

# Limit Switches - Limit Type Plastic Body IP65



- Double Insulation □
- Degree of protection IP65
- Reinforced UL-V0 thermoplastic fiber-glass body
- Positive Opening Operation →
- 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)

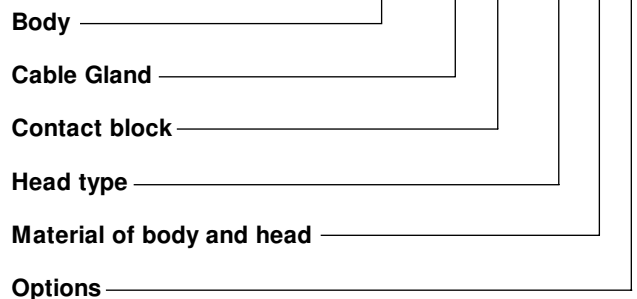
## Product Description

They are developed in order to be used for following operations:

- Presence/Absence
- Positioning and travel limit
- Objects passing/counting

## Ordering Key

**PS2 1 L-PS1 1 RT-T00**



## Description of the key codes

### Body

PS21L | PS 30mm (fix 20/22mm) 1 cable inlet for General Purpose

### Cable Gland

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

### Contact block

O11	1NO+1NC overlap slow(+)
S02	2NC snap(+)
S11	1NO+1NC snap(+)
T02	2NC slow(+)
T11	1NO+1NC slow(+)
T20	2NO slow

### Material of body and head

T | Thermoplastic Body and Thermoplastic head

### Options

00 | no option

### Head type

BE	nylon roller ext bent LEVER
BR	nylon roller int bent LEVER
L3	adj square (3x3) steel rod LEVER
LA	adj Ø3 rod LEVER stainless steel rod
LB	nylon actuator with stainless steel spring
LF	adj fiberglass rod LEVER Ø3
LG	adj fiberglass rod LEVER Ø6
LN	adj nylon rod LEVER
LO	steel PLUNGER with nylon roller+gasket
LP	multidir nylon actuator with stainless steel spring
LR	steel PLUNGER with nylon roller
LS	stainless steel spring multidir actuator
LW	Stainless stell spring multidir actuator (cat Whisker)
LZ	Stainless stell spring actuator
N6	pull wire for simple stop
P0	metal plain PLUNGER
P1	nylon roller PLUNGER
PH	metal PLUNGER +gasket
PN	nylon plain PLUNGER
PR	metal roller PLUNGER
R1	adj LEVER with nylon roller
RH	plastic roller LEVER on metal PLUNGER (left)
RJ	plastic roller LEVER on metal PLUNGER +gasket (left)
RL	plastic roller LEVER on plastic PLUNGER (left)
RR	plastic roller LEVER on plastic PLUNGER (right)
RT	nylon roller LEVER
RV	plastic roller LEVER on metal PLUNGER (right)
RW	plastic roller LEVER on metal PLUNGER +gasket (right)
W0	Ø50 rubber roller LEVER
W1	adj LEVER with Ø50 rubber roller
W2	adj LEVER with adj Ø50 rubber roller

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

**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)

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\*

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

Class II

IP65

0.1 mm (upon closing point)

\* except for PS21/PS42 with head type W0, W1: 25g.

## 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 60947-5-1 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

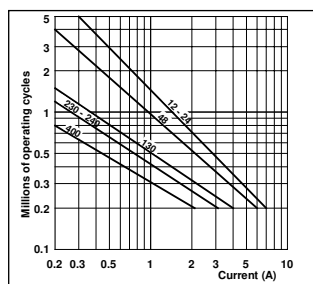
Connecting terminals

Connecting capacity 1 or 2 x mm<sup>2</sup> / AWG

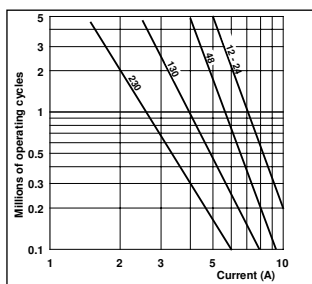
Terminal marking

### Positivity

### 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

500V (degree of pollution 3)

A 600, Q 600

6

10

10

10

5.5

3.1

3

1.8

A 600

2.8

0.6

0,27

Q 600

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

3600

0,5

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

0,5mm<sup>2</sup> / AWG 20 to 2,5mm<sup>2</sup> / AWG 14

According to EN 50013

Contacts with positive opening operation as per

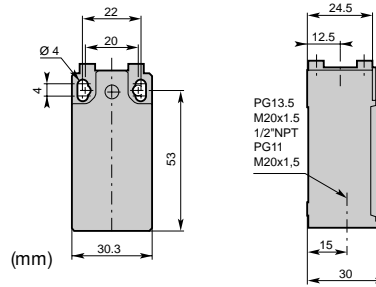
IEC 60947-5-1 chapter 3

# Limit Switches - Limit Type (PS21) Plastic Body IP65

CARLO GAVAZZI

## • 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)

<b>S11</b> (1NO+1NC) Snap Action		<b>T11</b> (1NO+1NC) Non overlapping Slow action		<b>O11</b> (1NO+1NC) Overlapping Slow Action	
<b>T02</b> (2NC) Slow Action		<b>T20</b> (2NO) Slow Action		<b>S02</b> (2NC) Snap Action	

