

# Limit Switches - Limit Type Metal Body IP66



- High mechanical resistance
- Degree of protection IP66
- Zinc alloy (Zamack) 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)

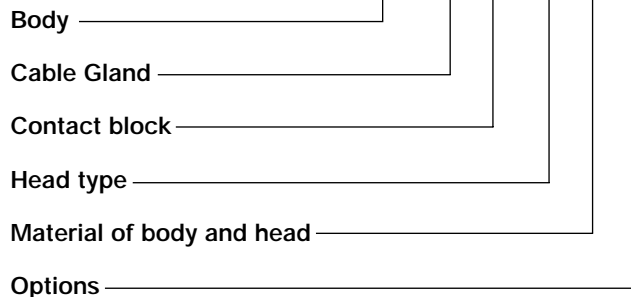
## Product Description

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

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

## Ordering Key

**PS21L-PS11RT-M00**



## 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

H	Thermoplastic Body and Metal head
M	Metal Body and Metal head

### Options

00	no option
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### Head type

BE	nylon roller ext bent LEVER
BR	nylon roller int bent LEVER
BM	metal roller bent LEVER
BO	ball roller 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
LZ	Stainless stell spring actuator
P0	metal plain PLUNGER
PR	metal roller PLUNGER
R1	adj LEVER with nylon roller
RM	metal roller LEVER
RO	roller LEVER steel ball bearing
RT	nylon roller LEVER
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 I

IP66

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**

400V (PS21, PS42), 500V (PS31, PS43) (degree of pollution 3)

A 300 Q 300 (PS21, PS42), A 600 Q 600 (PS31, PS43)

6

10

10

10

5.5

3.1

3

1.8

A 300 (PS21, PS42), A 600 (PS31, PS43)

2.8

0.6

0,27

Q 300 (PS21, PS42), Q 600 (PS31, PS43)

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

Diagram for snap action contact:

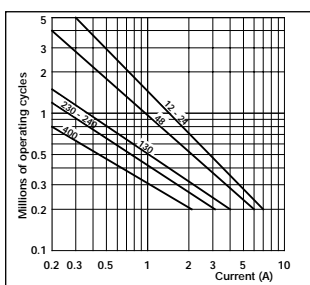
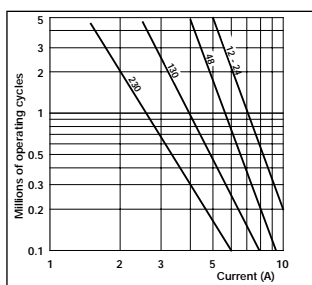


Diagram for slow action contact:



Electrical durability for DC-13 utilization category

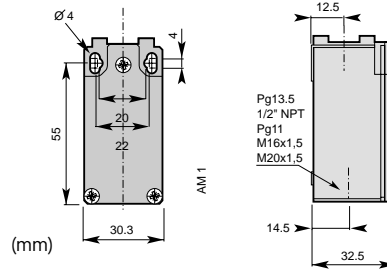
Power breaking for a durability of 5 million operating cycles		
	Snap action	Slow action
Voltage 24V	9,5W	12W
Voltage 48V	6,8W	9W
Voltage 110V	3,6W	6W

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

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

Conformity / (NC)	EN 50047 / (NC)
Max. Actuation speed	0.5ms
Min. force or torque	15N / 30Nm
Weight	180g

Plain Metal Plunger  
Code

PS21L-P0-M00

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

Conformity / (NC)	EN 50047 / (NC)
Max. Actuation speed	0.3ms
Min. force or torque	12N / 30Nm
Weight	190g

Roller Metal Plunger  
Code

PS21L-PR-M00

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

Conformity / (NC)	EN 50047 / (NC)
Max. Actuation speed	1.5ms
Min. force or torque	0.10N / 0.32Nm
Weight	235g

