

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)

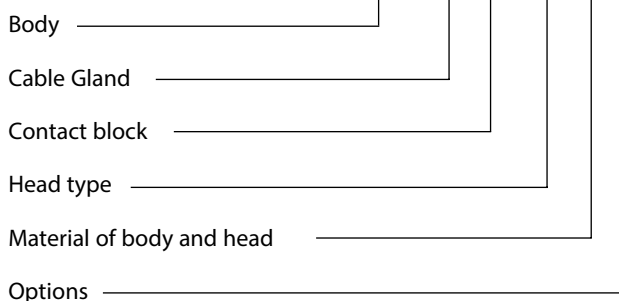
Product Description

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

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

Ordering Key

PS31L-PS11RT-M00



Description of the key codes

Body

PS31L PS 40mm (fix 30mm) 1 cable inlet for General Purpose

Cable Gland

M	M20
P	PG13.5
N	1/2 NPT

Contact block

O11	1NO+1NC overlap slow(+)
S02	2NC snap(+)
S11	1NO+1NC snap(+)
T02	2NC slow(+)
T03	3NC slow(+)
T11	1NO+1NC slow(+)
T12	1NO+2NC slow(+)
T20	2NO slow
T21	2NO+1NC slow(+)
T30	3NO slow

Material of body and head

M Metal Body and Metal head

Options

00 no option

Head type

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
LP	multidir nylon actuator with stainless steel spring
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
PB	steel ball PLUNGER
PR	metal roller PLUNGER
R1	adj LEVER with nylon roller
R2	adj LEVER with stainless stell roller
R3	adj LEVER with stell ball bearing
RB	one way LEVER steel ball bearing
RH	plastic roller LEVER on metal PLUNGER (left)
RK	one way LEVER stainless steel roller
RO	roller LEVER steel ball bearing
RS	metal roller LEVER
RT	nylon roller LEVER
SH	stainless steel lateral PLUNGER with horizontal roller
SP	stainless steel lateral plain PLUNGER
SV	stainless steel lateral PLUNGER with vertical roller
W0	Ø50 rubber roller LEVER
W1	adj LEVER with Ø50 rubber roller

Technical Data

Standards

Certifications – Approvals

Air temperature near the device

- during operation

- for storage

Climatic withstand

Mounting positions

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

(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)

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) (θ≤40°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

Diagram for snap action contact:

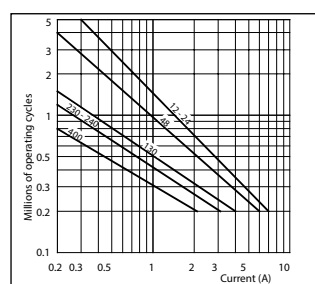
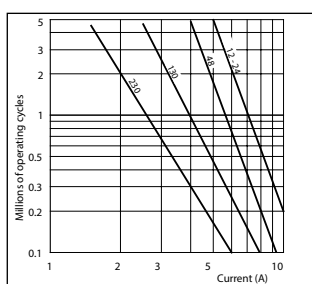


Diagram for slow action contact:



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

0,5mm² / AWG 20 to 2,5mm² / AWG 14

According to EN 50013

Contacts with positive opening operation as per

IEC 60947-5-1 chapter 3

Electrical durability for DC-13 utilization category

Power breaking for a durability of 5 million operating cycles

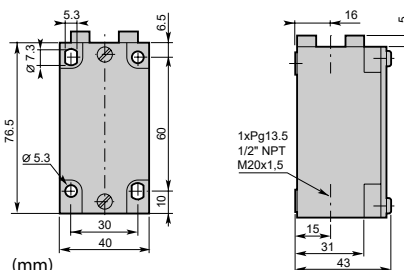
	Snap action	Slow action
Voltage 24V	9,5W	12W
Voltage 48V	6,8W	9W
Voltage 110V	3,6W	6W

Limit Switches - Limit Type (PS31) Metal Body IP66



■ 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



▲ Contact block (Zb type)

S11 (1NO+1NC) Snap action	T11 (1NO+1NC) Non overlapping Slow action	O11 (1NO+1NC) Overlapping Slow action	T02 (2NC) Slow Action	T20 (2NO) Slow action
S02 (2NC) Snap action	T12 (1NO+2NC) Non overlapping Slow action	T21 (2NO+1NC) Non overlapping Slow action	T03 (3NC) Simultaneous Slow action	T30 (3NO) Simultaneous Slow action

