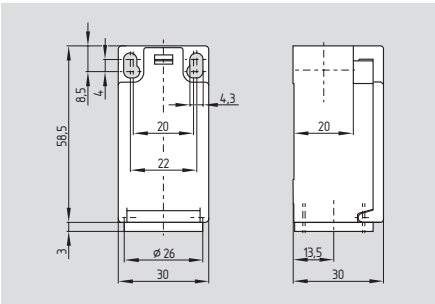


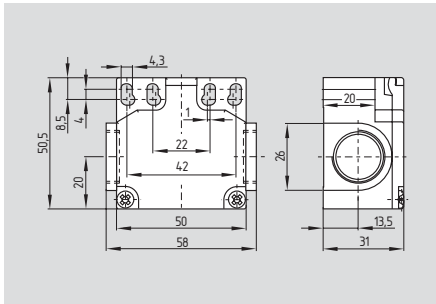
# Position switches to EN 50047

## Z/T 236



- Thermoplastic enclosure
- Double insulated □
- Available with 2 positive break NC contacts
- Snap action with constant contact pressure up to switching point
- Slow action available with overlapping or staggered contacts
- 1 cable entry M20 x 1.5
- Wide range of alternative actuators
- Actuator heads can be repositioned by 4 x 90°
- Angle of roller lever adjustable in 10° steps
- Good resistance to oil and petroleum spirit

## Z/T 256



- Mounting details to EN 50047
- 2 cable entries from sides M20 x 1.5

## 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, type Zb or 2 NC contacts, with galvanically separated contact bridges
Switching system:	⊖ IEC 60947-5-1 slow or snap action, NC contacts with positive break screw terminals
Termination:	max. 2.5 mm <sup>2</sup> , min. 1.5 mm <sup>2</sup> (incl. conductor ferrules)
Cable section:	Z/T 236: 1 x M20 x 1.5 Z/T 256: 2 x M20 x 1.5
Cable entry:	
U <sub>imp</sub> :	6 kV
U <sub>i</sub> :	500 V
I <sub>the</sub> :	10 A
Utilisation category:	AC-15, DC-13
I <sub>e</sub> /U <sub>e</sub> :	4 A / 230 VAC 1 A / 24 VDC
Max. fuse rating:	6 A gL/gG D-fuse
Ambient temperature:	- 30 °C ... + 80 °C
Mechanical life:	20 million operations
Switching frequency:	max. 5000/h
Bounce duration:	snap action: < 3 ms; slow action: in accordance with actuating speed
Switchover time:	snap action: > 5.5 ms; slow action: in accordance with actuating speed

### Approvals



### Approvals



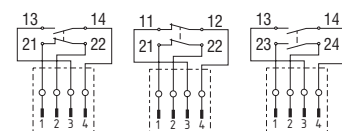
## Ordering details

①② 2③6-④z⑤-⑥-⑦-⑧-⑨

No.	Replace	Description
①	Z	Snap action ⊖
	T	Slow action ⊖
②		For the appropriate actuator: see as of page 1-36
③	3	Slim design
	5	Large design
④	02	2 NC
	11	1 NO / 1 NC
	20	2 NO
⑤	h	Slow action with staggered contacts
	ü	with overlapping contacts

No.	Replace	Description
⑥	ID	Cut clamp
	M20	Cable entry M20
	NPT	Cable entry NPT 1/2"
	ST	Connector M12
		(A-Coding)
		(B-Coding)
⑦	2310	Enclosure with transversely slotted mounting holes
	1297	Roller lever 7H for safety duties
⑧	2138	Gold-plated contacts
⑨	1637	Gold-plated contacts

## Connector

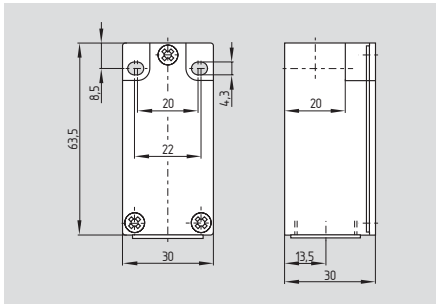


- Other product variants:**
- 3-pole NC/NO contact combinations
  - Change-over contacts, etc.

### List S-IP ELAN, Wettenberg

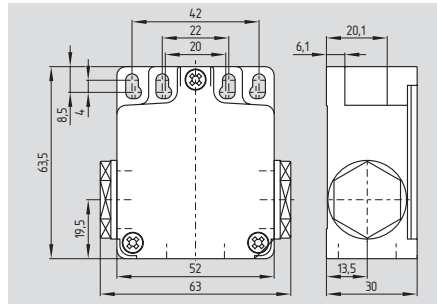
# Position switches to EN 50047

## Z/T 235



- Metal enclosure
- Available with 2 positive break NC contacts
- Snap action with constant contact pressure up to switching point
- Slow action available with overlapping or staggered contacts
- Wiring compartment
- 1 cable entry M20 x 1.5
- Wide range of alternative actuators
- Actuator heads can be repositioned by 4 x 90°
- Angle of roller lever adjustable in 10° steps
- Good resistance to oil and petroleum spirit
- Metal roller available on request

## Z/T 255



- Mounting details to EN 50047
- 3 cable entries M20 x 1.5

## Technical data

Standards: IEC/EN 60947-5-1  
BG-GS-ET-15

Design: fixings to EN 50047

Enclosure: Z/T 235: zinc die-cast, enamel finish  
Z/T 255: aluminium die-cast, enamel finish

Protection class: IP 67 to EN 60529

Contact material: silver

Contact type: change-over contact with double break, type Zb or 2 NC contacts, with galvanically separated contact bridges

Switching system: IEC 60947-5-1  
slow or snap action, NC contacts with positive break

Termination: screw terminals

Cable section: max. 2.5 mm<sup>2</sup>, min. 0.75 mm<sup>2</sup> (incl. conductor ferrules)

Cable entry: Z/T 235: 1 x M20 x 1.5  
Z/T 255: 3 x M20 x 1.5

$U_{imp}$ : 6 kV

$U_i$ : 500 V

$I_{the}$ : 10 A

Utilisation category: AC-15, DC-13

$I_e/U_e$ : 4 A / 230 VAC  
1 A / 24 VDC

Max. fuse rating: 6 A gL/gG D-fuse

Ambient temperature: -30 °C ... +80 °C

Mechanical life: 20 million operations

Switching frequency: max. 5000/h

Bounce duration: snap action: < 3 ms;  
slow action: in accordance with actuating speed

Switchover time: snap action: > 5.5 ms;  
slow action: in accordance with actuating speed

### Approvals



### Approvals



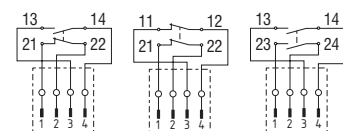
## Ordering details

①② 2③5-④z⑤-⑥-⑦-⑧-⑨

No.	Replace	Description
①	Z	Snap action ⊖
	T	Slow action ⊖
②		For the appropriate actuator: see as of page 1-36
③	3	Slim design
	5	Large design
④	02	2 NC
	11	1 NO / 1 NC
	20	2 NO
⑤	h	Slow action with staggered contacts
	ü	with overlapping contacts

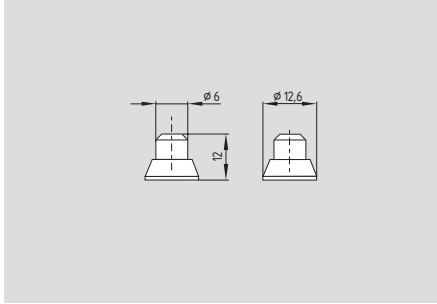
No.	Replace	Description
⑥	ID	Cut clamp
	M20	Cable entry M20
	NPT	Cable entry NPT 1/2"
	ST	Connector M12 (A-Coding)
	2310	(B-Coding)
⑦	1297	Enclosure with transversely slotted mounting holes
⑧	2138	Roller lever 7H for safety duties
⑨	1637	Gold-plated contacts

