data

Standards:	IEC/EN 60947-5-1
Enclosure:	thermoplastic, self-extinguishing UL 94-V0 Ultramid A3X2G5
Protection class:	IP 67 to EN 60529
Contact material:	silver
Switching system:	slow action, positive break NC contacts ⊖
Contact type:	change-over contact, double break with 2 separate contact bridges
Connection:	cable H05VV-F
Cable section:	4 x 0.75 mm^2
U_{imp}:	–
U_i:	250 V
I_{the}:	6 A
I_e/U_e:	6 A / 250 VAC 0.25 A / 230 VDC 4 A / 24 VDC
Utilisation category:	AC-15, DC-13
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 20 °C ... + 80 °C
Mechanical life:	> 1 million operations
Switching frequency:	1800/h
Shaft bore:	Ø 9.5 mm / 10 mm
Positive break angle:	15°

Contact variants

1 NO / 1 NC



Approvals

CE

Ordering details

ES 13 SB 1Ö/1S ①-②-③-④

No.	Replace	Description
①		Shaft bore 9,5 mm
	10mm	Shaft bore 10 mm
②		Cable exit bottom
	s	Cable exit left
	ST	Connector M12
③	B	Cable entry M16 bottom
	SB	Cable entry M16 left
④		Cable length 1 m
	2m	Cable length 2 m
	5m	Cable length 5 m
	10m	Cable length 10 m

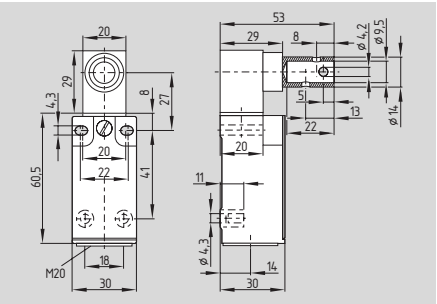
Note

- Universal joint K2 available to compensate for axial displacement, see the following pages 1-79
- 3 contacts version available on request

Note

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

ES 95 SB



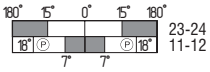
- Thermoplastic enclosure
- Double insulated ⧈
- Bore for shaft Ø 9.5 mm
- Available with overlapping contacts
- 1 cable entry M20 x 1.5
- EEx version available

Technical data

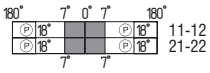
Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	fixings to EN 50047
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Protection class:	IP 67 to EN 60529
Contact material:	silver
Contact type:	change-over contact with double break Zb or 1 NC or 2 NC contacts, with galvanically separated contact bridges
Switching system:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 2.5 mm² (incl. conductor ferrules)
Cable entry:	1 x M20 x 1.5
U_{imp}:	6 kV
U_i:	400 V
I_{the}:	6 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	0.275 A / 250 VDC 1 A / 24 VDC
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 20 °C … + 80 °C
Mechanical life:	> 1 million operations
Switching frequency:	max. 1800/h
Shaft bore:	Ø 9.5 mm / 10 mm
Positive break angle:	18°
Positive break torque:	0.6 Nm

Contact variants

1 NO / 1 NC



2 NC



Approvals

Ordering details

ES 95 SB ①-②-③

No.	Replace	Description
①	1Ö/1S	1 NO / 1 NC
	2Ö	2 NC
②		Shaft bore 9.5 mm
	10mm	Shaft bore 10 mm
③		Cable entry M20
	M16	Cable entry M16
	ST	Connector M12 (A-Coding)
	2310	(B-Coding)

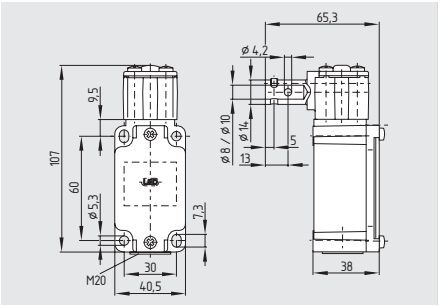
Note

- Universal joint K2 available to compensate for axial displacement, see the following pages 1-79