Conformity / $\rightarrow$ (NC) EN 50041 / $\rightarrow$
Max. Actuation speed 0.5ms
Min. force or torque 30N / 45Nm
Weight 240g

Stainless steel plain plunger
Code

PS 31L - $\blacksquare$ $\blacktriangle$ P0-M00

Conformity / $\rightarrow$ (NC) EN 50041 / $\rightarrow$
Max. Actuation speed 0.5ms
Min. force or torque 30N / 45Nm
Weight 240g

Stainless steel ball plunger
Code

PS 31L - $\blacksquare$ $\blacktriangle$ PB-M00

Conformity / $\rightarrow$ (NC) EN 50041 / $\rightarrow$
Max. Actuation speed 0.5ms
Min. force or torque 22N / 40Nm
Weight 245g

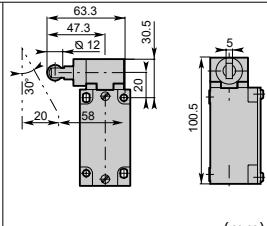
Stainless steel Ø22 roller plunger
Code

PS 31L - $\blacksquare$ $\blacktriangle$ PR-M00

Conformity / $\rightarrow$ (NC) EN 50041 / $\rightarrow$
Max. Actuation speed 0.5ms
Min. force or torque 30N / 50Nm
Weight 260g

Stainless steel lateral plain plunger
Code

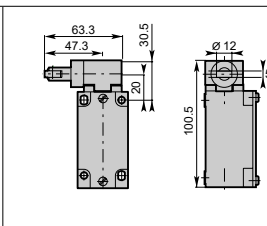
PS 31L - $\blacksquare$ $\blacktriangle$ SP-M00

		S11 0 3.7 5.9 8.8 10.2 mm 21-22 13-14 21-22 13-14	T11 0 4.6 7.5 10.2 mm 21-22 13-14 6.0	O11 0 6.6 9.5 10.2 mm 21-22 13-14 4.3	T02 0 4.3 7.2 10.2 mm 11-12 21-22
		T20 0 4.1 10.2 mm 13-14 23-24	S02 0 3.5 5.7 8.6 10.2 mm 11-12 21-22 11-12 21-22	T12 0 3.5 6.1 10.2 mm 13-14 21-22 6.2	T21 0 3.6 6.2 10.2 mm 31-32 13-14 23-24 6.2
		T03 0 3.5 6.1 10.2 mm 11-12 21-22 31-32	T30 0 4.0 10.2 mm 13-14 23-24 33-34		

Conformity /  **EN 50041** / 
 Max. Actuation speed **0.5ms**
 Min. force or torque **30N / 50Nm**
 Weight **265g**

Stainless steel lateral plunger with Ø12 vertical roller
 Code

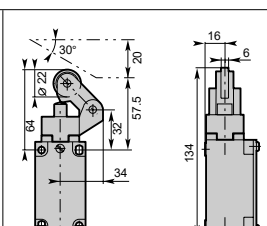
PS31L-   SV-M00

		S11 0 3.7 5.9 8.8 10.2 mm 21-22 13-14 21-22 13-14	T11 0 4.6 7.5 10.2 mm 21-22 13-14 6.0	O11 0 6.6 9.5 10.2 mm 21-22 13-14 4.3	T02 0 4.3 7.2 10.2 mm 11-12 21-22
		T20 0 4.1 10.2 mm 13-14 23-24	S02 0 3.5 5.7 8.6 10.2 mm 11-12 21-22 11-12 21-22	T12 0 3.5 6.1 10.2 mm 13-14 21-22 6.2	T21 0 3.6 6.2 10.2 mm 31-32 13-14 23-24 6.2
		T03 0 3.5 6.1 10.2 mm 11-12 21-22 31-32	T30 0 4.0 10.2 mm 13-14 23-24 33-34		

Conformity /  **EN 50041** / 
 Max. Actuation speed **0.5ms**
 Min. force or torque **30N / 50Nm**
 Weight **265g**