Ø 18 Nylon roller lever  
Code metal roller  
nylon roller

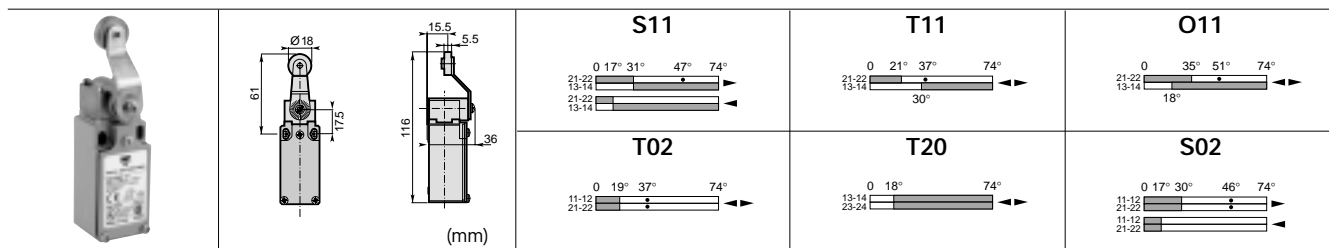
PS21L-RM-M00  
PS21L-RT-M00

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

Conformity / (NC)	EN 50047 / (NC)
Max. Actuation speed	1.5ms
Min. force or torque	0.10N / 0.32Nm
Weight	255g

Ø 50 Rubber roller lever  
Code

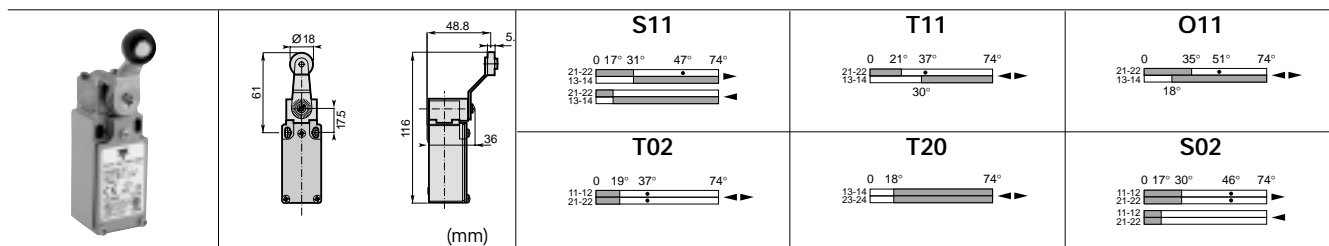
PS21L-W0-M00



Conformity /  $\Rightarrow$  (NC) /  $\Leftarrow$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 250g

**Ø 18 Roller lever**  
 Code metal roller  
 nylon roller

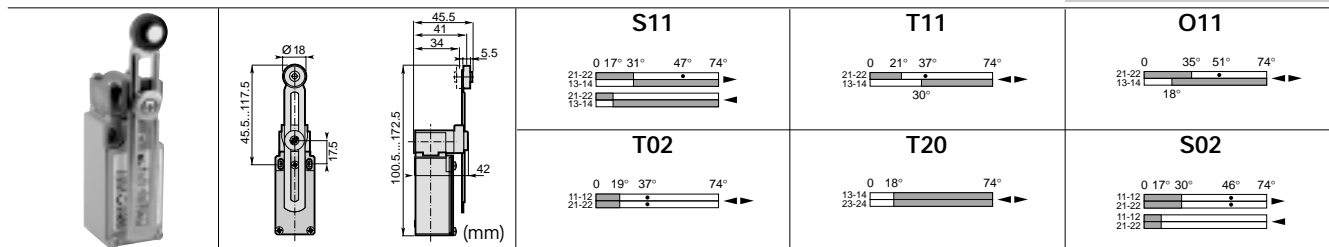
PS21L- BM-M00  
 PS21L- BR-M00



Conformity /  $\Rightarrow$  (NC) /  $\Leftarrow$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 250g

**Ø 18 Roller lever**  
 Code nylon roller

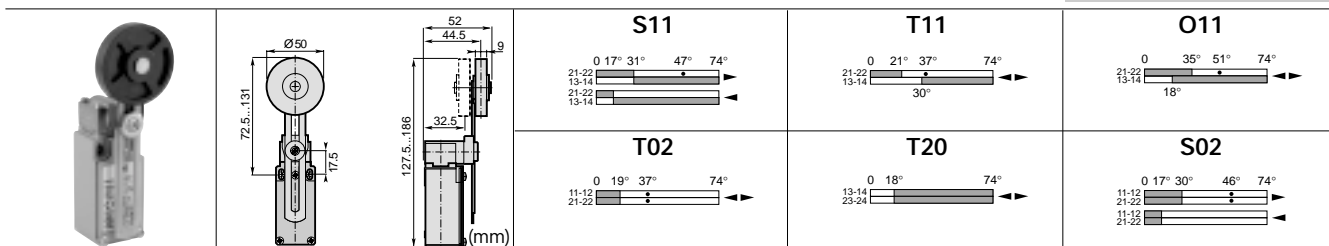
PS21L- BE-M00



Conformity /  $\Rightarrow$  (NC) /  $\Leftarrow$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 245g