Note

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

TV.S 335



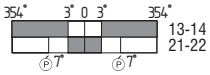
- Metal enclosure
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned in steps 4 x 90° using Torx T 20 srewdriver and pin
- Actuator shaft can be turned 360°
- 1 cable entry M20 x 1.5
- LED version available

Technical data

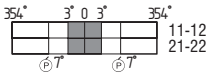
Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	fixings to EN 50041
Enclosure:	light-alloy diecast, paint finish
Protection class:	IP 67 to EN 60529
Contact material:	silver
Contact type:	change-over contact with double break Zb or 1 NC or 2 NC contacts, with galvanically separated contact bridges
Switching system:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 2.5 mm²
	(incl. conductor ferrules)
Cable entry:	1 x M20 x 1.5
U_{imp}:	6 kV
	connector: 0,8 kV
U_i:	500 V
	connector: 50 V
I_{the}:	10 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	4 A / 230 VAC
	1 A / 24 VDC
	connector: 4 A / 50 V
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 25 °C … + 70 °C
Mechanical life:	> 1 million operations
Switching frequency:	max. 1000/h
Shaft bore:	Ø 8 mm / 10 mm
Positive break angle:	7°
Positive break torque:	0.6 Nm

Contact variants

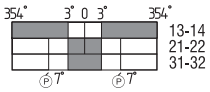
1 NO / 1 NC



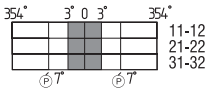
2 NC



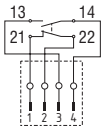
1 NO / 2 NC



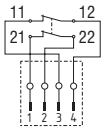
3 NC



Connector
1 NO / 1 NC



2 NC



Approvals

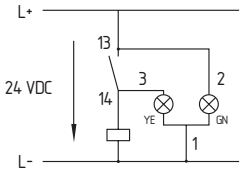
BG UL CSA CE

Ordering details

TV①S 335-②z-③

No.	Replace	Description
①	8	Shaft bore Ø 8 mm
	10	Shaft bore Ø 10 mm
②	02	2 NC
	03	3 NC
	11	1 NO / 1 NC
	12	1 NO / 2 NC
③		Cable entry M20
	NPT	Cable entry NPT 1/2“
	ST	Connector M12 (A-Coding)
	2310	(B-Coding)

Note



LED version:
Ordering suffix G24, only available for version with one NO and one NC contact.
Protected against incorrect polarity and voltage spikes.

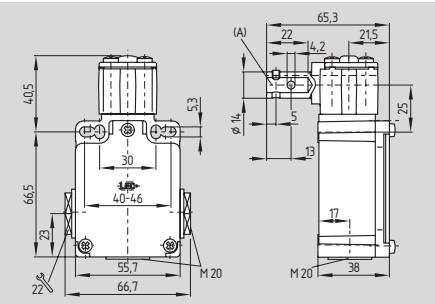
Note

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

Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.

- Setting assistance: Grub screw for location, shaft pre-drilled for pin
- Universal joint available to compensate for axial displacement (only for shaft bore 10 mm), see the following pages 1-79

TV.S 355



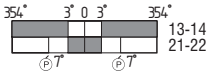
- Metal enclosure
- Good resistance to oil and petroleum spirit
- Actuator heads can be repositioned in steps 4 x 90° using Torx T 20 srewdriver and pin
- Actuator shaft can be turned 360°
- 3 cable entries M20 x 1.5
- LED version available

Technical data

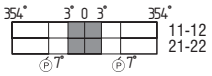
Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	fixings to EN 50041
Enclosure:	light-alloy diecast, paint finish
Protection class:	IP 67 to EN 60529
Contact material:	silver
Contact type:	change-over contact with double break Zb or 1 NC or 2 NC contacts, with galvanically separated contact bridges
Switching system:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 2.5 mm²
	(incl. conductor ferrules)
Cable entry:	3 x M20 x 1.5
U_{imp}:	6 kV
	connector: 0,8 kV
U_i:	500 V
	connector: 50 V
I_{the}:	10 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	4 A / 230 VAC
	1 A / 24 VDC
	connector: 4 A / 50 V
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 25 °C … + 70 °C
Mechanical life:	> 1 million operations
Switching frequency:	max. 1000/h
Shaft bore:	Ø 8 mm / 10 mm
Positive break angle:	7°
Positive break torque:	0.6 Nm