Stainless steel lateral plunger with Ø12 horizontal roller
 Code

PS31L-   SH-M00

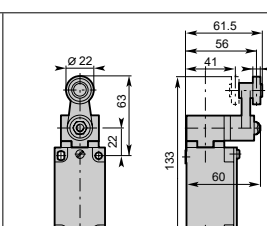
		S11 0 3.1 6.3 10.8 15.5 mm 21-22 13-14 21-22 13-14	T11 0 4.5 9.0 15.5 mm 21-22 13-14 6.1	O11 0 7.2 11.7 15.5 mm 21-22 13-14 4.0	T02 0 4.0 9.5 15.5 mm 11-12 21-22
		T20 0 3.6 15.5 mm 13-14 23-24	S02 0 3.1 6.1 10.6 15.5 mm 11-12 21-22 11-12 21-22	T12 0 4.6 8.4 15.5 mm 13-14 21-22 8.6	T21 0 4.7 8.5 15.5 mm 31-32 13-14 23-24 8.6
		T03 0 4.6 8.4 15.5 mm 11-12 21-22 31-32	T30 0 4.9 15.5 mm 13-14 23-24 33-34		

Conformity /  **EN 50041** / 
 Max. Actuation speed **1.5ms**
 Min. force or torque **12N / 40Nm**
 Weight **280g**

One way lever

Code Ø22 nylon roller
 Ø22 stainless steel roller
 Ø22 steel ball bearing

PS31L-   H-M00
PS31L-   K-M00
PS31L-   B-M00

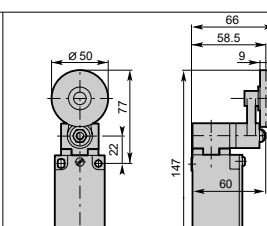
		S11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14	T11 0 22° 38° 78° 21-22 13-14 33°	O11 0 37° 53° 78° 21-22 13-14 21°	T02 0 21° 37° 78° 11-12 21-22
		T20 0 20° 78° 13-14 23-24	S02 0 20° 32° 48° 78° 11-12 21-22 11-12 21-22	T12 0 18° 35° 78° 13-14 21-22 37°	T21 0 19° 36° 78° 31-32 13-14 23-24 37°
		T03 0 18° 35° 78° 11-12 21-22 31-32	T30 0 23° 78° 13-14 23-24 33-34		

Conformity /  **EN 50041** / 
 Max. Actuation speed **1.5ms**
 Min. force or torque **0.15N / 0.30Nm**
 Weight **300g**

Ø22 Roller lever

Code nylon roller
 stainless steel roller
 steel ball bearing

PS31L-   T-M00
PS31L-   S-M00
PS31L-   O-M00

		S11 0 20° 33° 49° 78° 21-22 13-14 21-22 13-14	T11 0 22° 38° 78° 21-22 13-14 33°	O11 0 37° 53° 78° 21-22 13-14 21°	T02 0 21° 37° 78° 11-12 21-22
		T20 0 20° 78° 13-14 23-24	S02 0 20° 32° 48° 78° 11-12 21-22 11-12 21-22	T12 0 18° 35° 78° 13-14 21-22 37°	T21 0 19° 36° 78° 31-32 13-14 23-24 37°
		T03 0 18° 35° 78° 11-12 21-22 31-32	T30 0 23° 78° 13-14 23-24 33-34		

Conformity /  **EN 50041** / 
 Max. Actuation speed **1.5ms**
 Min. force or torque **0.15N / 0.30Nm**
 Weight **315g**