		<b>S11</b>	<b>T11</b>	<b>O11</b>
		<b>S11</b>	<b>T11</b>	<b>O11</b>
		<b>S11</b>	<b>T11</b>	<b>O11</b>
		<b>S11</b>	<b>T11</b>	<b>O11</b>

**Conformity / (NC)** EN 50047 / (C)  
**Max. Actuation speed** 0.5ms  
**Min. force or torque** 15N / 30Nm  
**Weight** 70g

**Plain Plunger**  
**Code** Nylon plunger  
 Metal plunger

**PS21L- (C) (A) PN-T00**  
**PS21L- (C) (A) P0-T00**

**Conformity / (NC)** EN 50047 / (C)  
**Max. Actuation speed** 0.3ms  
**Min. force or torque** 12N / 30Nm  
**Weight** 75g

**Roller Plunger**  
**Code** Metal roller  
 Nylon roller

**PS21L- (C) (A) PR-T00**  
**PS21L- (C) (A) P1-T00**

**Conformity / (NC)** EN 50047 / (C)  
**Max. Actuation speed** 0.5ms  
**Min. force or torque** 15N / 30Nm  
**Weight** 70g

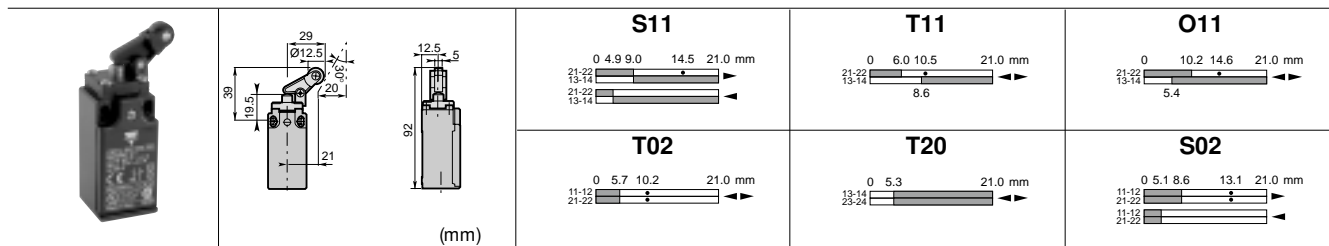
**Metal plunger with dust protection cup**  
**Code**

**PS21L- (C) (A) PH-T00**

**Conformity / (NC)** EN 50047 / (C)  
**Max. Actuation speed** 1.0ms  
**Min. force or torque** 7N / 24Nm  
**Weight** 75g

**Plastic roller lever**  
**Code** on plastic plunger  
 on metal plunger

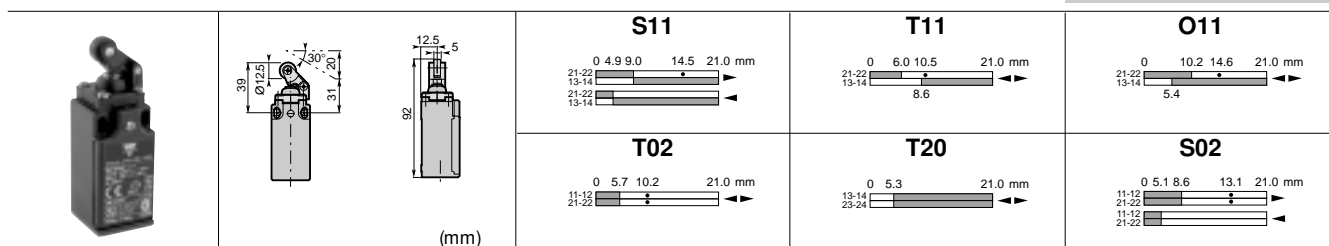
**PS21L- (C) (A) RL-T00**  
**PS21L- (C) (A) RH-T00**



Conformity / (NC) /  
 Max. Actuation speed 1.0ms  
 Min. force or torque 7N / 24Nm  
 Weight 80g

Plastic roller lever  
 Code on metal plunger  
 on plastic plunger

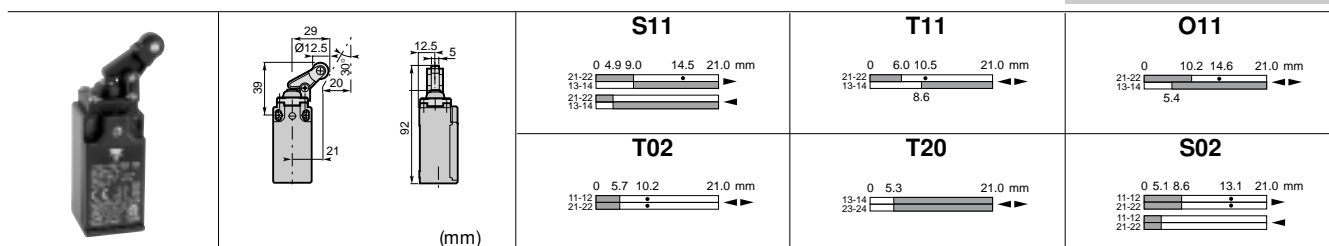
PS21L- RV-T00  
 PS21L- RR-T00



Conformity / (NC) EN 50047 /  
 Max. Actuation speed 1.0ms  
 Min. force or torque 7N / 24Nm  
 Weight 75g