Contact variants

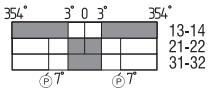
1 NO / 1 NC



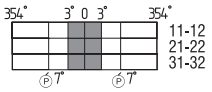
2 NC



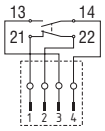
1 NO / 2 NC



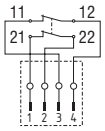
3 NC



Connector
1 NO / 1 NC



2 NC



Approvals

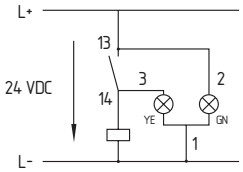
BG UL SP CE

Ordering details

TV①S 355-②z-③

No.	Replace	Description
①	8	Shaft bore Ø 8 mm
	10	Shaft bore Ø 10 mm
②	02	2 NC
	03	3 NC
	11	1 NO / 1 NC
	12	1 NO / 2 NC
③		Cable entry M20
	NPT	Cable entry NPT 1/2“
	ST	Connector M12 (A-Coding)
	2310	(B-Coding)

Note



LED version:
Ordering suffix G24, only available for version with one NO and one NC contact.
Protected against incorrect polarity and voltage spikes.

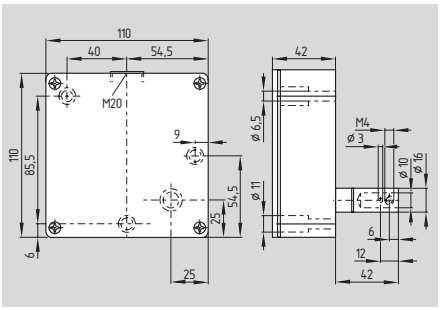
Note

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

Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.

- Setting assistance: Grub screw for location, shaft pre-drilled for pin
- Universal joint available to compensate for axial displacement (only for shaft bore 10 mm), see the following pages 1-79

T.V10S 500



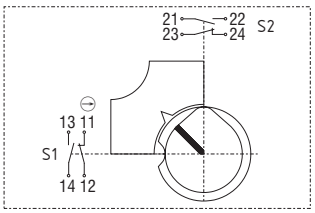
- Metal enclosure
- Slow action
- 3-channel, alternating monitoring
- Good resistance to oil and petroleum spirit
- Actuator shaft can be turned 360°
- 2 cable entries M20 x 1.5

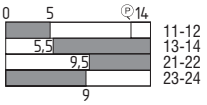
Technical data

Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	fixings to EN 50041
Enclosure:	light-alloy die-cast, enamel finish
Protection class:	IP 67 to EN 60529
Contact material:	silver
Contact type:	2 or 3 change-over contacts with double break Zb
Switching system:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 1.5 mm²
	(incl. conductor ferrules)
U_{imp}:	4 kV
U_i:	250 V
I_{the}:	6 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	4 A / 230 VAC 1 A / 24 VDC
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 25 °C … + 80 °C
Mechanical life:	3 million operations
Switching frequency:	max. 1000/h
Shaft bore:	Ø 10 mm
Positive break angle:	14°
Positive break torque:	1.5 Nm

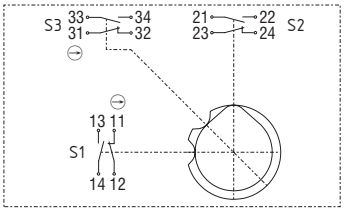
Contact variants

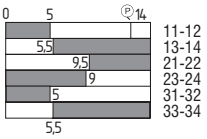
2 NO / 2 NC





3 NO / 3 NC





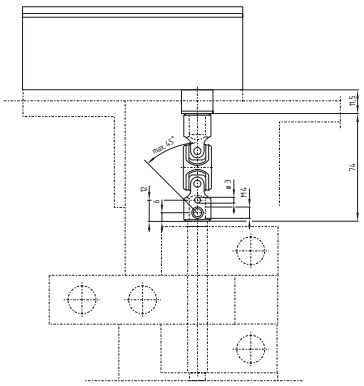
Approvals

Ordering details

T①V10S 500L-②z

No.	Replace	Description
①		With universal joint
	1	With socket
②	22	2 NO / 2 NC
	33	3 NO / 3 NC