Ø50 Rubber roller lever
 Code

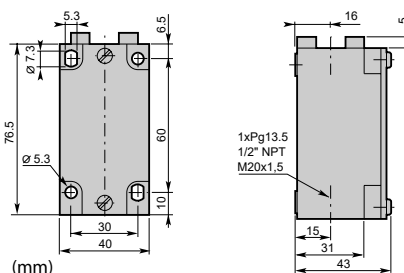
PS31L-   W0-M00

Limit Switches - Limit Type (PS31) Metal Body IP66



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Conformity / (NC) /

Max. Actuation speed 1.5ms
Min. force or torque 0.15N / 0.30Nm
Weight 320g

Adjustable Ø22 roller lever

Code nylon lever
stainless steel roller
steel ball bearing

PS31L- 1-M00
PS31L- 2-M00
PS31L- 3-M00

Conformity / (NC) /

Max. Actuation speed 1.5ms
Min. force or torque 0.15N / 0.30Nm
Weight 325g

Adjustable Ø50 rubber roller lever

Code

PS 31 L - W1-M00

Conformity / (NC) /

Max. Actuation speed 1.5ms
Min. force or torque 0.15N / -
Weight 305g

Nylon actuator with stainless steel spring

Code

PS 31 L - LB-M00

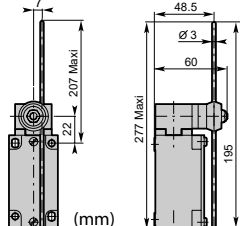
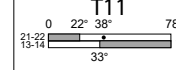
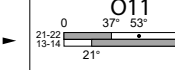
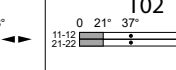
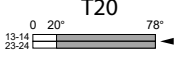
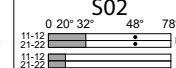
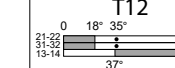
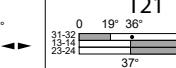
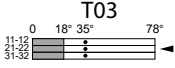
Conformity / (NC) /

Max. Actuation speed 1.5ms
Min. force or torque 0.15N / -
Weight 310g

Stainless steel spring actuator

Code

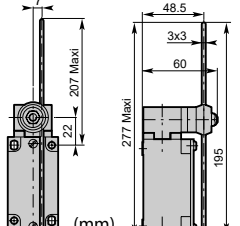
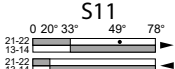
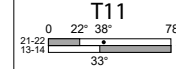
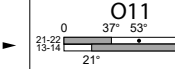
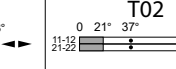
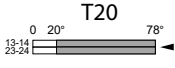
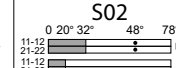
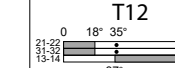
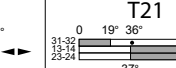
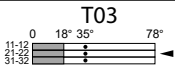
PS 31 L - LZ-M00

Conformity /  EN50041 / 
 Max. Actuation speed 1.5ms
 Min. force or torque 0.15N / 0.30
 Weight 305g

Adjustable rod lever
 Code stainless steel rod Ø3
 fiberglass rod Ø3

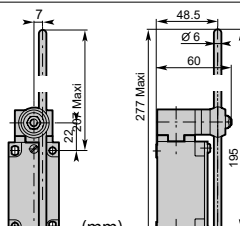
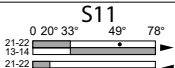
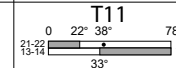
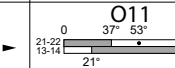
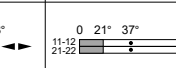
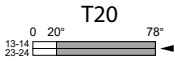
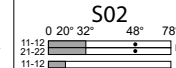
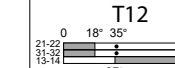
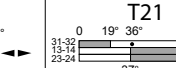
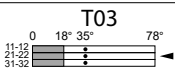
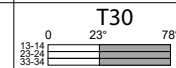
PS31L-  A-M00
 PS31L-  F-M00

Conformity /  EN50041 / 
 Max. Actuation speed 1.5ms
 Min. force or torque 0.15N / 0.30
 Weight 305g

Adjustable rod lever
 Code square steel rod 3x3

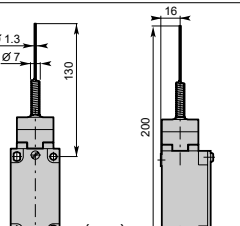
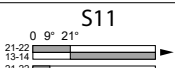
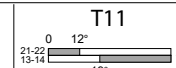
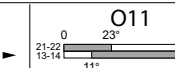
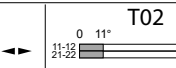
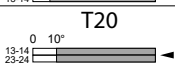
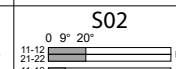
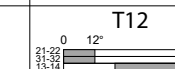
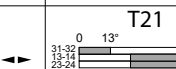
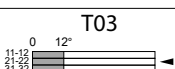
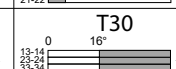
PS31L-  B-M00