**Adjustable lever with Ø 18 nylon roller**  
 Code

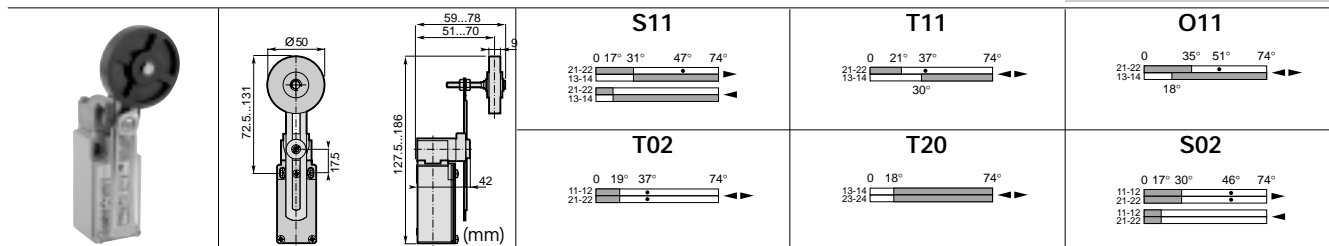
PS21L- R1-M00



Conformity /  $\Rightarrow$  (NC) /  $\Leftarrow$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 265g

**Adjustable lever with Ø 50 rubber roller**  
 Code

PS21L- W1-M00



Conformity /  $\Rightarrow$  (NC) /  $\Leftarrow$   
 Max. Actuation speed 1.5ms  
 Min. force or torque 0.10N / 0.32Nm  
 Weight 265g

**Adjustable lever with adjustable Ø 50 rubber roller**  
 Code

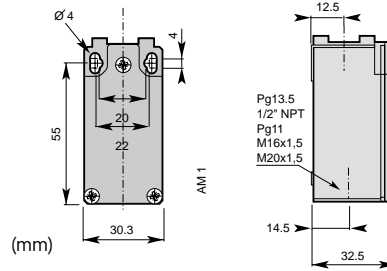
PS21L- W2-M00

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<b>T02 (2NC)</b> Slow Action		<b>T20 (2NO)</b> Slow Action		<b>S02 (2NC)</b> Snap Action	

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

Conformity /  $\rightarrow$  (NC) /

Max. Actuation speed	1.5ms
Min. force or torque	0.10N / -
Weight	245g

Stainless steel spring

Code nylon actuator  
stainless steel spring actuator

PS21L- LB-M00  
PS21L- LZ-M00

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

Conformity /  $\rightarrow$  (NC) /  $\rightarrow$

Max. Actuation speed	1.5ms
Min. force or torque	0.10N / 0.32
Weight	245g

Adjustable rod lever

Code stainless steel rod  $\varnothing$ 3  
fiberglass rod  $\varnothing$ 3  
square steel rod 3x3

