

Limit Switches - Safety Type with pull button reset Plastic Body IP65 and Metal Body IP66

CARLO GAVAZZI



- Double Insulation \square (for thermoplastic type)
- High mechanical resistant
- Degree of protection IP65 (thermoplastic) IP66 (metal)
- Reinforced UL-V0 thermoplastic fiber-glass body
- Zinc alloy (Zamack) body
- Positive Opening Operation \rightarrow
- Minimum Actuation Force/Torque
- Minimum Force to achieve Positive Opening Operation
- Precise operating points (consistency)
- Immune to electromagnetic disturbances
- Zb type contact blocks
- Current Ith = 10A
- Rated insulation voltage Ui = 500V
- UL, CSA, CE
- Conform with IEC 947-5-1 (EN 60947-5-1)

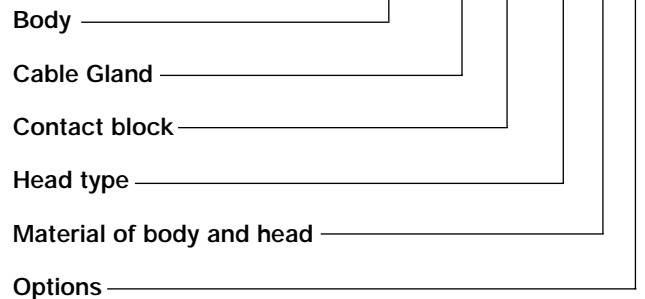
Product Description

They are developed in order to be used for following operations:
Ideal for detection and monitoring of faults in hoisting machines, electric lifts, freight elevators, escalators, conveyor belts, etc.
With manual reset comply with the requirements of standard EN 418 (safety of machinery - emergency stop). After actuating the

control device and overshooting the latching point, the N.C. safety contact(s) remain in the open position. Return to the initial operating state takes place by voluntary action on the pull button reset.
To detect or to monitor if a moving part is exceeding its allowed travelling path, and stop the equipment in case of malfunctioning.

Ordering Key

PS42K-PS11RT-T00



Description of the key codes

Body

PS21K | PS 30mm (fix 20/22mm) 1 cable inlet with button reset
PS42K | PS 50mm (fix 40/42mm) 2 cable inlet with button reset

Cable Gland

M | M20
P | PG13.5
B | PG11
A | M16
N | 1/2 NPT

Contact block

S02 | 2NC snap(+)
S11 | 1NO+1NC snap(+)
T02 | 2NC slow(+)
T11 | 1NO+1NC slow(+)

Head type

P0 | metal plain PLUNGER
PR | metal roller PLUNGER
R3 | adj LEVER with stell ball bearing
R4 | plastic roller LEVER on metal PLUNGER (left) (only for PS21K)
LR | steel PLUNGER with nylon roller (only for PS42K)
RT | nylon roller LEVER

Material of body and head

T | Thermoplastic Body and Thermoplastic head
Y | Metal Body and Thermoplastic head

Options

00 | no option

Technical Data

Standards

Certifications – Approvals

Air temperature near the device

- during operation °C
- for storage °C

Climatic withstand

Mounting positions

Shock withstand (according to IEC 68-2-27 and 60068-2-27) g

Resistance to vibrations (acc.to IEC 68-2-6 and EN 60068-2-6)g

Protection against electrical shocks (acc.to IEC 536)

Degree of protection (according to IEC 529 and EN 60529)

Consistency (measured over 1 million operations)

Plastic Body

Metal body

IEC 60947-1, IEC 60947-5-1, EN 60947-1, EN 60947-5-1,
UL508 and CSA C22-2 n°14
UL – CSA

-25 ... +70

-30 ... +80

According to IEC 68-2-3 and salty mist according to IEC 68-2-11

All positions are authorized

50g (1/2sinusoidal shock for 11 ms) no change in contact position

25g (10 ... 500Hz) no change in position of contacts > 100µs

Class II

Class I

IP65

IP66

0.1 mm (upon closing point)

Electrical Data

Rated insulation voltage U_i

-according to IEC 60947-1 and EN 60947-1

-according to UL 508, CSA C22-2 n°14

Rated impulse withstand voltage U_{imp}

kV

(according to IEC 60947-1 and EN 60947-1)