Conformity /  EN50041 / 
 Max. Actuation speed 1.5ms
 Min. force or torque 0.15N / 0.30Nm
 Weight 300g

Adjustable rod lever
 Code nylon rod
 fiberglass rod

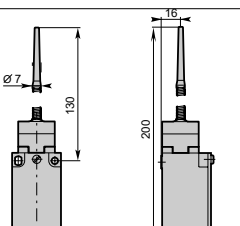
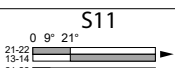
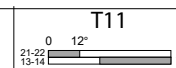
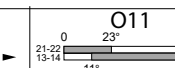
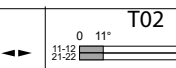
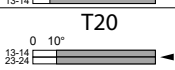
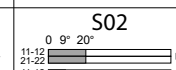
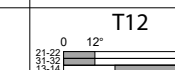
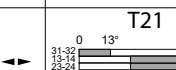
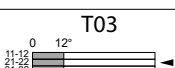
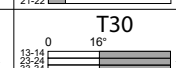
PS31L-  N-M00
 PS31L-  G-M00

Conformity /  /
 Max. Actuation speed 1.0ms
 Min. force or torque 0.18N / -
 Weight 230g

Stainless steel spring multidirectional actuator
 Code

PS31L-  LW-M00

Conformity /  /
 Max. Actuation speed 1.0ms
 Min. force or torque 0.18N / -
 Weight 230g

Multidirectional nylon actuator with stainless steel spring
 Code

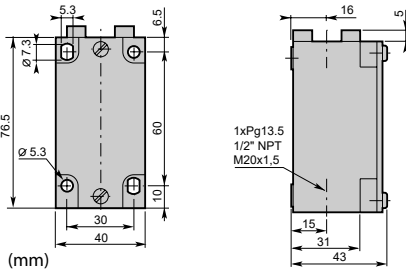
PS31L-  LP-M00

Limit Switches - Limit Type (PS31)
Metal Body IP66



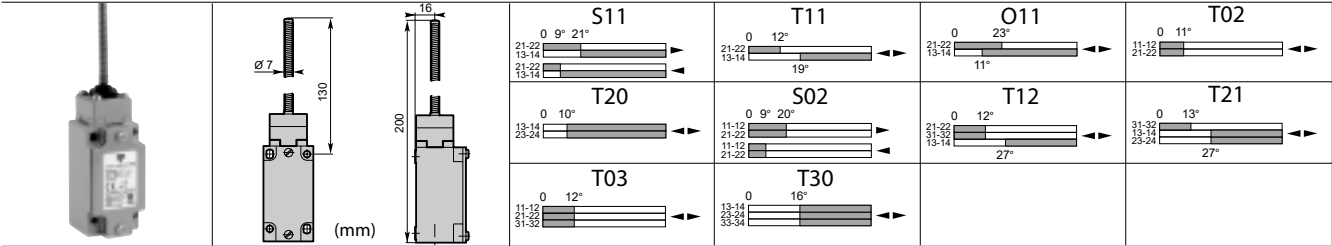
■ Cable Gland

- 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

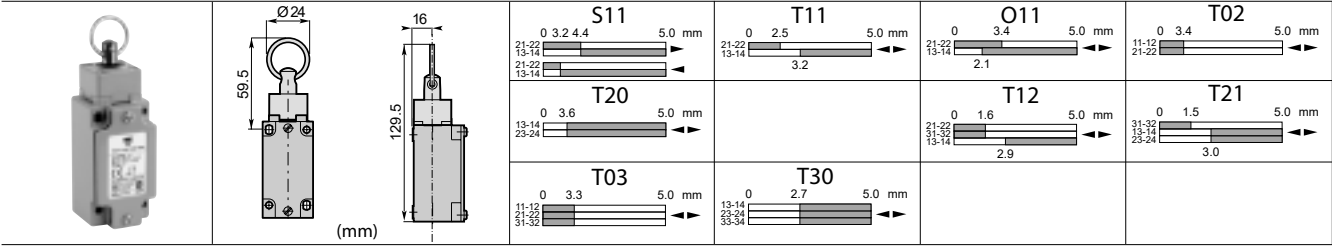


▲ Contact block (Zb type)