PS21L- LA-M00  
PS21L- LF-M00  
PS21L- L3-M00

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

Conformity /  $\rightarrow$  (NC) /  $\rightarrow$

Max. Actuation speed	1.5ms
Min. force or torque	0.10N / 0.32Nm
Weight	255g

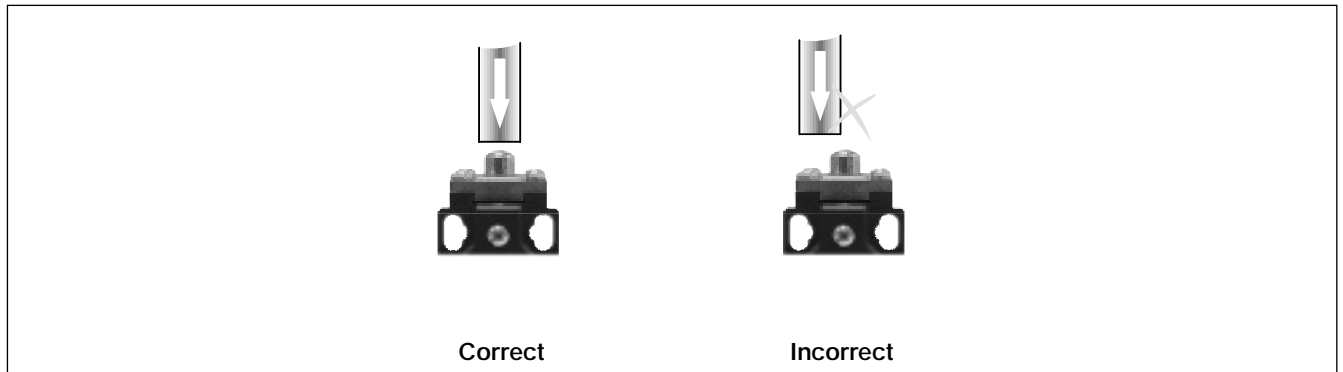
Adjustable  $\varnothing$  6 rod lever

Code nylon rod  
fiberglass rod

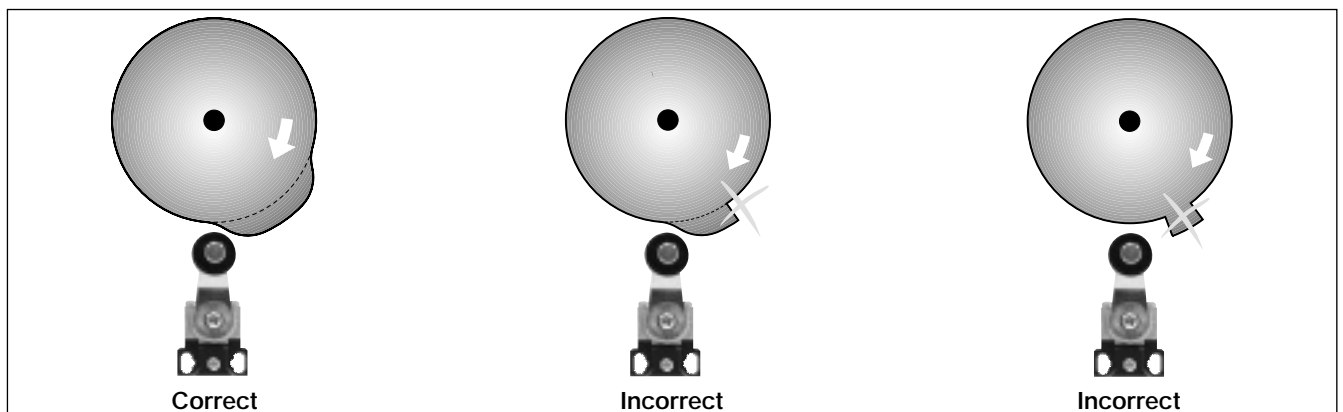
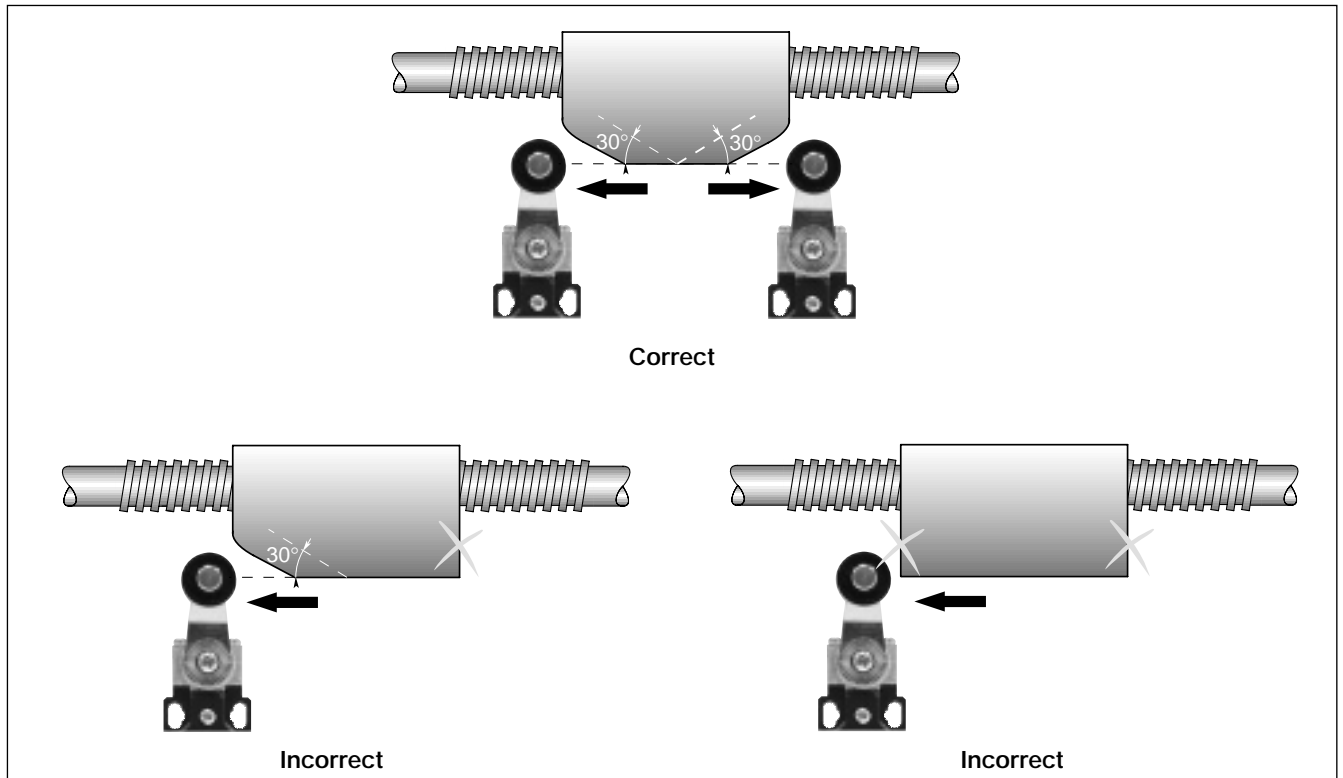
PS21L- LN-M00  
PS21L- LG-M00