## Connector



# Position switches to EN 50047

## Plunger S

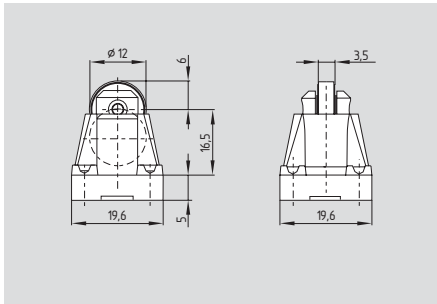


- Actuator type B to EN 50047
- Actuating force: Min. 9 N
- Positive break force: 19 N
- Actuating speed with actuating angle 0° to switch axis  
 Snap action: Min. 10 mm/min, max. 1 m/s  
 Slow action: Min. 60 mm/min, max. 1 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>ZS 2..-11z</b> 	<b>TS 2..-11z</b> 	<b>TS 2..-11zü</b> 	
<b>2 NC</b>	<b>ZS 2..-02z</b> 	<b>TS 2..-02z</b> 	<b>TS 2..-02zh</b> 	
<b>2 NO</b>		<b>TS 2..-20z</b> 		<b>TS 2..-20zh</b> 

## Roller plunger R



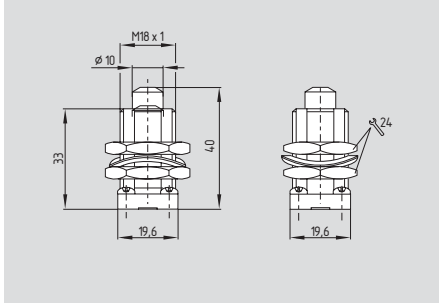
- Actuator type C to EN 50047
- Actuating force: Min. 9 N
- Positive break force: 19 N
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 20 mm/min, max. 1 m/s  
 Slow action: Min. 120 mm/min, max. 1 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>ZR 2..-11z</b> 	<b>TR 2..-11z</b> 	<b>TR 2..-11zü</b> 	
<b>2 NC</b>	<b>ZR 2..-02z</b> 	<b>TR 2..-02z</b> 	<b>TR 2..-02zh</b> 	
<b>2 NO</b>		<b>TR 2..-20z</b> 		<b>TR 2..-20zh</b> 

# Position switches to EN 50047

## Plunger 4S

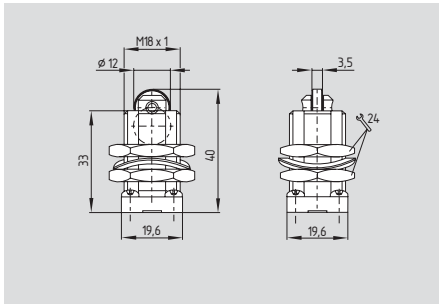


- Actuating force: Min. 9 N
- Positive break force: 19 N
- Actuating speed with actuating angle 0° to switch axis  
 Snap action: Min. 10 mm/min, max. 1 m/s  
 Slow action: Min. 60 mm/min, max. 1 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>Z4S 2..-11z</b> 	<b>T4S 2..-11z</b> 	<b>T4S 2..-11zü</b> 	
<b>2 NC</b>	<b>Z4S 2..-02z</b> 	<b>T4S 2..-02z</b> 		<b>T4S 2..-02zh</b> 
<b>2 NO</b>		<b>T4S 2..-20z</b> 		<b>T4S 2..-20zh</b> 

## Roller plunger 4R



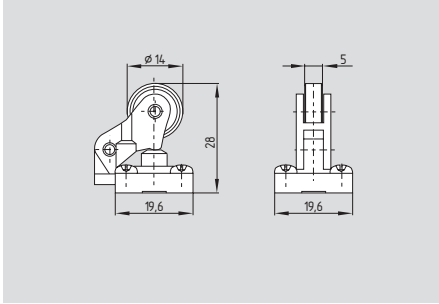
- Actuating force: Min. 9 N
- Positive break force: 19 N
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 20 mm/min, max. 1 m/s  
 Slow action: Min. 120 mm/min, max. 1 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>Z4R 2..-11z</b> 	<b>T4R 2..-11z</b> 	<b>T4R 2..-11zü</b> 	
<b>2 NC</b>	<b>Z4R 2..-02z</b> 	<b>T4R 2..-02z</b> 		<b>T4R 2..-02zh</b> 
<b>2 NO</b>		<b>T4R 2..-20z</b> 		<b>T4R 2..-20zh</b> 

# Position switches to EN 50047

## Offset roller lever 1R

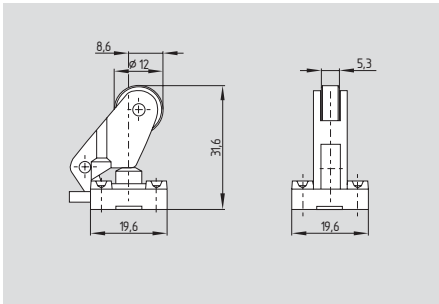


- Actuating force: Min. 9 N
- Positive break force: 19 N
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 27 mm/min, max. 1 m/s  
 Slow action: Min. 160 mm/min, max. 1 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z1R 2..-11z</b> 	<b>T1R 2..-11z</b> 	<b>T1R 2..-11zü</b> 
<b>2 NC</b>	<b>Z1R 2..-02z</b> 	<b>T1R 2..-02z</b> 	
<b>2 NO</b>		<b>T1R 2..-20z</b> 	

## Offset roller lever K



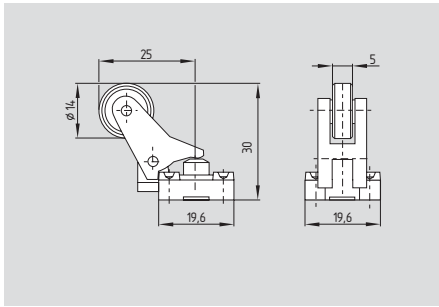
- Actuator type E to EN 50047
- Actuating force: Min. 9 N
- Positive break force: 19 N
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 24 mm/min, max. 1 m/s  
 Slow action: Min. 240 mm/min, max. 1 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>ZK 2..-11z</b> 	<b>TK 2..-11z</b> 	<b>TK 2..-11zü</b> 	
<b>2 NC</b>	<b>ZK 2..-02z</b> 	<b>TK 2..-02z</b> 		<b>TK 2..-02zh</b> 
<b>2 NO</b>		<b>TK 2..-20z</b> 		<b>TK 2..-20zh</b> 

# Position switches to EN 50047

## Angle roller lever 3K

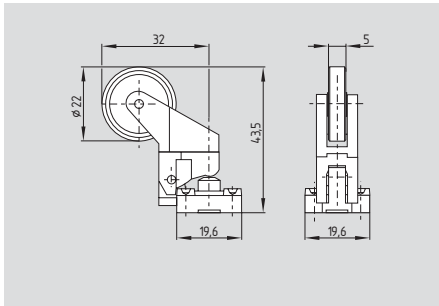


- Actuating force: Min. 9 N
- Positive break force: 19 N
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 27 mm/min, max. 1 m/s  
 Slow action: Min. 160 mm/min, max. 1 m/s
- Actuation from bottom parallel to the switch, therefore only suitable for small housings (Z/T 235 and Z/T 236)

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>Z3K 2..-11z</b> 	<b>T3K 2..-11z</b> 	<b>T3K 2..-11zü</b> 	
<b>2 NC</b>	<b>Z3K 2..-02z</b> 	<b>T3K 2..-02z</b> 		<b>T3K 2..-02zh</b> 
<b>2 NO</b>		<b>T3K 2..-20z</b> 		<b>T3K 2..-20zh</b> 

## Angle roller lever 4K



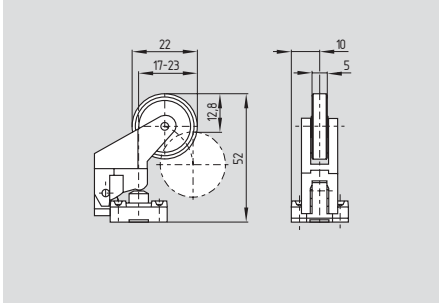
- Actuating force: Min. 6 N
- Positive break force: 16 N
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 44 mm/min, max. 1 m/s  
 Slow action: Min. 264 mm/min, max. 1 m/s
- Actuation from bottom parallel to the switch, therefore only suitable for small housings (Z/T 235 and Z/T 236)

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>Z4K 2..-11z</b> 	<b>T4K 2..-11z</b> 	<b>T4K 2..-11zü</b> 	
<b>2 NC</b>	<b>Z4K 2..-02z</b> 	<b>T4K 2..-02z</b> 		<b>T4K 2..-02zh</b> 
<b>2 NO</b>		<b>T4K 2..-20z</b> 		<b>T4K 2..-20zh</b> 