S11 (1NO+1NC) Snap action	T11 (1NO+1NC) Non overlapping Slow action	O11 (1NO+1NC) Overlapping Slow action	T02 (2NC) Slow Action	T20 (2NO) Slow action
S02 (2NC) Snap action	T12 (1NO+2NC) Non overlapping Slow action	T21 (2NO+1NC) Non overlapping Slow action	T03 (3NC) Simultaneous Slow action	T30 (3NO) Simultaneous Slow action



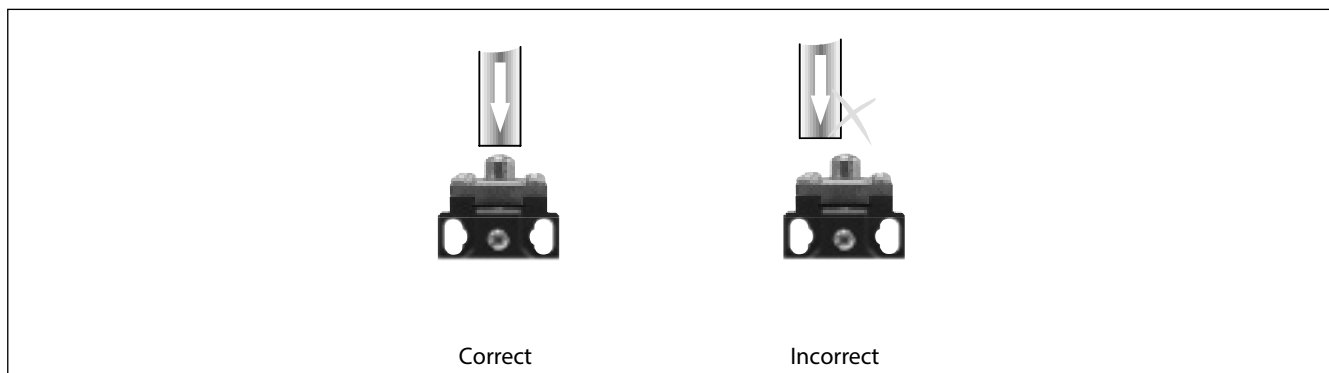
Conformity / (NC)	/	Stainless steel spring multidirectional actuator
Max. Actuation speed	1.0ms	Code
Min. force or torque	0.18N / -	PS 31L - LS-M00
Weight	235g	