Conventional enclosed thermal current I_{the}

A

(according to IEC 60947-1 and EN 60947-5-1) ($\theta \leq 40^\circ\text{C}$)

Short-circuit protection - gG type fuses

A

Rated operational current

I_e / AC-15 - acc.to IEC 60947-5-1

24Vac (50/60 Hz)	A
130Vac (50/60 Hz)	A
230Vac (50/60 Hz)	A
240Vac (50/60 Hz)	A
400Vac (50/60 Hz)	A

- acc.to UL 508, CSA C22 n°14

I_e / DC-13 - acc.to IEC 60947-5-1

24Vdc	A
110Vdc	A
250Vdc	A

- acc.to UL 508, CSA C22 n°14

Electrical durability (according to IEC 60497-5-1 annex C)

- max. switching frequency Cycles/h

- load factor

Connecting data of contact blocks

Connecting terminals

Connecting capacity 1 or 2 x mm² / AWG

Terminal marking

Positivity

500V (degree of pollution 3)

A 600 Q600

400V (degree of pollution 3)

A 300 Q 300

6

10

10

10

5.5

3.1

3

1.8

A 600

A 300

2.8

0.6

0,27

Q 600

Q 300

Utilization categories AC-15 and DC-13 (see curves and value below)

3600

0.5

M3,5 (+,-) pozidriv 2 screw with cable clamp

0,5mm² / AWG 20 to 2,5mm² / AWG 14

According to EN 50013

Contacts with positive opening operation as per IEC 60947-5-1 chapter 3

Diagram for snap action contact:

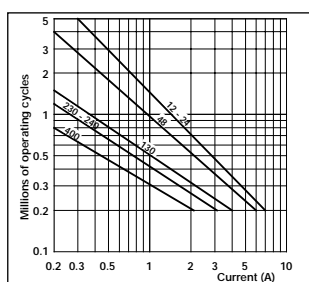
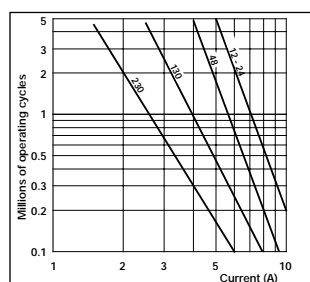


Diagram for slow action contact:



Electrical durability for DC-13 utilization category

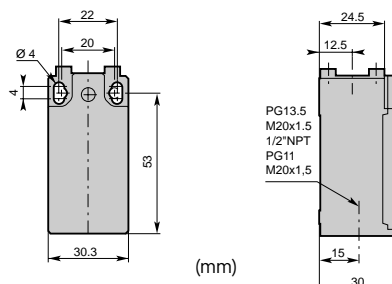
Power breaking for a durability of 5 million operating cycles		
	Snap action	Slow action
Voltage 24V	9,5W	12W
Voltage 48V	6,8W	9W
Voltage 110V	3,6W	6W

Limit Switches - Safety Type (PS21K) Plastic Body IP65



▣ Cable Gland

- P = one cable inlet PG13.5 cable gland
- M = one cable inlet M20x1.5 cable gland
- N = one cable inlet 1/2" NPT cable gland
- B = one cable inlet PG11 cable gland
- A = one cable inlet M16x1.5 cable gland



▲ Contact block (Zb type)

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / \Rightarrow (NC)	EN 50047 / \Rightarrow	Steel plunger with reset	PS21K- \square \blacktriangle P0-T00
Max. Actuation speed	0.5ms	Code	
Min. force or torque	9N / 44Nm		
Weight	97g		

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

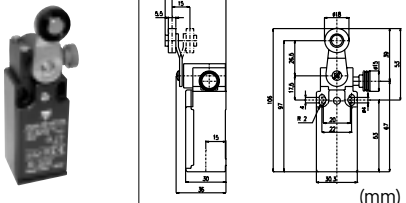
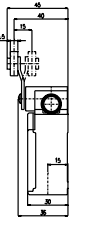


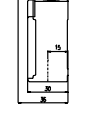




Conformity / \Rightarrow (NC)	EN 50047 / \Rightarrow	Steel plunger with nylon roller with reset	PS21K- \square \blacktriangle PR-T00
Max. Actuation speed	0.3ms	Code	
Min. force or torque	12N / 41Nm		
Weight	99g		