Plastic roller lever on metal plunger with dust protection cup  
 Code

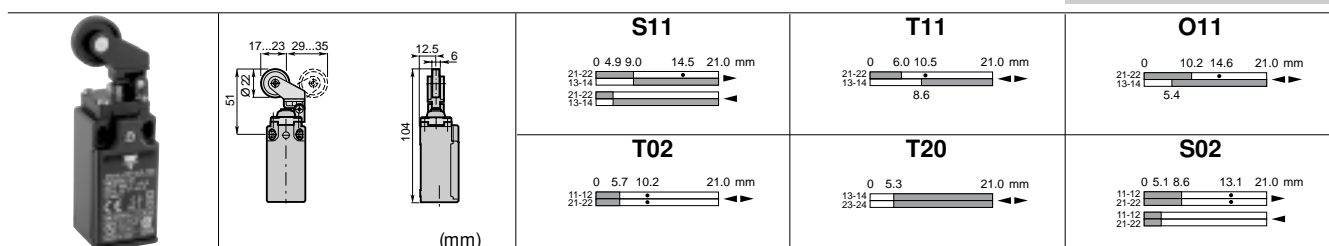
PS21L- RJ-T00



Conformity / /  
 Max. Actuation speed 1.0ms  
 Min. force or torque 7N / 24Nm  
 Weight 80g

Plastic roller lever on metal plunger with dust protection cup  
 Code

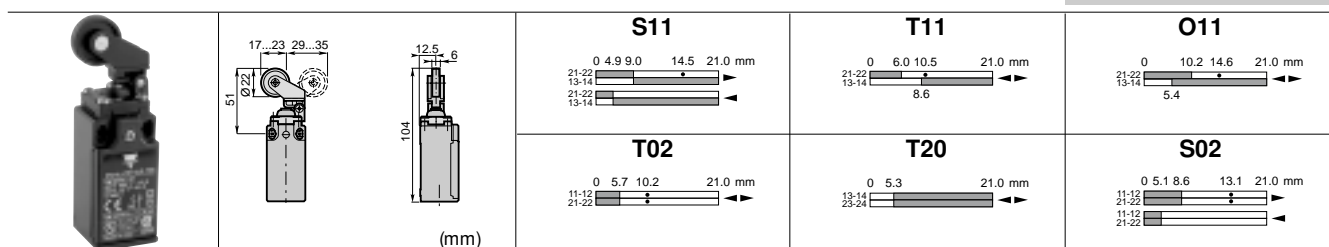
PS21L- RW-T00



Conformity / (NC) EN 50047 /  
 Max. Actuation speed 1.0ms  
 Min. force or torque 7N / 24Nm  
 Weight 80g

Adjustable plastic roller lever on metal plunger  
 Code

PS21L- LR-T00



Conformity / (NC) EN 50047 /  
 Max. Actuation speed 1.0ms  
 Min. force or torque 7N / 24Nm  
 Weight 80g

Adj. plastic roller lever on metal plunger with dust prot. cup  
 Code

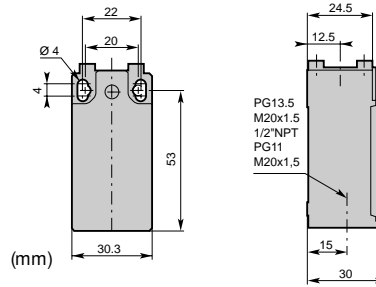
PS21L- LO-T00

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## • Cable Gland

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- B** = one cable inlet PG11 cable gland
- A** = one cable inlet M16x1.5 cable gland



## ▲ Contact block (Zb type)

<b>S11</b> (1NO+1NC) Snap Action		<b>T11</b> (1NO+1NC) Non overlapping Slow action		<b>O11</b> (1NO+1NC) Overlapping Slow Action	
<b>T02</b> (2NC) Slow Action		<b>T20</b> (2NO) Slow Action		<b>S02</b> (2NC) Snap Action	

		<b>S11</b>	<b>T11</b>	<b>O11</b>
		<b>T02</b>	<b>T20</b>	<b>S02</b>

<b>Conformity / (NC)</b>	EN 50047 / (NC)	<b>Ø 18 Nylon roller lever</b>	<b>PS21L-●▲RT-T00</b>
<b>Max. Actuation speed</b>	1.5ms	<b>Code</b>	
<b>Min. force or torque</b>	0.10N / 0.32Nm		
<b>Weight</b>	95g		

		<b>S11</b>	<b>T11</b>	<b>O11</b>
		<b>T02</b>	<b>T20</b>	<b>S02</b>

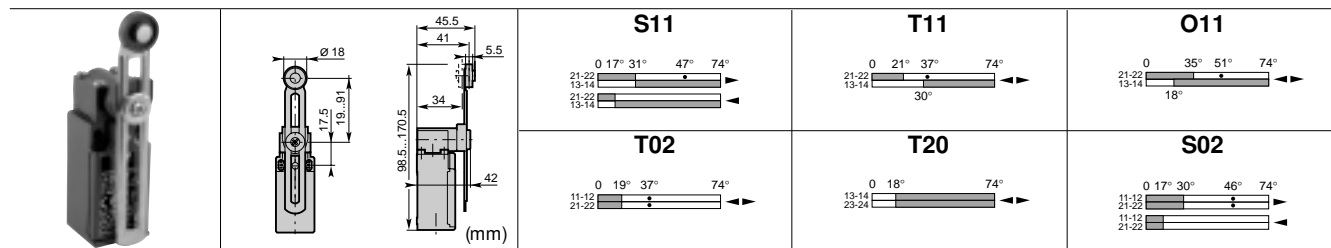
<b>Conformity / (NC)</b>	/ (NC)	<b>Ø 50 Rubber roller lever</b>	<b>PS21L-●▲W0-T00</b>
<b>Max. Actuation speed</b>	1.5ms	<b>Code</b>	
<b>Min. force or torque</b>	0.10N / 0.32Nm		
<b>Weight</b>	115g		