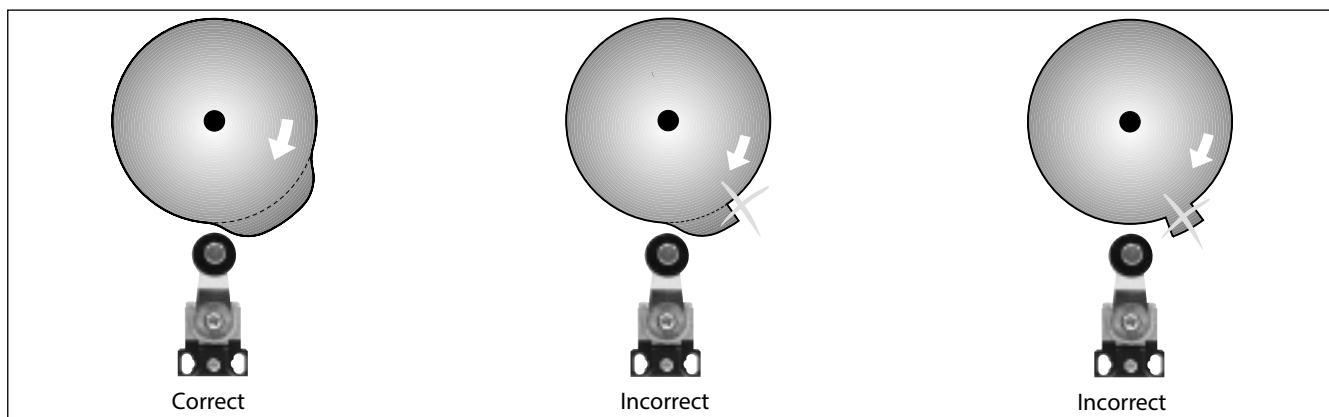
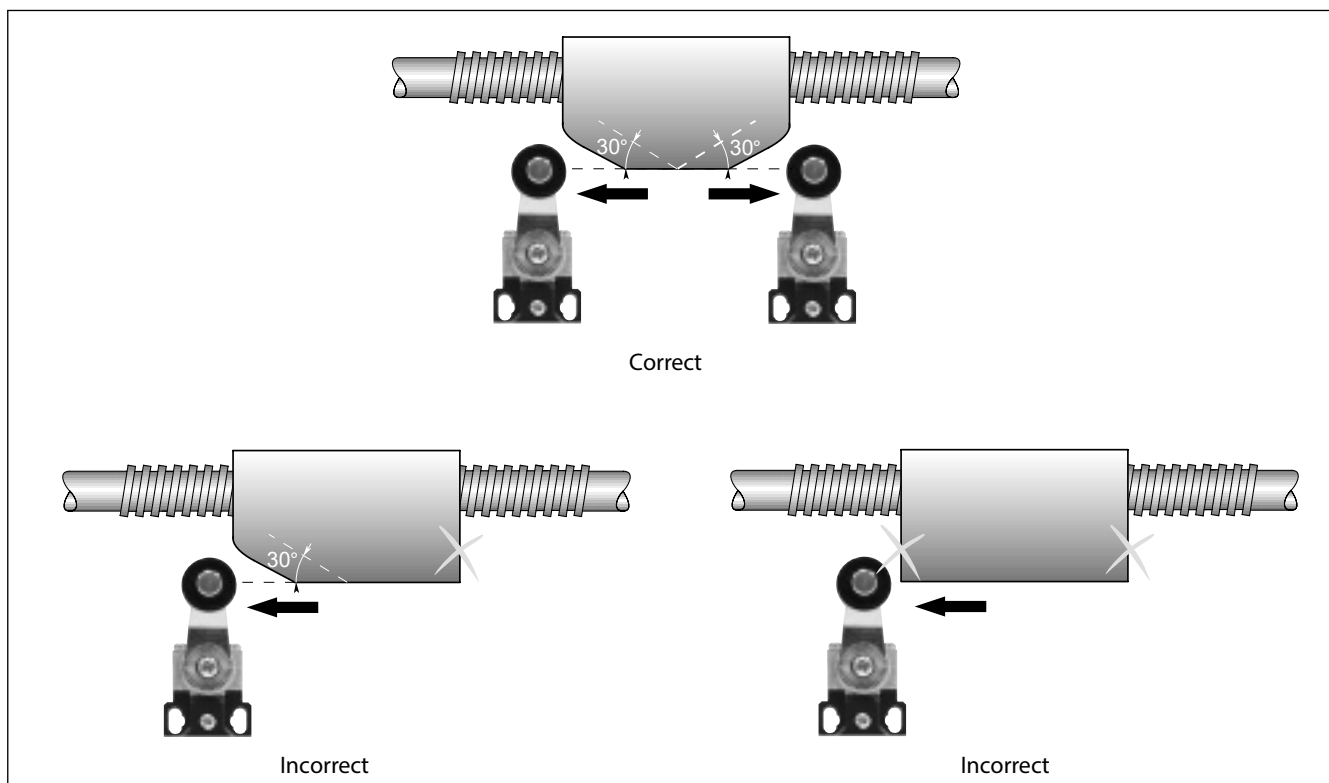
Conformity / (NC)	/	Pull action with ring
Max. Actuation speed	0.5ms	Code
Min. force or torque	25N / -	PS 31L - N6-M00
Weight	245g	