# Position switches to EN 50047

## Angle roller lever K4

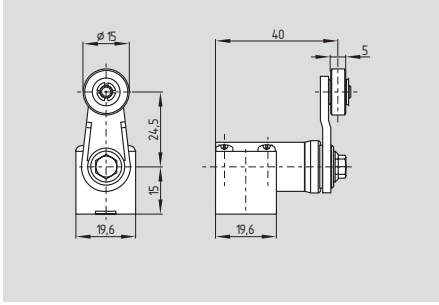


- Actuating force: Min. 6 N
- Positive break force: 16 N
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 56 mm/min, max. 1 m/s  
 Slow action: Min. 336 mm/min, max. 1 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZK4 2..-11z</b> 	<b>TK4 2..-11z</b> 	<b>TK4 2..-11zû</b> 	
<b>2 NC</b>	<b>ZK4 2..-02z</b> 	<b>TK4 2..-02z</b> 		<b>TK4 2..-02zh</b> 
<b>2 NO</b>		<b>TK4 2..-20z</b> 		<b>TK4 2..-20zh</b> 

## Roller lever 1H



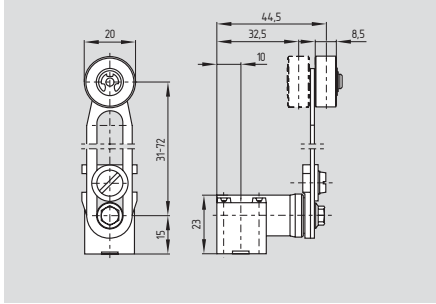
- Actuator type A to EN 50047
- Lever angle adjustable in 10° steps
- Actuating torque: Min. 15 Ncm
- Positive break torque: 18.5 Ncm
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 92 mm/min, max. 1 m/s  
 Slow action: Min. 492 mm/min, max. 1 m/s
- Actuator head gasket, ordering suffix -z

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZV1H 2..-11z</b> 	<b>TV1H 2..-11z</b> 	<b>TV1H 2..-11zû</b> 	
<b>2 NC</b>	<b>ZV1H 2..-02z</b> 	<b>TV1H 2..-02z</b> 		<b>TV1H 2..-02zh</b> 
<b>2 NO</b>		<b>TV1H 2..-20z</b> 		<b>TV1H 2..-20zh</b> 

# Position switches to EN 50047

## Roller lever 7H

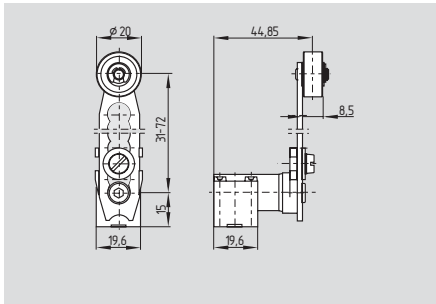


- Only for positioning tasks
- Lever angle adjustable in 10° steps
- Actuating torque: Min. 15 Ncm
- Actuating speed with actuating angle 30° to switch axis  
Snap action: Min. 240 mm/min, max. 1 m/s  
Slow action: Min. 1440 mm/min, max. 1 m/s
- Actuator head gasket, ordering suffix -z

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZV7H 2...-11z</b> 	<b>TV7H 2...-11z</b> 	<b>TV7H 2...-11zü</b> 	
<b>2 NC</b>	<b>ZV7H 2...-02z</b> 	<b>TV7H 2...-02z</b> 		<b>TV7H 2...-02zh</b> 
<b>2 NO</b>		<b>TV7H 2...-20z</b> 		<b>TV7H 2...-20zh</b> 

## Roller lever 7H-2138



- For safety tasks  $\ominus$ , positive break, ordering suffix -2138
- Lever angle adjustable in 10° steps
- Actuating torque: Min. 15 Ncm
- Positive break torque: 18.5 Ncm
- Actuating speed with actuating angle 30° to switch axis  
Snap action: Min. 240 mm/min, max. 1 m/s  
Slow action: Min. 1440 mm/min, max. 1 m/s
- Actuator head gasket, ordering suffix -z

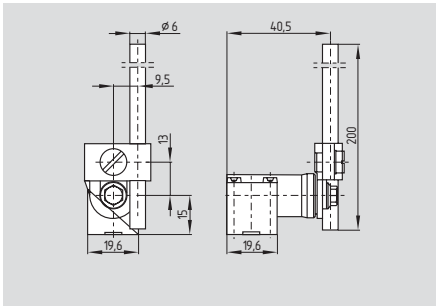
## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZV7H 2...-11z- 2138</b> 	<b>TV7H 2...-11z- 2138</b> 	<b>TV7H 2...-11zü- 2138</b> 	
<b>2 NC</b>	<b>ZV7H 2...-02z- 2138</b> 	<b>TV7H 2...-02z- 2138</b> 		<b>TV7H 2...-02zh- 2138</b> 
<b>2 NO</b>		<b>TV7H 2...-20z- 2138</b> 		<b>TV7H 2...-20zh- 2138</b> 



# Position switches to EN 50047

## Rod lever 10H

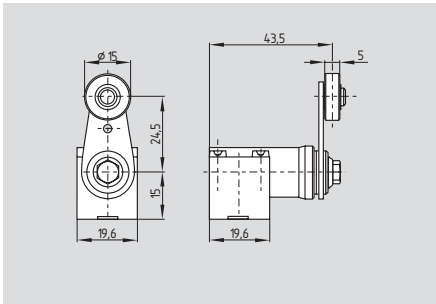


- Only for positioning tasks
- Lever angle adjustable in 10° steps
- Plastic rod
- Actuating torque: Min. 15 Ncm
- Actuating speed with actuating angle 30° to switch axis  
Snap action: Min. 687 mm/min, max. 1 m/s  
Slow action: Min. 4122 mm/min, max. 1 m/s
- Actuator head gasket, ordering suffix -z
- Aluminium rod, ordering suffix -1183

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZV10H 2..-11z</b> 	<b>TV10H 2..-11z</b> 	<b>TV10H 2..-11zü</b> 	
<b>2 NC</b>	<b>ZV10H 2..-02z</b> 	<b>TV10H 2..-02z</b> 		<b>TV10H 2..-02zh</b> 
<b>2 NO</b>		<b>TV10H 2..-20z</b> 		<b>TV10H 2..-20zh</b> 

## Roller lever 12H



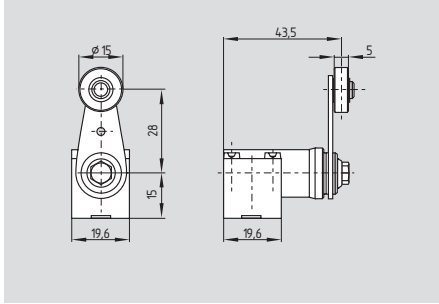
- Actuator type A to EN 50047
- Lever angle adjustable in 10° steps
- Actuating torque: Min. 15 Ncm
- Positive break torque: 18.5 Ncm
- Actuating speed with actuating angle 30° to switch axis  
Snap action: Min. 687 mm/min, max. 1 m/s  
Slow action: Min. 4122 mm/min, max. 1 m/s
- Actuator head gasket, ordering suffix -z

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZV12H 2..-11z</b> 	<b>TV12H 2..-11z</b> 	<b>TV12H 2..-11zü</b> 	
<b>2 NC</b>	<b>ZV12H 2..-02z</b> 	<b>TV12H 2..-02z</b> 		<b>TV12H 2..-02zh</b> 
<b>2 NO</b>		<b>TV12H 2..-20z</b> 		<b>TV12H 2..-20zh</b> 

# Position switches to EN 50047

## Roller lever 14H



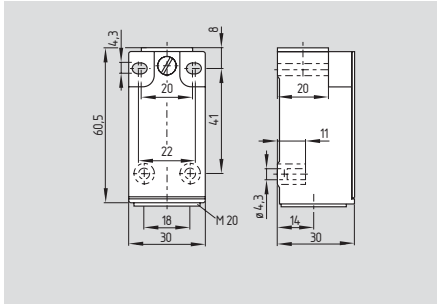
- Lever angle adjustable in 10° steps
- Actuating torque: Min. 15 Ncm
- Positive break torque: 18.5 Ncm
- Actuating speed with actuating angle 30° to switch axis  
 Snap action: Min. 687 mm/min, max. 1 m/s  
 Slow action: Min. 4122 mm/min, max. 1 m/s
- Actuator head gasket, ordering suffix -z