Note



Universal joint to compensate axial displacement

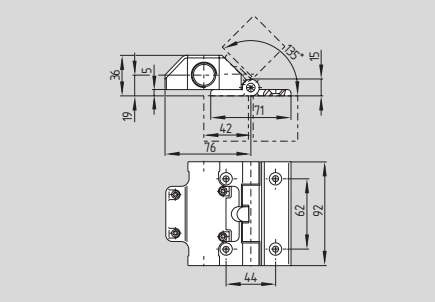
Note

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

Around the clock

Always there for you, the Online Catalogue at:
www.schmersal.com

TVS 400



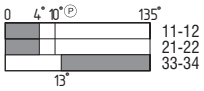
- Thermoplastic enclosure
- Simple mounting, especially on 40 mm profiles
- Good resistance to oil and petroleum spirit
- 2 cable entries M20 x 1.5
- For left or right hinged doors
- Fixing holes for M6 countersunk screws to DIN 965
- The additional hinge including mounting accessories is also available separately, part number Z 400
- Plug connection and mounting kits for profile sections of the most common makes on request

Technical data

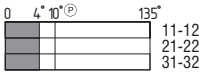
Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Enclosure:	glass-fibre reinforced thermoplastic, self-extinguishing
Hinge:	aluminium
Protection class:	IP 65 to EN 60529
Contact material:	silver
Contact type:	change-over contact with double break, type Zb or 3 NC contacts
Switching system:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 1 mm² (incl. conductor ferrules)
Cable entry:	2 x M20 x 1.5
U_{imp}:	2.5 kV
U_i:	250 V
I_{the}:	2.5 A
Utilisation category:	AC-15, DC-13
I_e/U_e:	2 A / 230 VAC 1 A / 24 VDC
Max. fuse rating:	2 A gG D-fuse
Ambient temperature:	– 25 °C … + 65 °C
Mechanical life:	> 1 million operations
Switching frequency:	max. 120/h
Positive break angle:	10°

Contact variants

1 NO / 2 NC



3 NC



Approvals

Ordering details

TVS 400-①/②

No.	Replace	Description
①	12	1 NO / 2 NC
	03	3 NC
②	/B	With fixing hinge
	/BZ	With fixing and additional hinge

Note

The opening angle has been set to 4° in factory.

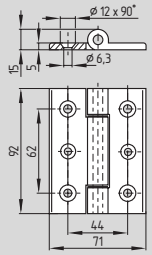
Until the limit of the mechanical life has been reached the angle can increase up to 6° under normal wear-out conditions.

Note

Closed guard device = 0° in contact switch travel diagrams.

Safety switch for hinged guards

System components



Additional hinge Z 400

System components

With Re-start disable / interlock

Ordering details

Additional hinge	**Z 400**

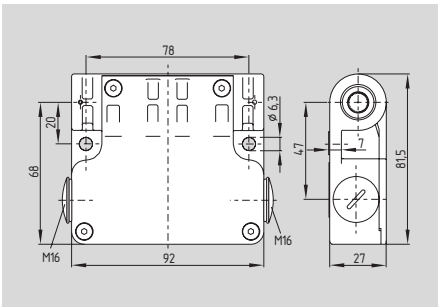
Ordering details

Other product variants:

- With supplementary mechanical restart interlock
- Also for 30 mm, 35 mm, 45 mm profiles
- Stainless steel hinge
- Other switching travels/angles