Utilization precautions

Plain plunger

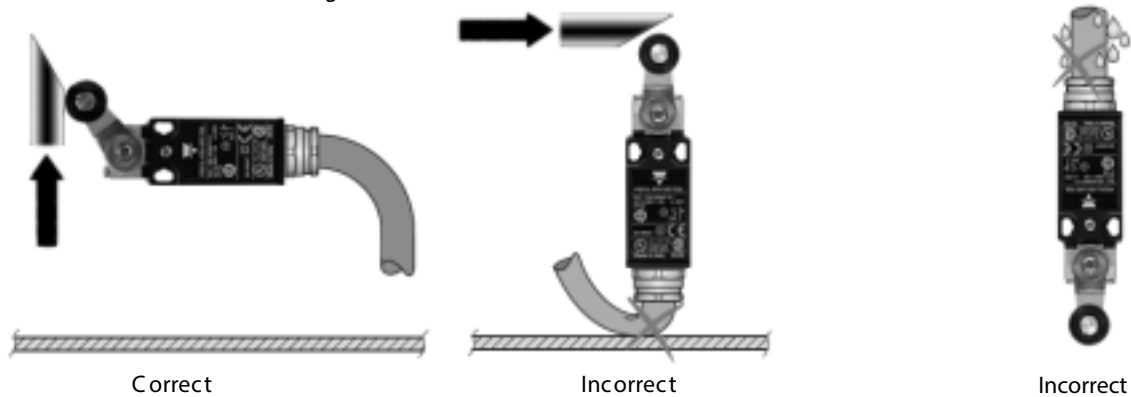


Roller plunger or Roller lever



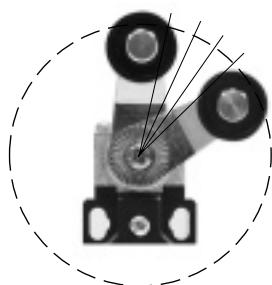
Utilization precautions

Electrical connection and mounting



Adjustement

Position adjustment of lever

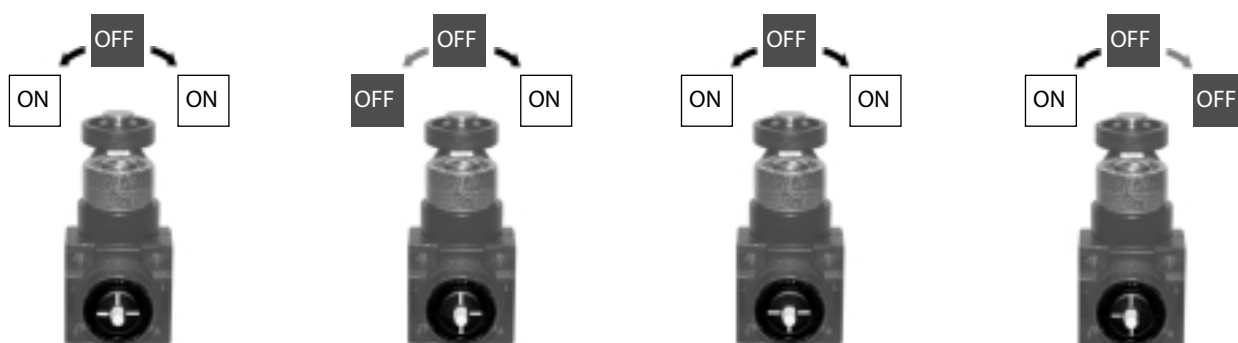


Free position adjustment 10 in 10° of lever

Position adjustment of lever and head



Different operating of head



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[PS31L-PT12LS-M00](#) [PS31L-NO11PR-M00](#) [PS31L-NO11LZ-M00](#) [PS31L-NO11RK-M00](#) [PS31L-NS11RS-M00](#)
[PS31L-NS02LB-M00](#) [PS31L-NS02LZ-M00](#) [PS31L-NO11R1-M00](#) [PS31L-NO11N6-M00](#) [PS31L-NS02LF-M00](#) [PS31L-](#)
[NO11P0-M00](#) [PS31L-NS11PR-M00](#) [PS31L-PS11RH-M00](#) [PS31L-NS02LW-M00](#) [PS31L-NS11LF-M00](#) [PS31L-](#)
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[NT11R1-M00](#) [PS31L-NS11R2-M00](#) [PS31L-NO11W0-M00](#) [PS31L-NS02LN-M00](#) [PS31L-NO11RB-M00](#) [PS31L-](#)
[NT21PR-M00](#) [PS31L-NO11SH-M00](#) [PS31L-NS11LW-M00](#) [PS31L-NS02LA-M00](#) [PS31L-NO11SV-M00](#) [PS31L-](#)
[NO11RT-M00](#) [PS31L-NO11LB-M00](#) [PS31L-NT21RT-M00](#) [PS31L-NS11LA-M00](#) [PS31L-NS02P0-M00](#) [PS31L-](#)
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