

# Limit Switches - Limit Type Metal Body IP66

CARLO GAVAZZI



- 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**

Body

Cable Gland

Contact block

Head type

Material of body and head

Options

## 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 steel spring multidir actuator (cat Whisker)  
LZ | Stainless steel 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 steel roller  
R3 | adj LEVER with steel 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 °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:

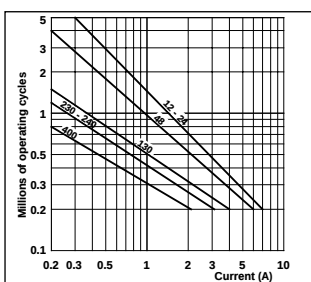
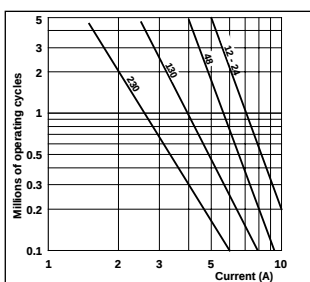


Diagram for slow action contact:



### Electrical durability for DC-13 utilization category

Power breaking for a durability of 5 million operating cycles

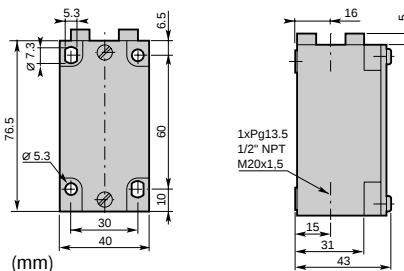
|              | Snap action | Slow action |
|--------------|-------------|-------------|
| Voltage 24V  | 9,5W        | 12W         |
| Voltage 48V  | 6,8W        | 9W          |
| Voltage 110V | 3,6W        | 6W          |

# Limit Switches - Limit Type (PS31) 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



## ▲ Contact block (Zb type)

|                                     |  |                                                        |  |                                                        |  |                                                 |  |                                                 |  |
|-------------------------------------|--|--------------------------------------------------------|--|--------------------------------------------------------|--|-------------------------------------------------|--|-------------------------------------------------|--|
| <b>S11</b> (1NO+1NC)<br>Snap action |  | <b>T11</b> (1NO+1NC)<br>Non overlapping<br>Slow action |  | <b>O11</b> (1NO+1NC)<br>Overlapping<br>Slow action     |  | <b>T02</b> (2NC)<br>Slow Action                 |  | <b>T20</b> (2NO)<br>Slow action                 |  |
| <b>S02</b> (2NC)<br>Snap action     |  | <b>T12</b> (1NO+2NC)<br>Non overlapping<br>Slow action |  | <b>T21</b> (2NO+1NC)<br>Non overlapping<br>Slow action |  | <b>T03</b> (3NC)<br>Simultaneous<br>Slow action |  | <b>T30</b> (3NO)<br>Simultaneous<br>Slow action |  |

|  |  |                                    |                                    |                                |                                |
|--|--|------------------------------------|------------------------------------|--------------------------------|--------------------------------|
|  |  | <b>S11</b><br>0 1.8 3.0 4.6 6.0 mm | <b>T11</b><br>0 2.1 3.7 6.0 mm     | <b>O11</b><br>0 3.4 5.0 6.0 mm | <b>T02</b><br>0 2.0 3.6 6.0 mm |
|  |  | <b>T20</b><br>0 1.9 6.0 mm         | <b>S02</b><br>0 1.8 2.9 4.5 6.0 mm | <b>T12</b><br>0 2.0 3.5 6.0 mm | <b>T21</b><br>0 2.1 3.6 6.0 mm |
|  |  | <b>T03</b><br>0 2.0 3.5 6.0 mm     | <b>T30</b><br>0 2.3 6.0 mm         |                                |                                |

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

Stainless steel plain plunger  
Code

PS31L-P0-M00

|  |  |                                    |                                    |                                |                                |
|--|--|------------------------------------|------------------------------------|--------------------------------|--------------------------------|
|  |  | <b>S11</b><br>0 1.8 3.0 4.6 6.0 mm | <b>T11</b><br>0 2.1 3.7 6.0 mm     | <b>O11</b><br>0 3.4 5.0 6.0 mm | <b>T02</b><br>0 2.0 3.6 6.0 mm |
|  |  | <b>T20</b><br>0 1.9 6.0 mm         | <b>S02</b><br>0 1.8 2.9 4.5 6.0 mm | <b>T12</b><br>0 2.0 3.5 6.0 mm | <b>T21</b><br>0 2.1 3.6 6.0 mm |
|  |  | <b>T03</b><br>0 2.0 3.5 6.0 mm     | <b>T30</b><br>0 2.3 6.0 mm         |                                |                                |