		<b>S11</b>	<b>T11</b>	<b>O11</b>
		<b>T02</b>	<b>T20</b>	<b>S02</b>

<b>Conformity / (NC)</b>	/ (NC)	<b>Ø 18 Nylon roller lever</b>	<b>PS21L-●▲BR-T00</b>
<b>Max. Actuation speed</b>	1.5ms	<b>Code</b>	
<b>Min. force or torque</b>	0.10N / 0.32Nm		
<b>Weight</b>	95g		

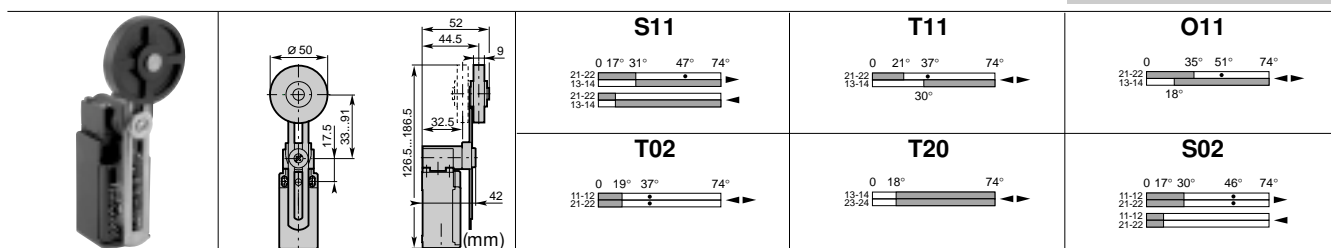
		<b>S11</b>	<b>T11</b>	<b>O11</b>
		<b>T02</b>	<b>T20</b>	<b>S02</b>

<b>Conformity / (NC)</b>	/ (NC)	<b>Ø 18 Nylon roller lever</b>	<b>PS21L-●▲BE-T00</b>
<b>Max. Actuation speed</b>	1.5ms	<b>Code</b>	
<b>Min. force or torque</b>	0.10N / 0.32Nm		
<b>Weight</b>	95g		



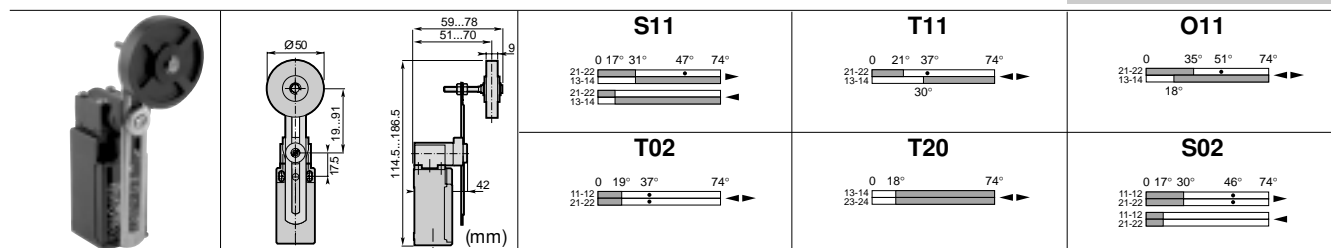
Conformity /  $\Rightarrow$  (NC) /  $\ominus$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 105g

Adjustable lever with Ø 18 nylon roller  
 Code PS21L-    R1-T00



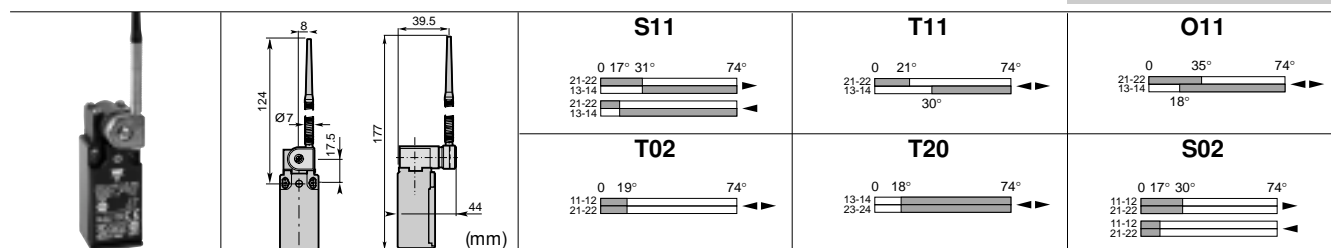
Conformity /  $\Rightarrow$  (NC) /  $\ominus$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 125g