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
1 NO 1 NC	<b>ZV14H 2..-11z</b> 	<b>TV14H 2..-11z</b> 	<b>TV14H 2..-11z</b> 	
	<b>ZV14H 2..-02z</b> 	<b>TV14H 2..-02z</b> 		<b>TV14H 2..-02zh</b> 
2 NO		<b>TV14H 2..-20z</b> 		<b>TV14H 2..-20zh</b> 

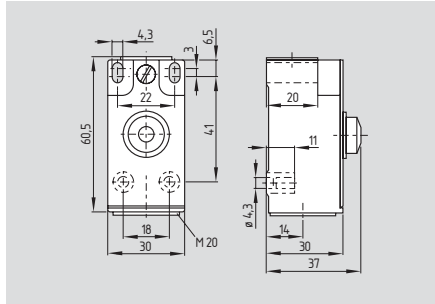
# Position switches to EN 50047

## ES/EM 95



- Thermoplastic enclosure
- Transverse slotted mounting holes
- Double insulated □
- Snap action with constant contact pressure up to switching point
- Slow action available with overlapping contacts
- Wide range of alternative actuators
- Actuator heads can be repositioned by 4 x 90°
- Angle of roller lever adjustable in 10° steps
- 1 cable entry M20 x 1.5
- Good resistance to oil and petroleum spirit
- Knockouts for additional mounting holes if required

## ES/EM 95 V



- Slow action with mechanical locking and blue unlocking button available, ordering suffix -V
- Enclosure with longitudinal slotted mounting holes, ordering suffix LL

## Technical data

Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	DIN 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, type Zb or 2 NC contacts, with galvanically separated contact bridges
Switching system:	⊖ IEC 60947-5-1 slow or snap action, NC contacts with positive break screw terminals
Termination:	max. 2.5 mm <sup>2</sup> (incl. conductor ferrules)
Cable section:	1 x M20 x 1.5
Cable entry:	U <sub>imp</sub> : 6 kV U <sub>i</sub> : 500 V I <sub>the</sub> : 6 A
Utilisation category:	AC-15, DC-13
I <sub>e</sub> /U <sub>e</sub> :	0.275 A / 250 VDC 1 A / 24 VDC
Max. fuse rating:	6 A gL/gG D-fuse
Mechanical life:	> 1 million operations
Switching frequency:	1800/h
Ambient temperature:	- 20 °C ... + 80 °C
Actuating speed referring to the plunger:	snap action: min. 10 mm/min; slow action: min. 60 mm/min
Bounce duration:	snap action: < 3 ms; slow action: in accordance with actuating speed
Switchover time:	snap action: > 5.5 ms; slow action: in accordance with actuating speed

### Approvals



### Approvals



## Ordering details

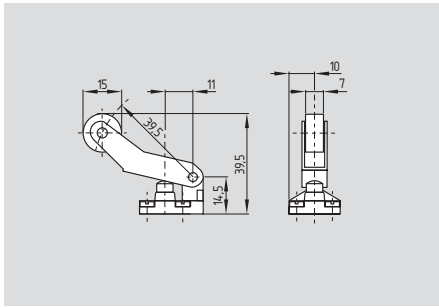
E ① 95 ②-③-④-⑤-⑥

No.	Replace	Description
①	M	Snap action ⊖
	S	Slow action ⊖
②	For the appropriate actuator: see as of page 1-45	
③	1Ö/1S	1 NC / 1 NO
	UE	1 NC / 1 NO with overlapping contacts
	2Ö	2 NC
	2S	2 NO

No.	Replace	Description
④	V	Mechanical locking and unlocking push button
⑤		Cable entry M20
	M16	Cable entry M16
⑥	LL	Transverse slotted holes Longitudinal slotted holes

# Position switches to EN 50047

## Long offset roller lever

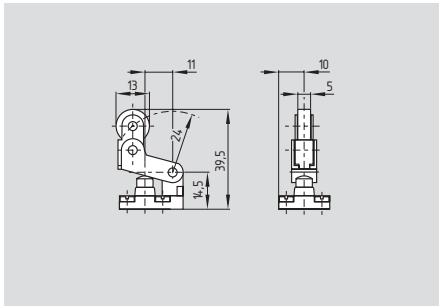


- Plunger with watertight collar
- Wear-resistant thermoplastic roller
- Actuator heads can be repositioned by 4 x 90°
- Metal roller available on request

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts
<b>1 NO 1 NC</b>	<b>EM 95 WHLM 1Ö/1S</b> 	<b>ES 95 WHLM 1Ö/1S</b> 	<b>ES 95 WHLM UE</b> 
<b>2 NC</b>		<b>ES 95 WHLM 2Ö</b> 	
<b>2 NO</b>		<b>ES 95 WHLM 2S</b> 	

## Rocking offset roller lever



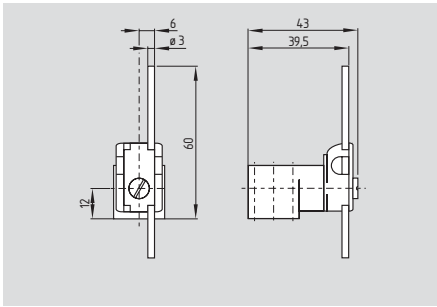
- **Only for positioning tasks**
- Plunger with watertight collar
- Actuator heads can be repositioned by 4 x 90°
- Actuation only possible from one side (R.H.S. in illustration)
- Free movement of actuator from other side
- Metal roller available on request

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts
<b>1 NO 1 NC</b>	<b>EM 95 WHKM 1Ö/1S</b> 	<b>ES 95 WHKM 1Ö/1S</b> 	<b>ES 95 WHKM UE</b> 
<b>2 NC</b>		<b>ES 95 WHKM 2Ö</b> 	
<b>2 NO</b>		<b>ES 95 WHKM 2S</b> 	

# Position switches to EN 50047

## Wire lever DD

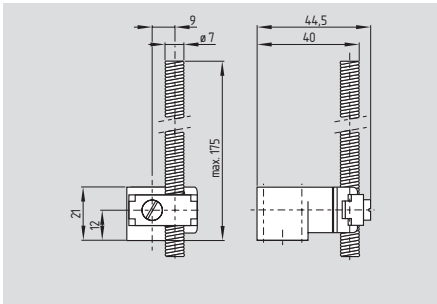


- Only for positioning tasks
- Lever angle adjustable in 10° steps
- Actuator heads can be repositioned by 4 x 90°

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts
<b>1 NO 1 NC</b>	<b>EM 95 DD 1Ö/1S</b> 	<b>ES 95 DD 1Ö/1S</b> 	<b>ES 95 DD UE</b> 
<b>2 NC</b>		<b>ES 95 DD 2Ö</b> 	
<b>2 NO</b>		<b>ES 95 DD 2S</b> 	

## Spring-rod lever DF



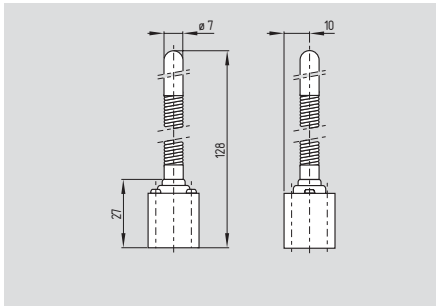
- Only for positioning tasks
- Lever angle adjustable in 10° steps
- Actuator heads can be repositioned by 4 x 90°

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts
<b>1 NO 1 NC</b>	<b>EM 95 DF 1Ö/1S</b> 	<b>ES 95 DF 1Ö/1S</b> 	<b>ES 95 DF UE</b> 
<b>2 NC</b>		<b>ES 95 DF 2Ö</b> 	
<b>2 NO</b>		<b>ES 95 DF 2S</b> 	

# Position switches to EN 50047

## Spring rod TK

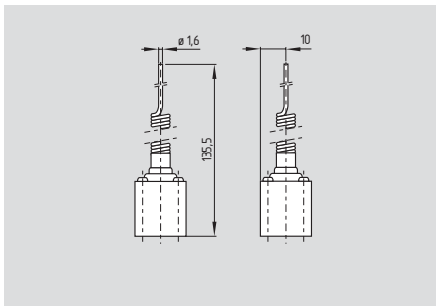


- Only for positioning tasks
- Wear-resistant thermoplastic tip
- Spring rod can be actuated from any direction