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / \Rightarrow (NC)	EN 50047 / \Rightarrow	Plastic roller lever on metal plunger with reset	PS21K- \square \blacktriangle R3-T00
Max. Actuation speed	1.0ms	Code	
Min. force or torque	7Nm / 24Nm		
Weight	102g		

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / \Rightarrow (NC)	EN 50047 / \Rightarrow	Plastic roller lever on metal plunger with reset	PS21K- \square \blacktriangle R4-T00
Max. Actuation speed	1.0ms	Code	
Min. force or torque	7Nm / 24Nm		
Weight	103g		

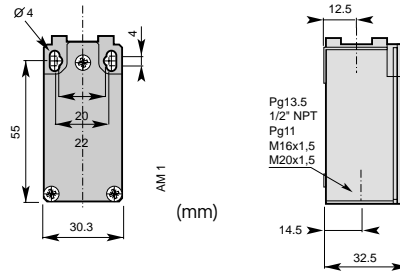
		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action (mm)		T02 (2NC) Slow Action	
Conformity / (NC)		EN 50047 / (NC)		Lever with nylon roller with reset	
Max. Actuation speed		1.5ms		Code	
Min. force or torque		0.10N / 0.32Nm		PS21K-RT-T00	
Weight		102g			

Limit Switches - Safety Type (PS21K) Metal Body IP66

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▣ Cable Gland

- P = one cable inlet PG13.5 cable gland
- M = one cable inlet M20x1.5 cable gland
- N = one cable inlet 1/2" NPT cable gland
- B = one cable inlet PG11 cable gland
- A = one cable inlet M16x1.5 cable gland



▲ Contact block (Zb type)

			S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
			T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / (NC)	EN 50047 / (NC)	Steel plunger with reset	PS21K-▣▲P0-Y00
Max. Actuation speed	0.5ms	Code	
Min. force or torque	9N / 44Nm		
Weight	193g		

			S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
			T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	


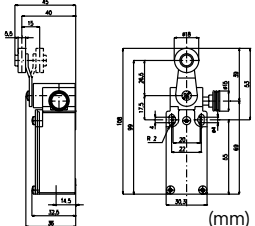




Conformity / (NC)	EN 50047 / (NC)	Steel plunger with nylon roller with reset	PS21K-▣▲PR-Y00
Max. Actuation speed	0.3ms	Code	
Min. force or torque	12N / 41Nm		
Weight	196g		

			S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
			T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / (NC)	EN 50047 / (NC)	Plastic roller lever on metal plunger with reset	PS21K-▣▲R3-Y00
Max. Actuation speed	1.0ms	Code	
Min. force or torque	7Nm / 24Nm		
Weight	199g		

			S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
			T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / (NC)	EN 50047 / (NC)	Plastic roller lever on metal plunger with reset	PS21K-▣▲R4-Y00
Max. Actuation speed	1.0ms	Code	
Min. force or torque	7Nm / 24Nm		
Weight	199g		

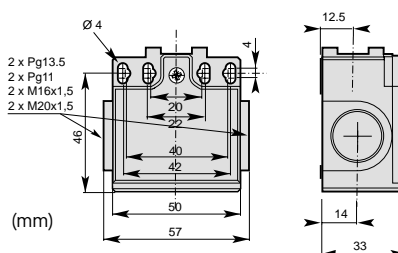
		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	
Conformity / \rightarrow (NC) EN 50047 / \rightarrow		Lever with nylon roller with reset Code		PS21K-$\square$$\blacktriangle$RT-Y00	
Max. Actuation speed 1.5ms					
Min. force or torque 0.10N / 0.32Nm					
Weight 198g					

Limit Switches - Safety Type (PS42K) Plastic Body IP65



▣ Cable Gland

- P = two cable inlet PG13.5 cable gland
- M = two cable inlet M20x1.5 cable gland
- N = two cable inlet 1/2" NPT cable gland
- B = two cable inlet PG11 cable gland
- A = two cable inlet M16x1.5 cable gland




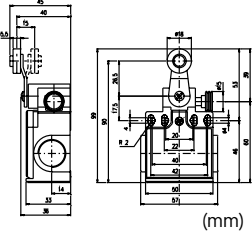




▲ Contact block (Zb type)

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	
Conformity / (NC) EN 50047 / (NC) Max. Actuation speed 0.5ms Min. force or torque 9N / 44Nm Weight 126g		Steel plunger with reset Code PS42K- ▣ ▲ P0 -T00			