## Utilization precautions

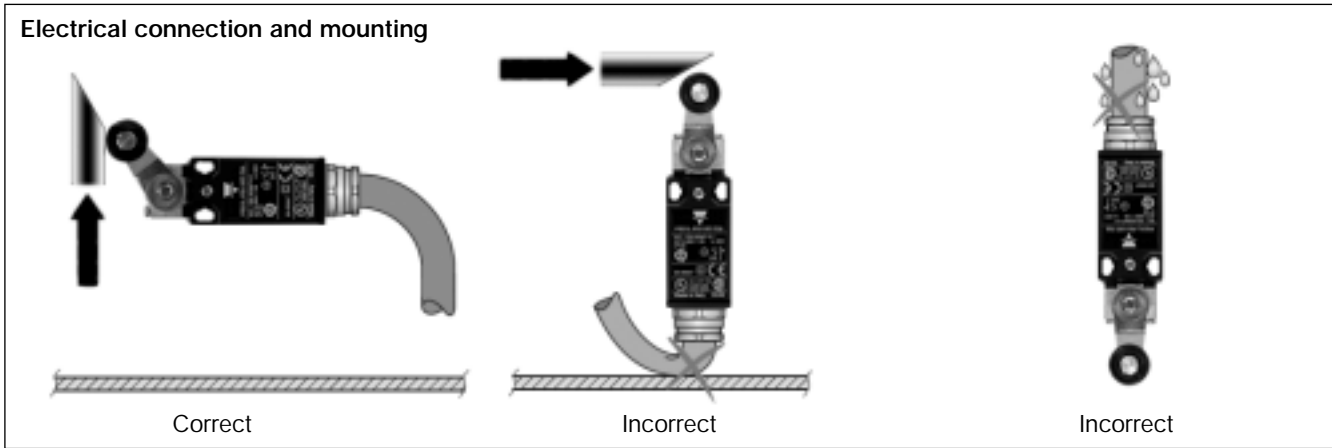
### Plain plunger



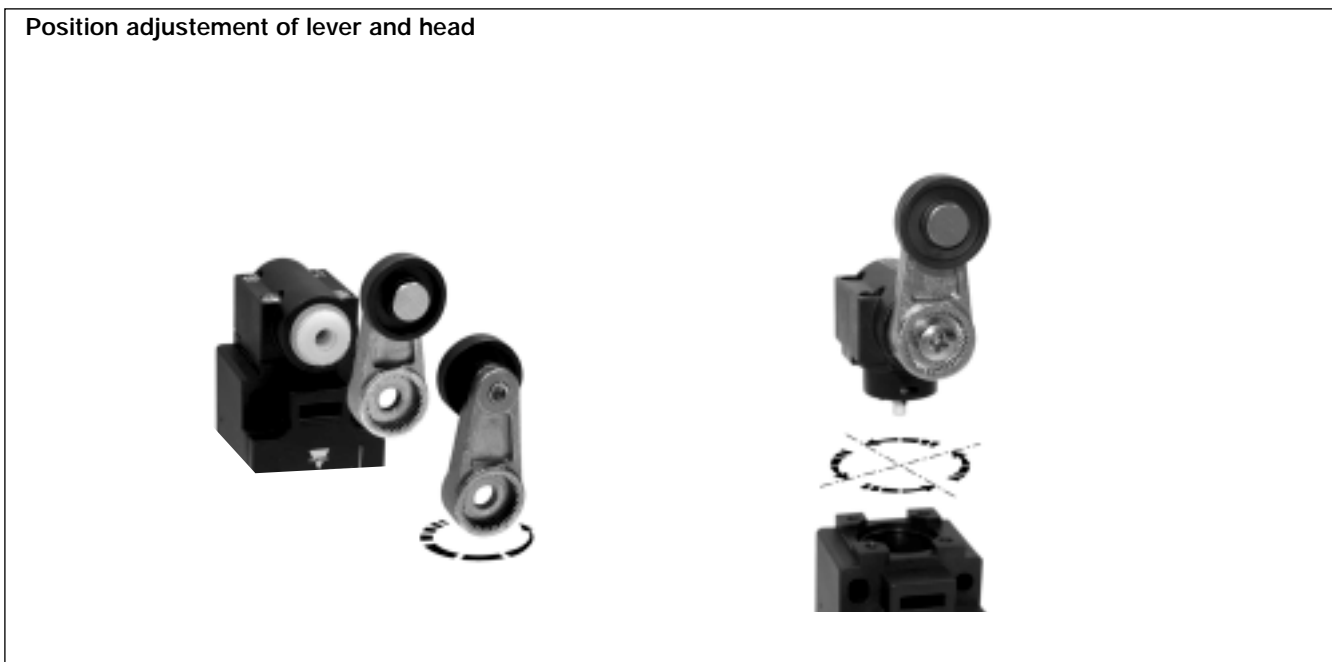
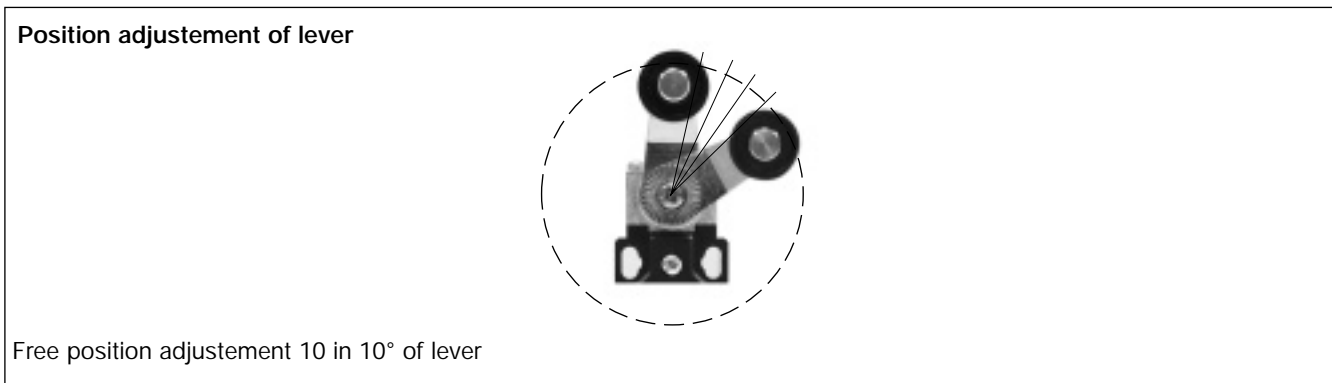
### Roller plunger or Roller lever



## Utilization precautions



## Adjustement



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