## Contact variants

Contacts/ Switch travel	Snap action	Slow action
	<b>1 NO</b> <b>1 NC</b>	<b>EM 95 TK 1Ö/1S</b> 

## Long spring wire TL



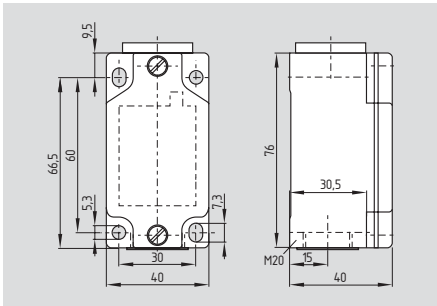
- Only for positioning tasks
- Spring rod can be actuated from any direction

## Contact variants

Contacts/ Switch travel	Snap action	Slow action
	<b>1 NO</b> <b>1 NC</b>	<b>EM 95 TL 1Ö/1S</b> 

# Position switches to EN 50041

## Z 332



- Metal enclosure
- Gold-plated solid silver contacts
- Magnetic-storage snap action system
- Wiring compartment
- Short contact-bounce duration
- Switching system separated from snap action system, providing constant switching point independent of contact wear
- Large contact break
- High repeat accuracy of switching point position
- Wide range of alternative actuators
- Actuator heads can be repositioned by 4 x 90°
- Angle of roller lever adjustable in 10° steps
- Good resistance to oil and petroleum spirit

## Technical data

Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	DIN EN 50041
Enclosure:	light-alloy diecast, paint finish
Protection class:	IP 65 to EN 60529
Contact material:	silver
Contact type:	change-over contact with double break, type Zb or 2 NC contacts, with galvanically separated contact bridges
Switching system:	⊖ IEC 60947-5-1 snap action, NC contacts with positive break
Termination:	screw terminals
Cable section:	max. 2.5 mm <sup>2</sup> (incl. conductor ferrules)
U <sub>imp</sub> :	4 kV
U <sub>i</sub> :	250 V
I <sub>the</sub> :	6 A
Utilisation category:	AC-15, DC-13
I <sub>e</sub> /U <sub>e</sub> :	2.5 A / 230 VAC
Max. fuse rating:	6 A gL/gG D-fuse
Ambient temperature:	- 30 °C ... + 80 °C
Mechanical life:	30 million operations
Switching frequency:	3000/h
Switching-point accuracy:	± 0.02 mm
Actuating speed snap action:	min. 10 mm/min
Contact break for complete stroke:	> 2 x 1.25 mm
Bounce duration:	< 2.5 ms
Switchover time snap action:	> 1,5 ms

## Approvals

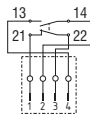


## Ordering details

Z ① 332-11y-②-③

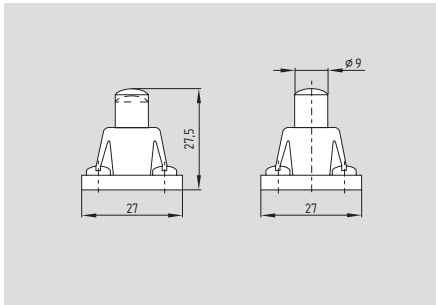
No.	Replace	Description
①		For the appropriate actuator: see as of page 1-49
②	M20 ST	Cable entry M20 Connector M12 (A-Coding)
	2310	(B-Coding)
③	2138	Roller lever 7H for safety duties

## Connector



## Position switches to EN 50041

### Plunger S



- Actuator type B to EN 50041
- Actuating force: Min. 31 N

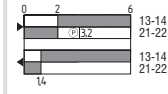
### Contact variants

Contacts/  
Switch travel

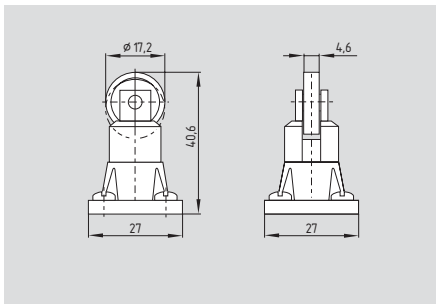
Snap action

1 NO  
1 NC

ZS 332-11y



### Roller plunger R



- Actuator type C to EN 50041
- Actuating force: Min. 31 N
- Brass actuator roller

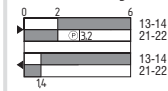
### Contact variants

Contacts/  
Switch travel

Snap action

1 NO  
1 NC

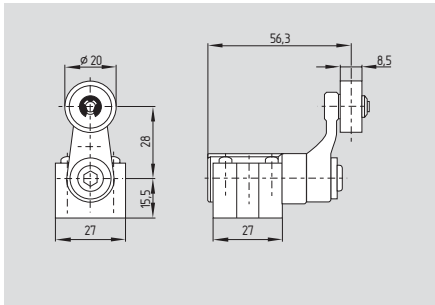
ZR 332-11y





## Position switches to EN 50041

### Roller lever H



- Actuator type A to EN 50041
- Actuating torque: Min. 35 Ncm

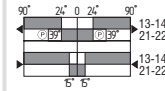
### Contact variants

Contacts/  
Switch travel

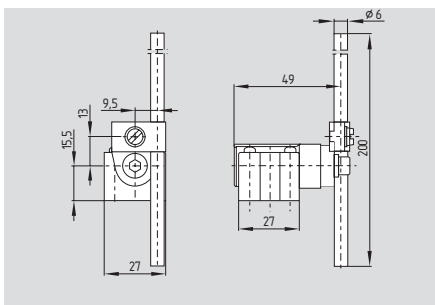
Snap action

1 NO  
1 NC

**Z4VH 332-11y**



### Roller lever 10H



- Actuator type D to EN 50041
- Plastic rod
- Only for positioning tasks
- Actuating torque: Min. 35 Ncm
- Aluminium rod, ordering suffix -1183

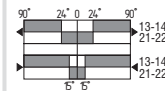
### Contact variants

Contacts/  
Switch travel

Snap action

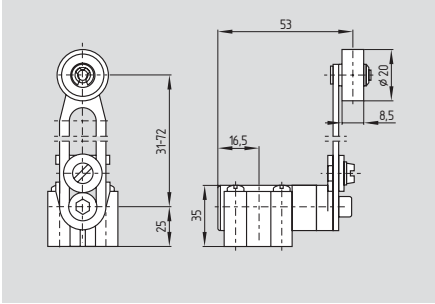
1 NO  
1 NC

**Z4V10H 332-11y**



# Position switches to EN 50041

## Roller lever 7H



- Only for positioning tasks
- Actuating torque: Min. 35 Ncm

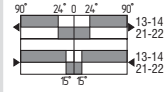
## Contact variants

Contacts/  
Switch travel

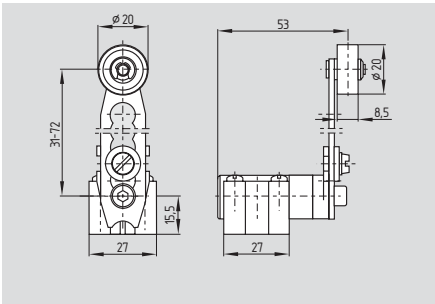
Snap action

1 NO  
1 NC

Z4V7H 332-11y



## Roller lever 7H-2138



- For safety tasks ⊕, positive break, ordering suffix -2138
- Actuating torque: Min. 35 Ncm

Positive break angle ⊕ only valid with ordering suffix -2138

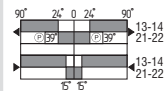
## Contact variants

Contacts/  
Switch travel

Snap action

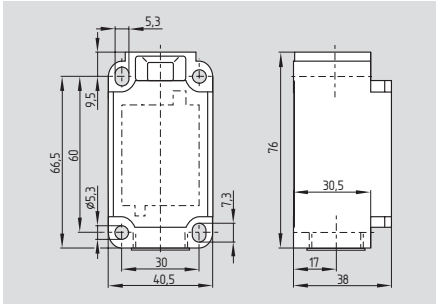
1 NO  
1 NC

Z4V7H 332-11y-2138



# Position switches to EN 50041

## Z/T 336



- Thermoplastic enclosure
- Double insulated  $\square$
- Available with positive break NC contacts to EN 60947-5-1
- Snap action with constant contact pressure up to switching point
- Slow action available with 2 positive break NC contacts
- Slow action available with overlapping or staggered contacts
- 1 cable entry M20 x 1.5
- Wide range of alternative actuators
- Actuator heads can be repositioned by 4 x 90°
- Angle of roller lever adjustable in 10° steps
- Good resistance to oil and petroleum spirit
- Metal roller available on request