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	
Conformity / (NC) EN 50047 / (NC) Max. Actuation speed 0.3ms Min. force or torque 12N / 41Nm Weight 128g		Steel plunger with nylon roller with reset Code PS42K- ▣ ▲ PR -T00			

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	
Conformity / (NC) EN 50047 / (NC) Max. Actuation speed 1.0ms Min. force or torque 7Nm / 24Nm Weight 131g		Plastic roller lever on metal plunger with reset Code PS42K- ▣ ▲ R3 -T00			

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	
Conformity / (NC) EN 50047 / (NC) Max. Actuation speed 1.0ms Min. force or torque 7Nm / 24Nm Weight 138g		Plastic roller lever on metal plunger with reset Code PS42K- ▣ ▲ LR -T00			

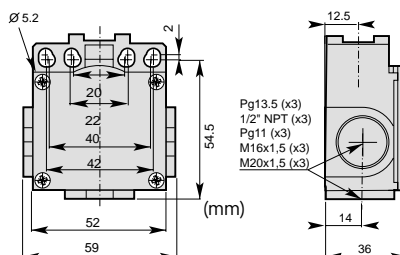
	 <p>(mm)</p>	S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	
Conformity / (NC) EN 50047 / (NC)		Lever with nylon roller with reset		Code	
Max. Actuation speed 1.5ms		PS42K-<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> RT-T00			
Min. force or torque 0.10N / 0.32Nm					
Weight 129g					

Limit Switches - Safety Type (PS42K) Metal Body IP66



▣ Cable Gland

- P = three cable inlet PG13.5 cable gland
- M = three cable inlet M20x1.5 cable gland
- N = three cable inlet 1/2" NPT cable gland
- B = three cable inlet PG11 cable gland
- A = three cable inlet M16x1.5 cable gland



▲ Contact block (Zb type)

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / (NC)	EN 50047 / (NC)	Steel plunger with reset	Code	PS42K-P0-Y00
Max. Actuation speed	0.5ms			
Min. force or torque	9N / 44Nm			
Weight	295g			

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

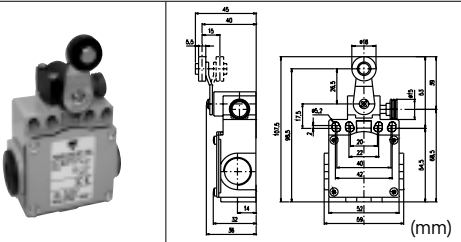




Conformity / (NC)	EN 50047 / (NC)	Steel plunger with nylon roller with reset	Code	PS42K-PR-Y00
Max. Actuation speed	0.3ms			
Min. force or torque	12N / 41Nm			
Weight	298g			

		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / (NC)	EN 50047 / (NC)	Plastic roller lever on metal plunger with reset	Code	PS42K-R3-Y00
Max. Actuation speed	1.0ms			
Min. force or torque	7Nm / 24Nm			
Weight	301g			

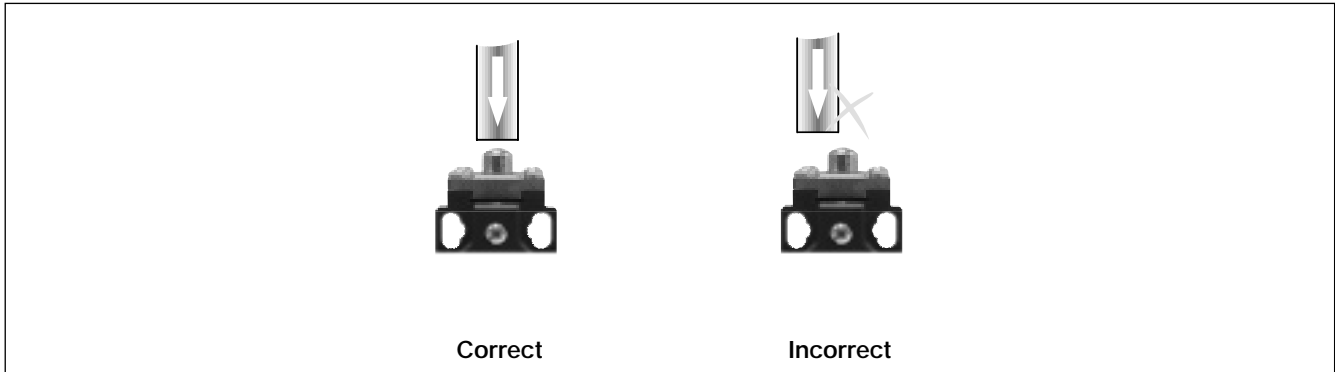
		S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
		T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	