Adjustable lever with Ø 50 rubber roller  
 Code PS21L-    W1-T00



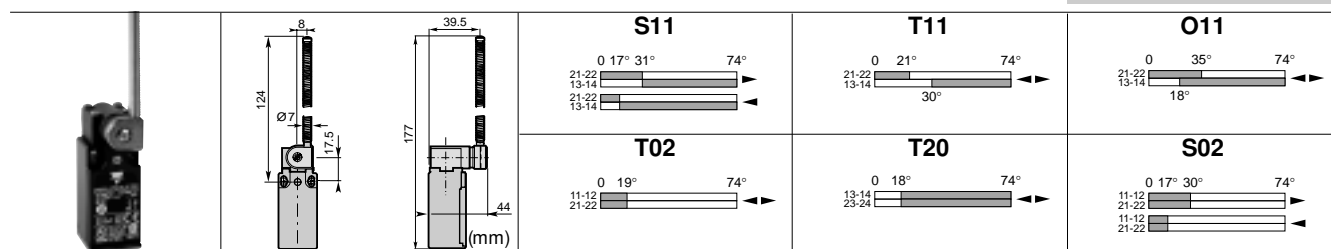
Conformity /  $\Rightarrow$  (NC) /  $\ominus$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 130g

Adjustable lever with adjustable Ø 50 rubber roller  
 Code PS21L-    W2-T00



Conformity /  $\Rightarrow$  (NC) /  $\ominus$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / -  
 Weight 105g

Nylon actuator with stainless steel spring  
 Code PS21L-    LB-T00



Conformity /  $\Rightarrow$  (NC) /  $\ominus$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / -  
 Weight 105g

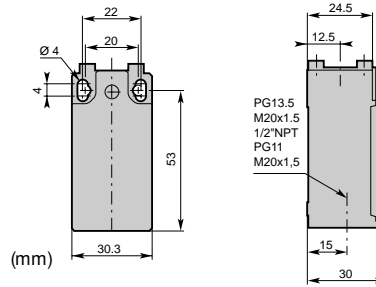
Stainless steel spring actuator  
 Code PS21L-    LZ-T00

# Limit Switches - Limit Type (PS21) Plastic Body IP65

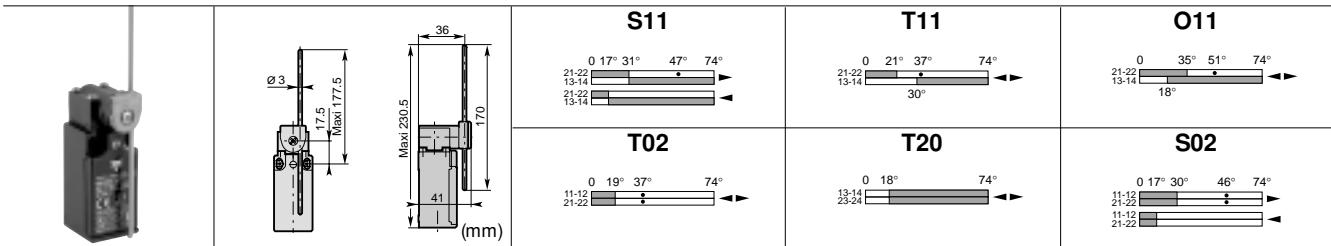
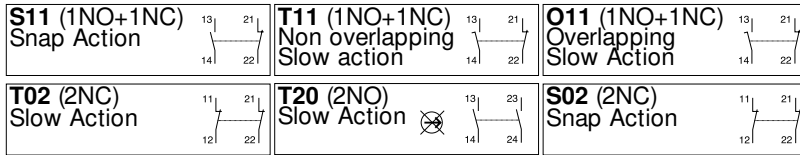


## • Cable Gland

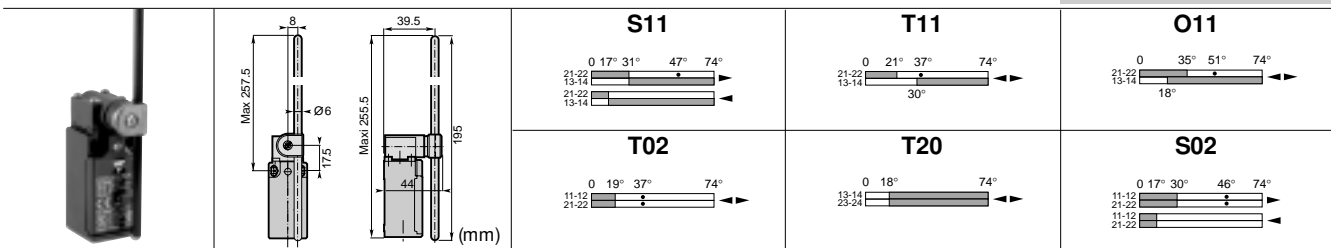
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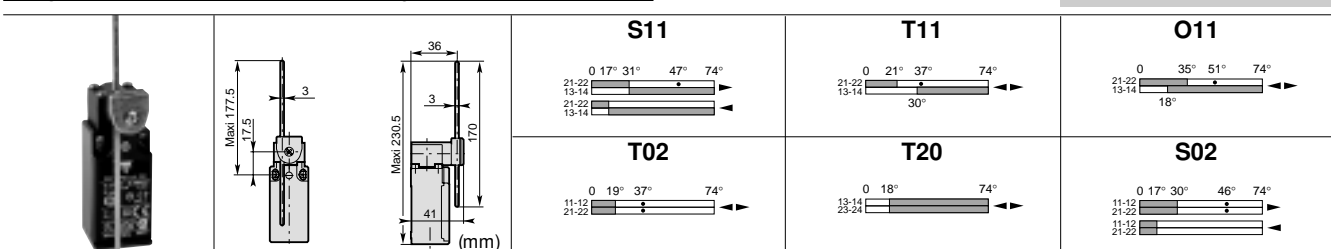
## ▲ Contact block (Zb type)