## Technical data

Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	DIN EN 50041
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, type Zb or 2 NC contacts, with galvanically separated contact bridges
Switching system:	$\ominus$ IEC 60947-5-1 slow or snap action, NC contacts with positive break
Termination:	screw terminals
Cable section:	max. 2.5 mm <sup>2</sup> (incl. conductor ferrules)
Cable entry:	1 x M20 x 1.5
U <sub>imp</sub> :	6 kV
U <sub>i</sub> :	500 V
I <sub>the</sub> :	10 A
Utilisation category:	AC-15, DC-13
I <sub>e</sub> /U <sub>e</sub> :	4 A / 230 VAC 1 A / 24 VDC
Max. fuse rating:	6 A gL/gG D-fuse
Ambient temperature:	- 30 °C ... + 80 °C
Mechanical life:	30 million operations
Switching frequency:	max. 5000/h
Bounce duration:	snap action: in accordance with actuating speed; slow action: < 2ms
Switchover time:	snap action: < 2 ms; slow action: in accordance with actuating speed

## Approvals



## Ordering details

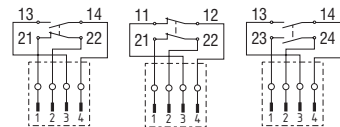
①② 336-③z④-⑤-⑥

No.	Replace	Description
①	Z	Snap action $\ominus$
	T	Slow action $\ominus$
②	For the appropriate actuator: see as of page 1-53	
③	11	1 NO / 1 NC
	02	2 NC
	20	2 NO
	01/01	1 NC left / 1 NC right
④	h	Slow action with staggered contacts
	ü	Slow action with overlapping contacts

## Ordering details

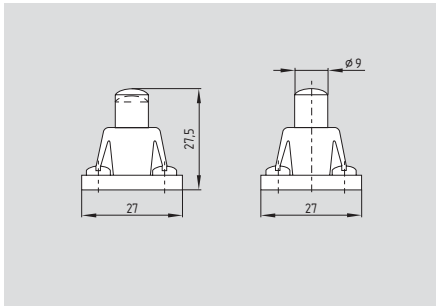
No.	Replace	Description
⑤	M20	Cable entry M20
	NPT	Cable entry NPT 1/2"
	ST	Connector M12 (A-Coding) (B-Coding)
⑥	2310	Roller lever 7H
	2138	for safety duties

## Connector



# Position switches to EN 50041

## Plunger S

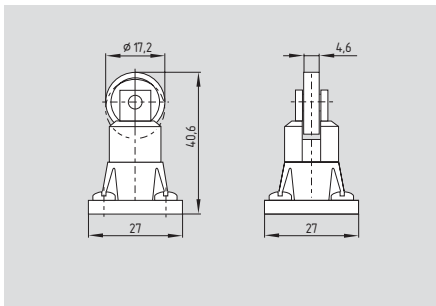


- Actuator type B to EN 50041
- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating angle 0° to switch axis, max. 0.5 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZS 336-11z</b> 	<b>TS 336-11z</b> 	<b>TS 336-11zü</b> 	
<b>2 NC</b>	<b>ZS 336-02z</b> 	<b>TS 336-02z</b> 		<b>TS 336-02zh</b> 
<b>2 NO</b>		<b>TS 336-20z</b> 		<b>TS 336-20zh</b> 

## Roller plunger R



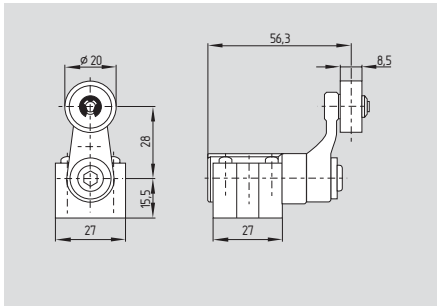
- Actuator type C to EN 50041
- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 0.5 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZR 336-11z</b> 	<b>TR 336-11z</b> 	<b>TR 336-11zü</b> 	
<b>2 NC</b>	<b>ZR 336-02z</b> 	<b>TR 336-02z</b> 		<b>TR 336-02zh</b> 
<b>2 NO</b>		<b>TR 336-20z</b> 		<b>TR 336-20zh</b> 

# Position switches to EN 50041

## Roller lever H



- Actuator type A to EN 50041
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s

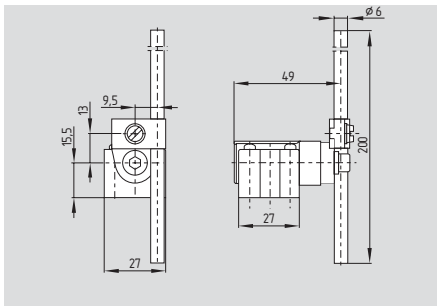
The positioning of the head must be carried out in factory.

On version TVH 336-01/01z positive break only to one side.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z4VH 336-11z</b> 	<b>T4VH 336-11z</b> 	<b>T4VH 336-11zÜ</b> 	
<b>2 NC</b>	<b>Z4VH 336-02z</b> 	<b>T4VH 336-02z</b> 		<b>T4VH 336-02zh</b> 
<b>2 NO</b>		<b>T4VH 336-20z</b> 		<b>T4VH 336-20zh</b> 
<b>1 NC left</b> <b>1 NC right</b>		<b>TVH 336-01/01z</b> 		

## Rod lever 10H



- **Only for positioning tasks**
- Actuator type D to EN 50041
- Plastic rod
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s
- Aluminium rod, ordering suffix -1183

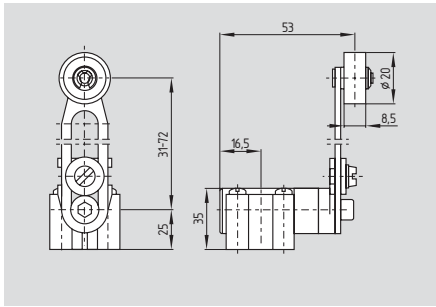
The positioning of the head must be carried out in factory.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z4V10H 336-11z</b> 	<b>T4V10H 336-11z</b> 	<b>T4V10H 336-11zÜ</b> 	
<b>2 NC</b>	<b>Z4V10H 336-02z</b> 	<b>T4V10H 336-02z</b> 		<b>T4V10H 336-02zh</b> 
<b>2 NO</b>		<b>T4V10H 336-20z</b> 		<b>T4V10H 336-20zh</b> 
<b>1 NC left</b> <b>1 NC right</b>		<b>TV10H 336-01/01z</b> 		

# Position switches to EN 50041

## Roller lever 7H



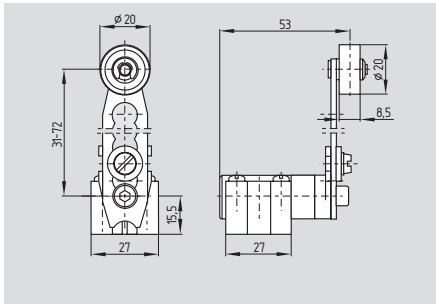
- Only for positioning tasks
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s

The positioning of the head must be carried out in factory.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
1 NO 1 NC	<b>Z4V7H 336-11z</b> 	<b>T4V7H 336-11z</b> 	<b>T4V7H 336-11z</b> 	
2 NC	<b>Z4V7H 336-02z</b> 	<b>T4V7H 336-02z</b> 		<b>T4V7H 336-02zh</b> 
2 NO		<b>T4V7H 336-20z</b> 		<b>T4V7H 336-20zh</b> 
1 NC left 1 NC right		<b>TV7H 336-01/01z</b> 		

## Roller lever 7H-2138



- For safety tasks ⊖, positive break, ordering suffix -2138
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s

The positioning of the head must be carried out in factory.