Conformity / (NC)	EN 50047 / (NC)	Plastic roller lever on metal plunger with reset	Code	PS42K-LR-Y00
Max. Actuation speed	1.0ms			
Min. force or torque	7Nm / 24Nm			
Weight	307g			

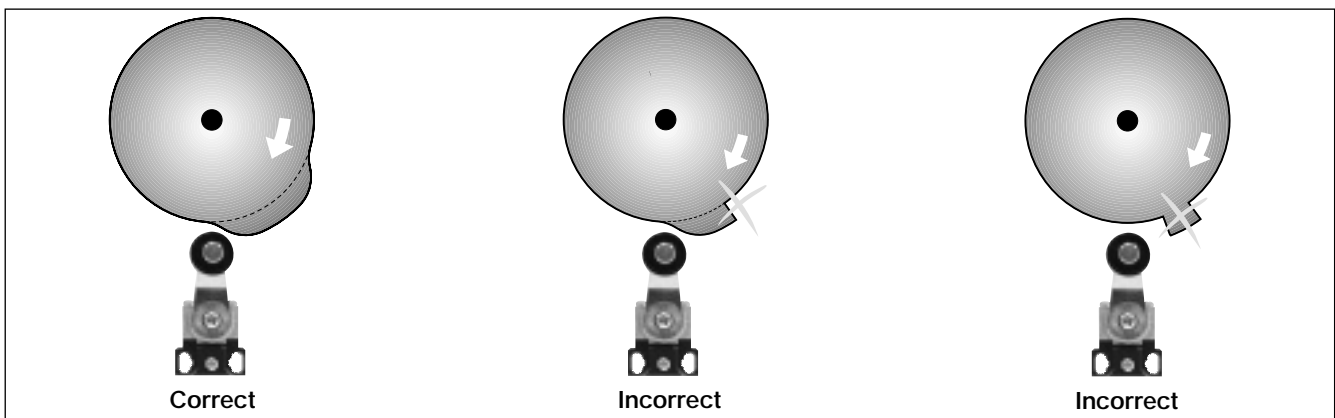
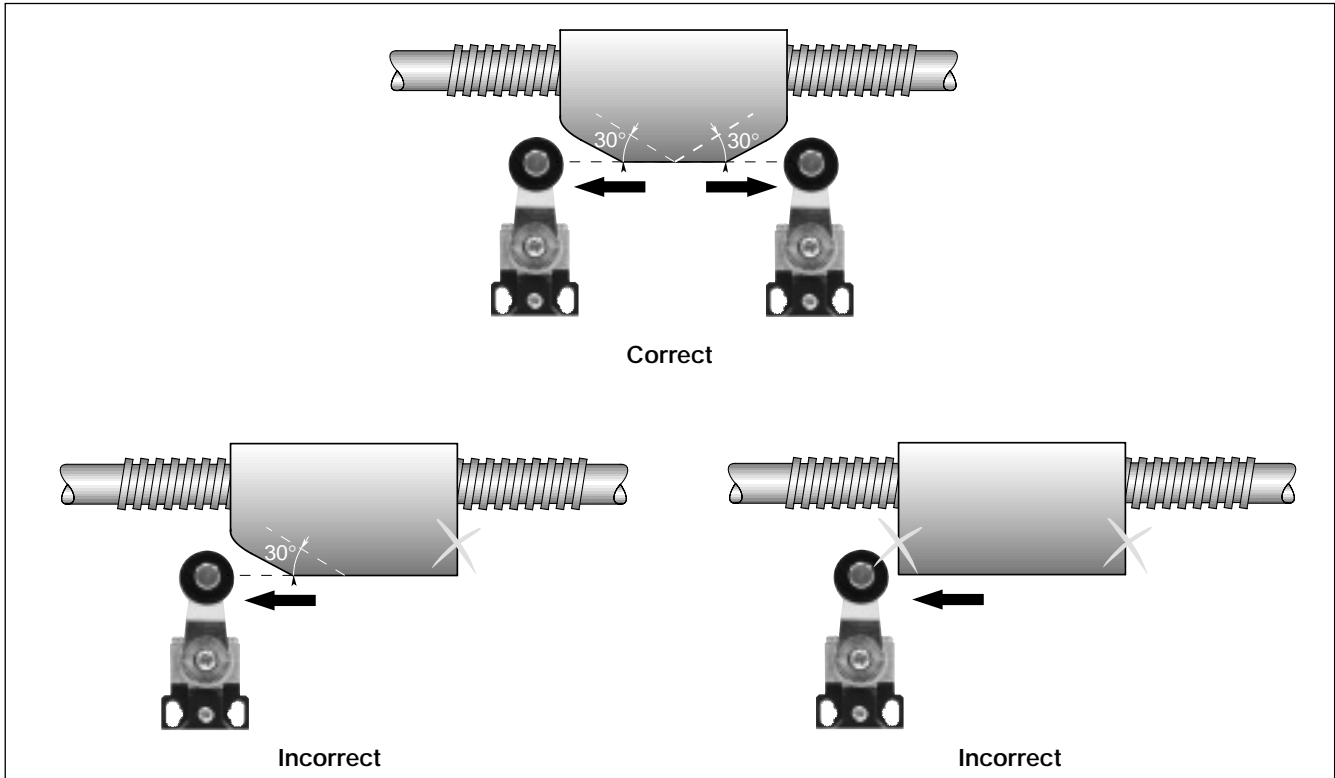
	S11 (1NO+1NC) Snap Action		S02 (2NC) Snap Action	
	T11 (1NO+1NC) Non overlapping Slow action		T02 (2NC) Slow Action	
Conformity / \rightarrow (NC) EN 50047 / \rightarrow		Lever with nylon roller with reset Code		PS42K-$\bullet$$\blacktriangle$RT-Y00
Max. Actuation speed 1.5ms				
Min. force or torque 0.10N / 0.32Nm				
Weight 299g				