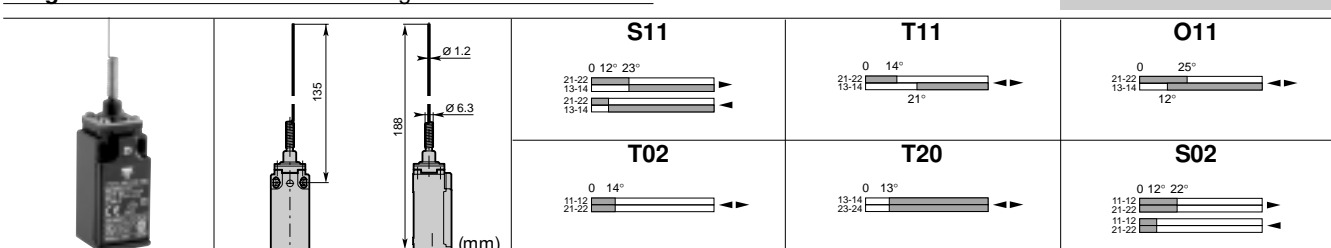
<b>Conformity /</b> (NC) / (NC)	<b>Max. Actuation speed</b> 1.5ms	<b>Adjustable Ø 3 rod lever</b>	<b>PS21L-03</b> LA-T00 PS21L-03 LF-T00
<b>Min. force or torque</b> 0.10N / 0.32	<b>Weight</b> 105g	<b>Code</b> stainless steel rod fiberglass rod	



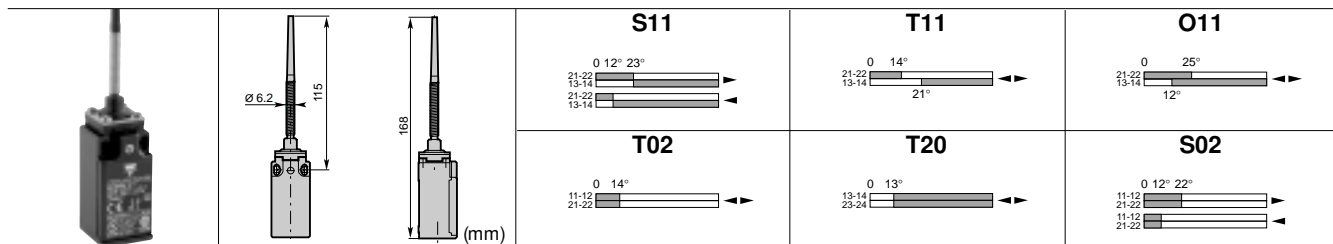
<b>Conformity /</b> (NC) / (NC)	<b>Max. Actuation speed</b> 1.5ms	<b>Adjustable Ø 6 rod lever</b>	<b>PS21L-06</b> LN-T00 PS21L-06 LG-T00
<b>Min. force or torque</b> 0.10N / 0.32Nm	<b>Weight</b> 115g	<b>Code</b> nylon rod fiberglass rod	



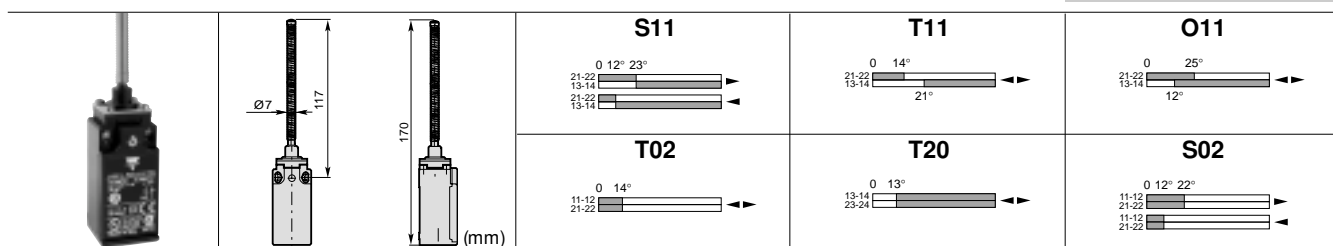
<b>Conformity /</b> (NC) / (NC)	<b>Max. Actuation speed</b> 1.5ms	<b>Adjustable square steel rod lever</b>	<b>PS21L-03</b> L3-T00
<b>Min. force or torque</b> 0.10N / 0.32Nm	<b>Weight</b> 105g	<b>Code</b>	