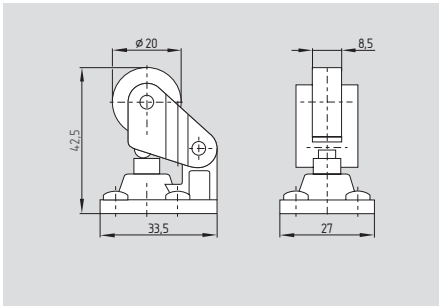
On version TV7H 336-01/01z-2138 positive break only to one side.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
1 NO 1 NC	<b>Z4V7H 336-11z-2138</b> 	<b>T4V7H 336-11z-2138</b> 	<b>T4V7H 336-11z-2138</b> 	
2 NC	<b>Z4V7H 336-02z-2138</b> 	<b>T4V7H 336-02z-2138</b> 		<b>T4V7H 336-02zh-2138</b> 
2 NO		<b>T4V7H 336-20z-2138</b> 		<b>T4V7H 336-20zh-2138</b> 
1 NC left 1 NC right		<b>TV7H 336-01/01z-2138</b> 		

# Position switches to EN 50041

## Offset roller lever 1K

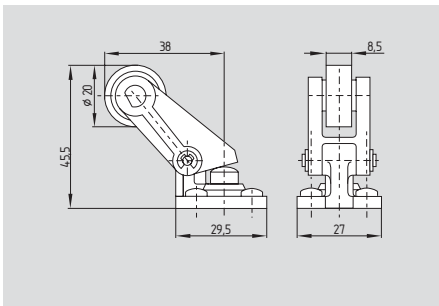


- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 0.5 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z1K 336-11z</b> 	<b>T1K 336-11z</b> 	<b>T1K 336-11zÜ</b> 	
<b>2 NC</b>	<b>Z1K 336-02z</b> 	<b>T1K 336-02z</b> 		<b>T1K 336-02zh</b> 
<b>2 NO</b>		<b>T1K 336-20z</b> 		<b>T1K 336-20zh</b> 

## Angle roller lever 3K



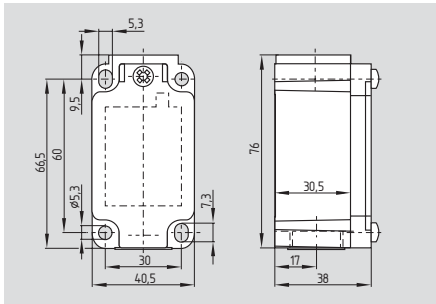
- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 0.5 m/s
- Actuation parallel to axis of switch from below

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z3K 336-11z</b> 	<b>T3K 336-11z</b> 	<b>T3K 336-11zÜ</b> 	
<b>2 NC</b>	<b>Z3K 336-02z</b> 	<b>T3K 336-02z</b> 		<b>T3K 336-02zh</b> 
<b>2 NO</b>		<b>T3K 336-20z</b> 		<b>T3K 336-20zh</b> 

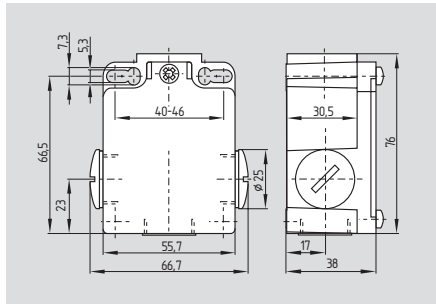
# Position switches to EN 50041

## Z/T 335



- Metal enclosure
- Snap action with constant contact pressure up to switching point
- Slow or snap action available with 2 positive break NC contacts to EN 60947-5-1
- Slow action available with overlapping or staggered contacts
- 1 cable entry M20 x 1.5
- Wide range of alternative actuators
- Actuator heads can be repositioned by 4 x 90°
- Angle of roller lever adjustable in 10° steps
- Good resistance to oil and petroleum spirit
- Metal roller available on request

## Z/T 355



- Mountings and switching points to EN 50041
- 3 cable entries M20 x 1.5

## Technical data

Standards:	IEC/EN 60947-5-1 BG-GS-ET-15
Design:	DIN 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, type Zb or 2 NC contacts, with galvanically separated contact bridges
Switching system:	⊖ IEC 60947-5-1 slow or snap action, NC contacts with positive break screw terminals
Termination:	max. 2.5 mm <sup>2</sup> (incl. conductor ferrules)
Cable section:	Z/T 335: 1 x M20 x 1.5 Z/T 355: 3 x M20 x 1.5
Cable entry:	
U <sub>imp</sub> :	6 kV
U <sub>i</sub> :	-03z, -12z: 4kV 500 V
I <sub>the</sub> :	10 A
Utilisation category:	AC-15, DC-13
I <sub>e</sub> /U <sub>e</sub> :	4 A / 230 VAC 1 A / 24 VDC
Max. fuse rating:	6 A gL/gG D-fuse
Ambient temperature:	-30 °C ... +80 °C
Mechanical life:	30 million operations
Switching frequency:	max. 5000/h
Bounce duration:	snap action: in accordance with actuating speed; slow action: < 2ms
Switchover time:	snap action: < 2 ms; slow action: in accordance with actuating speed

### Approvals



### Approvals



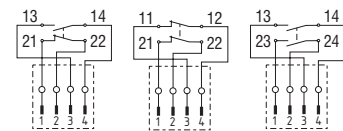
## Ordering details

①② 3③5-④z⑤-⑥-⑦-⑧

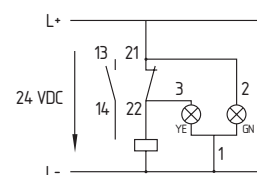
No.	Replace	Description
①	Z	Snap action ⊖
	T	Slow action ⊖
②		For the appropriate actuator: see as of page 1-58
③	3	Slim design
	5	Large design
④	11	1 NO / 1 NC
	02	2 NC
	20	2 NO
	01/01	1 NC left / 1 NC right
	12	1 NO / 2 NC
	03	3 NC

No.	Replace	Description
⑤	h	Slow action with staggered contacts
	ü	with overlapping contacts
⑥	G24	With LED
⑦	M20	Cable entry M20
	NPT	Cable entry NPT 1/2"
	ST	Connector M12 (A-Coding) (B-Coding)
	2310	Roller lever 7H
⑧	2138	for safety duties

## Note



### Connector



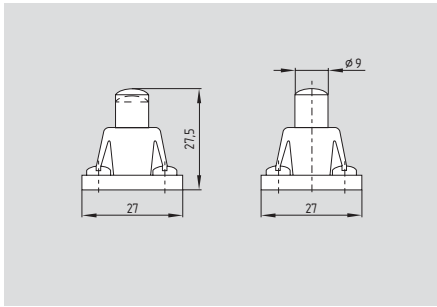
### LED version

Ordering suffix G24, Protected against incorrect polarity and voltage spikes.



# Position switches to EN 50041

## Plunger S

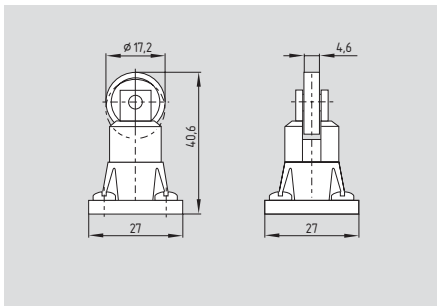


- Actuator type B to EN 50041
- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating angle 0° to switch axis, max. 0.5 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZS 3..-11z</b> 	<b>TS 3..-11z</b> 	<b>TS 3..-11zü</b> 	
<b>2 NC</b>	<b>ZS 3..-02z</b> 	<b>TS 3..-02z</b> 		<b>TS 3..-02zh</b> 
<b>2 NO</b>		<b>TS 3..-20z</b> 		<b>TS 3..-20zh</b> 
<b>1 NO 2 NC</b>		<b>TS 3..-12z</b> 	<b>TS 3..-12zü</b> 	
<b>3 NC</b>		<b>TS 3..-03z</b> 		<b>TS 3..-03zh</b> 

## Roller plunger R



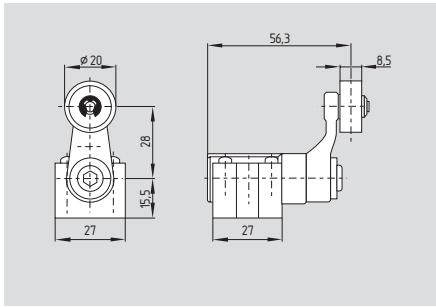
- Actuator type C to EN 50041
- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 0.5 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO 1 NC</b>	<b>ZR 3..-11z</b> 	<b>TR 3..-11z</b> 	<b>TR 3..-11zü</b> 	
<b>2 NC</b>	<b>ZR 3..-02z</b> 	<b>TR 3..-02z</b> 		<b>TR 3..-02zh</b> 
<b>2 NO</b>		<b>TR 3..-20z</b> 		<b>TR 3..-20zh</b> 
<b>1 NO 2 NC</b>		<b>TR 3..-12z</b> 	<b>TR 3..-12zü</b> 	
<b>3 NC</b>		<b>TR 3..-03z</b> 		<b>TR 3..-03zh</b> 

# Position switches to EN 50041

## Roller lever H



- Actuator type A to EN 50041
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s

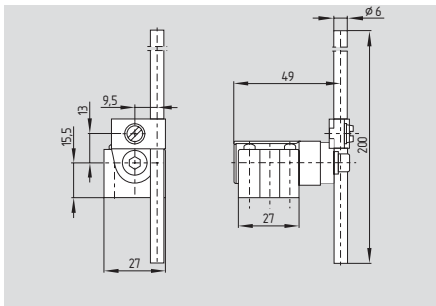
The positioning of the head must be carried out in factory.