See T/03 list ELAN, Wettenberg

TV8S 521



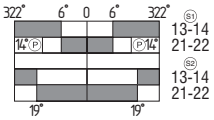
- Metal enclosure
- Mounting independent of hinge
- Variable mounting on hinged side
- Rail-mounting possible with slot nuts
- 2-channel, alternating monitoring
- Good resistance to oil and petroleum spirit
- Actuator shaft can be turned 360°
- 2 cable entries M16 x 1.5
- Switching point subsequently adjustable using hinge L
- For left or right hinged doors
- Push-in system (toothed shaft)

Technical data

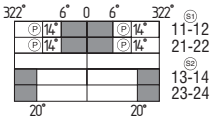
Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Enclosure:	light-alloy diecast, paint finish
Protection class:	IP 67 to EN 60529
Contact material:	silver
Contact type:	2 change-over contacts with double break Zb, with galvanically separated c ontact bridges
Switching system:	⊖ IEC 60947-5-1 slow action, NC contact with positive break
Connection:	screw terminals
Cable section:	max. 1.5 mm², min. 0.75 mm² (incl. conductor ferrules)
Cable entry:	2 x M16 x 1.5
U_{imp}:	4 kV
U_i:	250 V
I_{the}:	10 A
Utilisation category:	AC-15
I_e/U_e:	4 A / 230 VAC
Max. fuse rating:	6 A gG D-fuse
Ambient temperature:	– 25 °C ... + 70 °C
Mechanical life:	> 1 million operations
Switching frequency:	max. 1000/h
Shaft bore:	Inner toothing
Positive break angle:	14°
Positive break torque:	0.8 Nm

Contact variants

1 NO / 1 NC
per switch insert



2 NO / 2 NC
per switch insert



Approvals

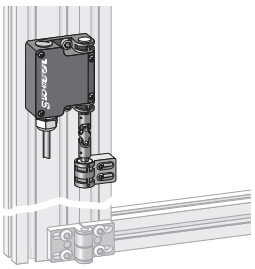
BG UL CSA CE

Ordering details

TV8S 521-①

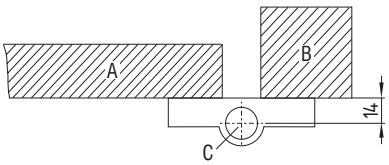
No.	Replace	Description
①	11/11	Switch insert 1: 1NO/1NC Switch insert 2: 1NO/1NC
	02/20	Switch insert 1: 2NC Switch insert 2: 2NO

Note



- Universal joint K1 available to compensate for axial displacement
- Switching point subsequently adjustable using hinge L

Note

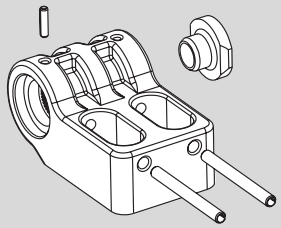


A = Guard door
B = Door post
C = Door hinge

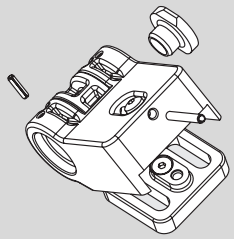
Closed guard device = 0° in contact switch travel diagrams. This is the rest position of the switch

Safety switch for hinged guards

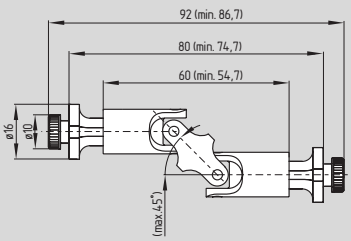
System components



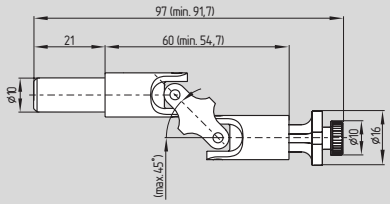
Fixed hinge F



Adjustable hinge L



Universal joint K1



Universal joint K2

Ordering details

Fixed hinge F	**1138414**
Adjustable hinge L	**1138413**
Only for TV8S 521:	
Universal joint K1	**1138412**
Only for ES 13 SB, ES 95 SB-10mm, TV 10S 335 and TV10S 355:	
Universal joint K2	**1147448**