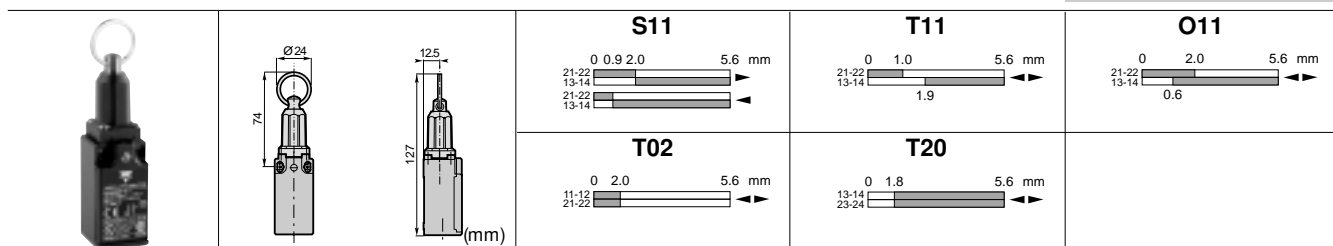
<b>Conformity /</b> (NC) / (NC)	<b>Max. Actuation speed</b> 1.0ms	<b>Stainless steel spring multidirectional actuator</b>	<b>PS21L-03</b> LW-T00
<b>Min. force or torque</b> 0.12N / -	<b>Weight</b> 80g	<b>Code</b>	



**Conformity / (NC)** / **Multidirectional nylon actuator with stainless steel spring**  
**Code** **PS21L- [ ] [ ] LP-T00**  
**Max. Actuation speed** 1.0ms  
**Min. force or torque** 0.12N / -  
**Weight** 85g



**Conformity / (NC)** / **Stainless steel spring multidirectional actuator**  
**Code** **PS21L- [ ] [ ] LS-T00**  
**Max. Actuation speed** 1.0ms  
**Min. force or torque** 0.12N / -  
**Weight** 90g

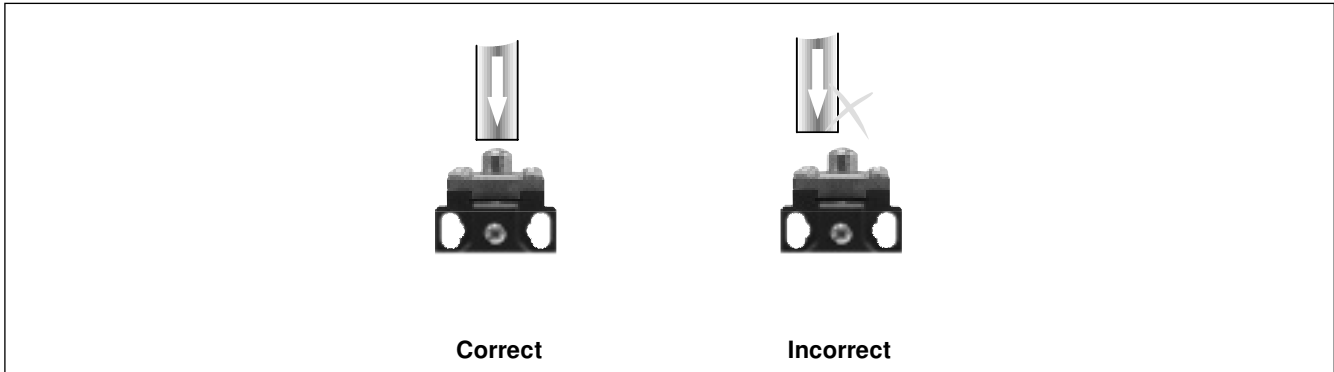


**Conformity / (NC)** / **Pull action with ring**  
**Code** **PS21L- [ ] [ ] N6-T00**  
**Max. Actuation speed** 0.5ms  
**Min. force or torque** 30N / -  
**Weight** 115g