On version TVH ...-01/01z positive break only to one side.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z4VH 3...-11z</b> 	<b>T4VH 3...-11z</b> 	<b>T4VH 3...-11z<sup>ü</sup></b> 	
<b>2 NC</b>	<b>Z4VH 3...-02z</b> 	<b>T4VH 3...-02z</b> 		<b>T4VH 3...-02zh</b> 
<b>2 NO</b>		<b>T4VH 3...-20z</b> 		<b>T4VH 3...-20zh</b> 
<b>1 NC left</b> <b>1 NC right</b>		<b>TVH 3...-01/01z</b> 		
<b>1 NO</b> <b>2 NC</b>		<b>T4VH 3...-12z</b> 	<b>T4VH 3...-12z<sup>ü</sup></b> 	
<b>3 NC</b>		<b>T4VH 3...-03z</b> 		<b>T4VH 3...-03zh</b> 

## Rod lever 10H



- **Only for positioning tasks**
- Actuator type D to EN 50041
- Plastic rod
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s
- Aluminium rod, ordering suffix -1183

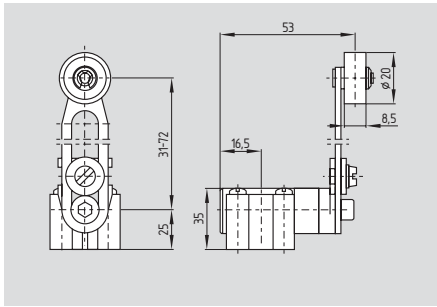
The positioning of the head must be carried out in factory.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z4V10H 3...-11z</b> 	<b>T4V10H 3...-11z</b> 	<b>T4V10H 3...-11z<sup>ü</sup></b> 	
<b>2 NC</b>	<b>Z4V10H 3...-02z</b> 	<b>T4V10H 3...-02z</b> 		<b>T4V10H 3...-02zh</b> 
<b>2 NO</b>		<b>T4V10H 3...-20z</b> 		<b>T4V10H 3...-20zh</b> 
<b>1 NC left</b> <b>1 NC right</b>		<b>TV10H 3...-01/01z</b> 		
<b>1 NO</b> <b>2 NC</b>		<b>T4V10H 3...-12z</b> 	<b>T4V10H 3...-12z<sup>ü</sup></b> 	
<b>3 NC</b>		<b>T4V10H 3...-03z</b> 		<b>T4V10H 3...-03zh</b> 

# Position switches to EN 50041

## Roller lever 7H



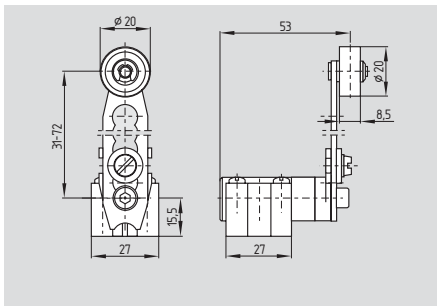
- Only for positioning tasks
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s

The positioning of the head must be carried out in factory.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
1 NO 1 NC	<b>Z4V7H 3..-11z</b> 	<b>T4V7H 3..-11z</b> 	<b>T4V7H 3..-11z</b> 	
2 NC	<b>Z4V7H 3..-02z</b> 	<b>T4V7H 3..-02z</b> 		<b>T4V7H 3..-02zh</b> 
2 NO		<b>T4V7H 3..-20z</b> 		<b>T4V7H 3..-20zh</b> 
1 NC left 1 NC right		<b>TV7H 3..-01/01z</b> 		
1 NO 2 NC		<b>T4V7H 3..-12z</b> 	<b>T4V7H 3..-12z</b> 	
3 NC		<b>T4V7H 3..-03z</b> 		<b>T4V7H 3..-03zh</b> 

## Roller lever 7H-2138



- For safety tasks ⊖, positive break, ordering suffix -2138
- Required actuating torque:  
26 Ncm for snap action,  
31 Ncm for slow action
- Actuating speed with actuating angle 30° to switch axis: max. 2.5 m/s

The positioning of the head must be carried out in factory.

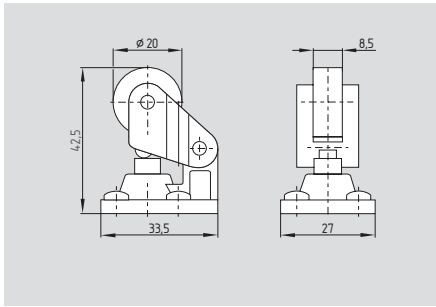
On version TV7H ...-01/01z-2138 positive break only to one side.

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
1 NO 1 NC	<b>Z4V7H 3..-11z-2138</b> 	<b>T4V7H 3..-11z-2138</b> 	<b>T4V7H 3..-11z-2138</b> 	
2 NC	<b>Z4V7H 3..-02z-2138</b> 	<b>T4V7H 3..-02z-2138</b> 		<b>T4V7H 3..-02zh-2138</b> 
2 NO		<b>T4V7H 3..-20z-2138</b> 		<b>T4V7H 3..-20zh-2138</b> 
1 NC left 1 NC right		<b>TV7H 3..-01/01z-2138</b> 		
1 NO 2 NC		<b>T4V7H 3..-12z-2138</b> 	<b>T4V7H 3..-12z-2138</b> 	
3 NC		<b>T4V7H 3..-03z-2138</b> 		<b>T4V7H 3..-03zh-2138</b> 

# Position switches to EN 50041

## Offset roller lever 1K

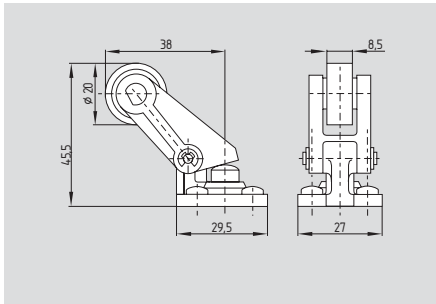


- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating  
angle 30° to switch axis: max. 0.5 m/s

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z1K 3..-11z</b> 	<b>T1K 3..-11z</b> 	<b>T1K 3..-11zü</b> 	
<b>2 NC</b>	<b>Z1K 3..-02z</b> 	<b>T1K 3..-02z</b> 		<b>T1K 3..-02zh</b> 
<b>2 NO</b>		<b>T1K 3..-20z</b> 		<b>T1K 3..-20zh</b> 
<b>1 NO</b> <b>2 NC</b>		<b>T1K 3..-12z</b> 	<b>T1K 3..-12zü</b> 	
<b>3 NC</b>		<b>T1K 3..-03z</b> 		<b>T1K 3..-03zh</b> 

## Angle roller lever 3K



- Required actuating force:  
12 N for snap action,  
17 N for slow action
- Actuating speed with actuating  
angle 30° to switch axis: max. 0.5 m/s
- Actuation parallel to axis of switch  
from below

## Contact variants

Contacts/ Switch travel	Snap action	Slow action	Slow action with overlapping contacts	Slow action with staggered contacts
<b>1 NO</b> <b>1 NC</b>	<b>Z3K 3..-11z</b> 	<b>T3K 3..-11z</b> 	<b>T3K 3..-11zü</b> 	
<b>2 NC</b>	<b>Z3K 3..-02z</b> 	<b>T3K 3..-02z</b> 		<b>T3K 3..-02zh</b> 
<b>2 NO</b>		<b>T3K 3..-20z</b> 		<b>T3K 3..-20zh</b> 
<b>1 NO</b> <b>2 NC</b>		<b>T3K 3..-12z</b> 	<b>T3K 3..-12zü</b> 	
<b>3 NC</b>		<b>T3K 3..-03z</b> 		<b>T3K 3..-03zh</b> 