Utilization precautions

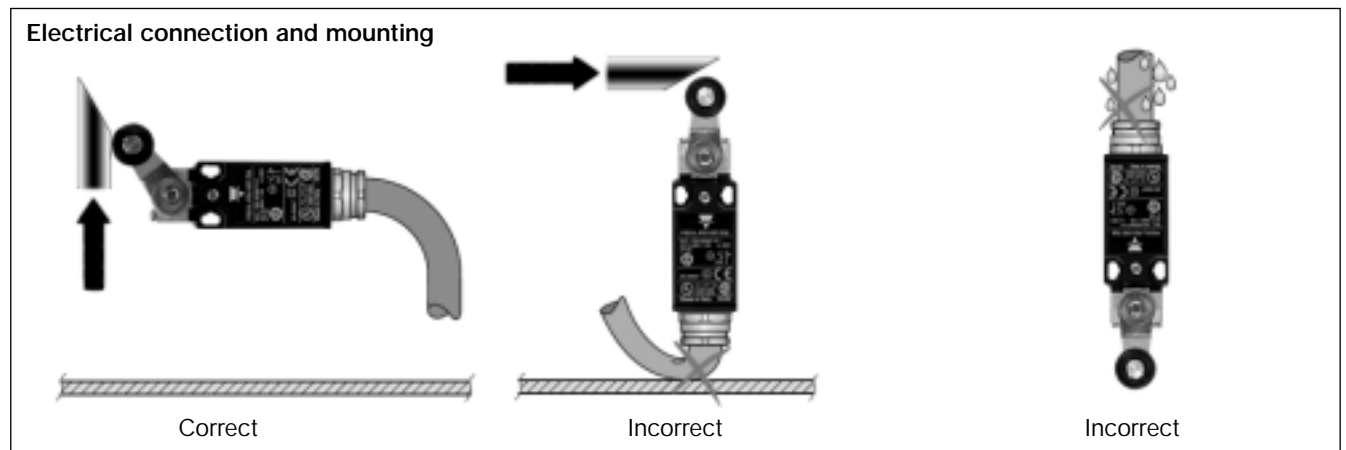
Plain plunger



Roller plunger or Roller lever



Utilization precautions



Adjustement