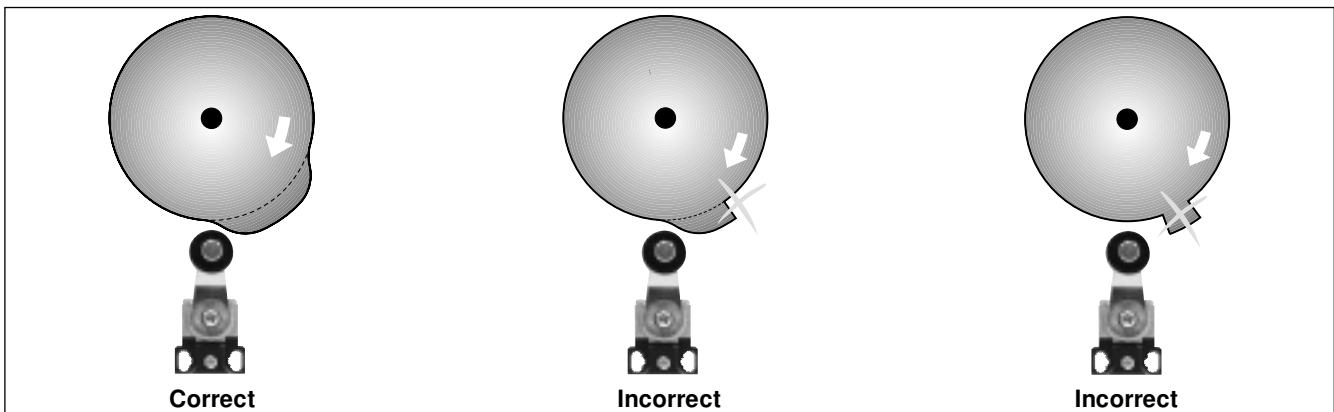
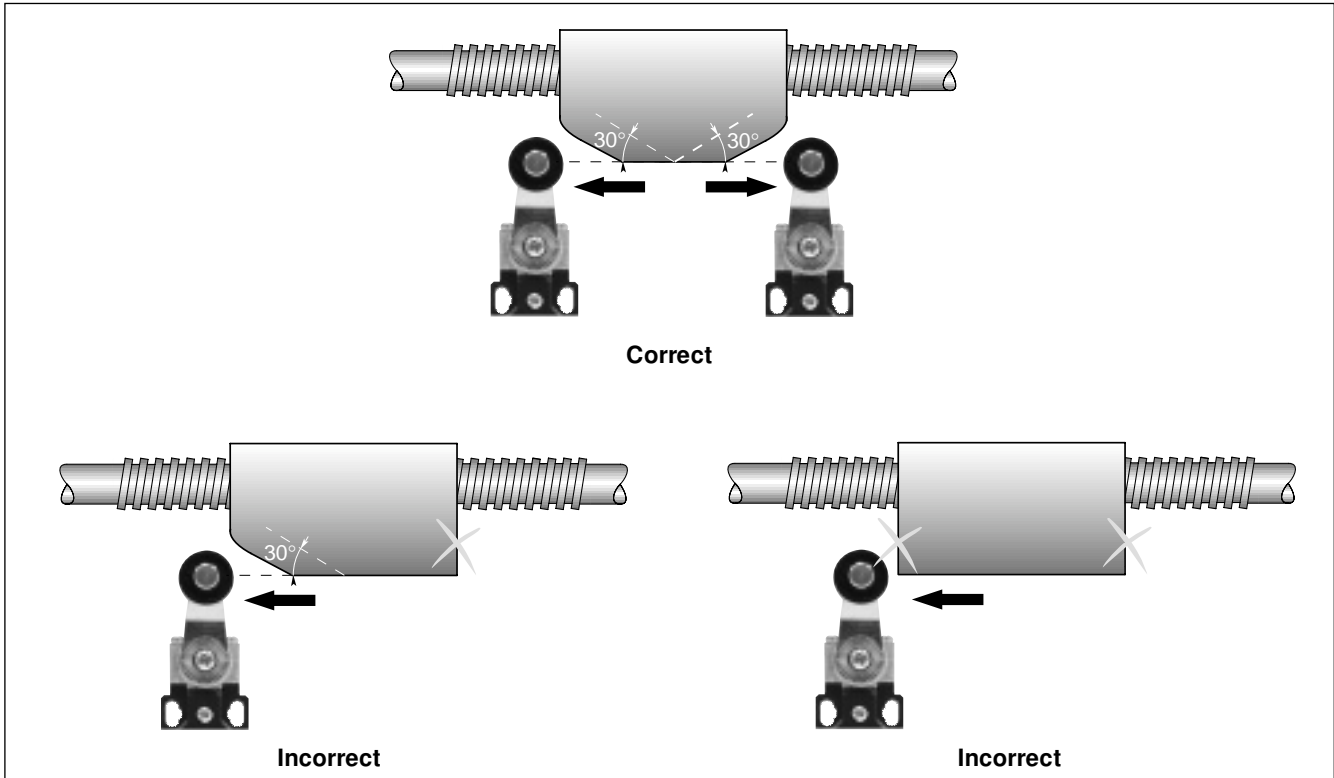


## Utilization precautions

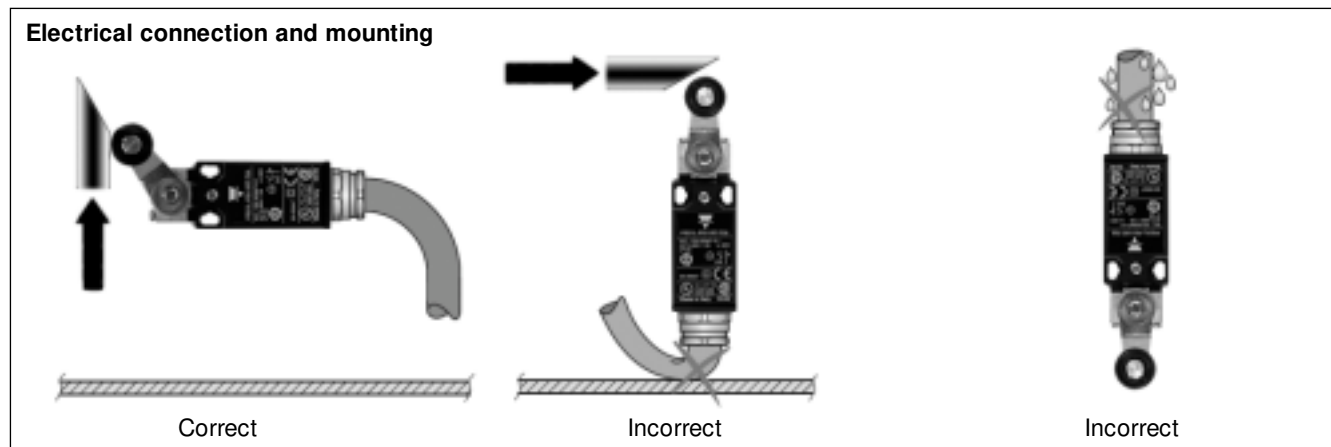
### Plain plunger



### Roller plunger or Roller lever



## Utilization precautions



## Adjustement