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

Stainless steel ball plunger  
Code

PS31L-PB-M00

|  |  |                                     |                                     |                                 |                                 |
|--|--|-------------------------------------|-------------------------------------|---------------------------------|---------------------------------|
|  |  | <b>S11</b><br>0 3.1 5.3 8.2 10.5 mm | <b>T11</b><br>0 4.0 6.9 10.5 mm     | <b>O11</b><br>0 6.0 8.9 10.5 mm | <b>T02</b><br>0 3.7 6.6 10.5 mm |
|  |  | <b>T20</b><br>0 3.5 10.5 mm         | <b>S02</b><br>0 3.1 5.1 8.0 10.5 mm | <b>T12</b><br>0 3.8 6.3 10.5 mm | <b>T21</b><br>0 3.9 6.4 10.5 mm |
|  |  | <b>T03</b><br>0 3.8 6.3 10.5 mm     | <b>T30</b><br>0 4.3 10.5 mm         |                                 |                                 |

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

Stainless steel Ø22 roller plunger  
Code

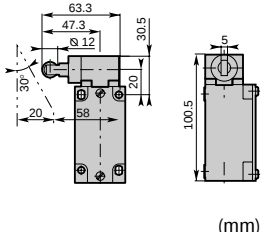
PS31L-PR-M00

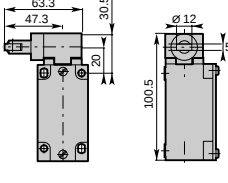
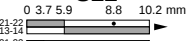
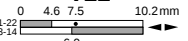
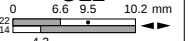
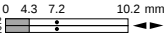
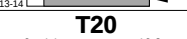
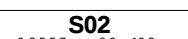
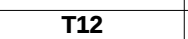
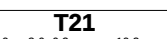
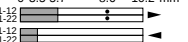
|  |  |                                    |                                    |                                |                                |
|--|--|------------------------------------|------------------------------------|--------------------------------|--------------------------------|
|  |  | <b>S11</b><br>0 2.0 3.2 4.8 6.0 mm | <b>T11</b><br>0 2.3 3.9 6.0 mm     | <b>O11</b><br>0 3.6 5.2 6.0 mm | <b>T02</b><br>0 2.2 3.8 6.0 mm |
|  |  | <b>T20</b><br>0 2.1 6.0 mm         | <b>S02</b><br>0 2.0 3.1 4.7 6.0 mm | <b>T12</b><br>0 1.4 2.9 6.0 mm | <b>T21</b><br>0 1.5 3.0 6.0 mm |
|  |  | <b>T03</b><br>0 1.4 2.9 6.0 mm     | <b>T30</b><br>0 1.9 6.0 mm         |                                |                                |

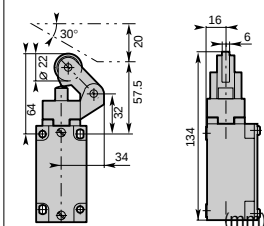
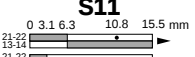
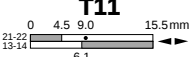
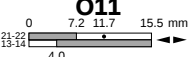
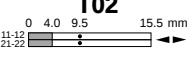
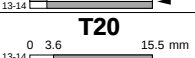
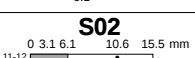
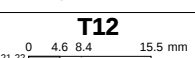
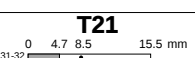
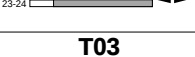
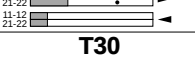
Conformity / (NC) EN 50041 / (NC)  
Max. Actuation speed 0.5ms  
Min. force or torque 30N / 50Nm  
Weight 260g

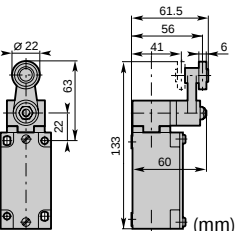
Stainless steel lateral plain plunger  
Code

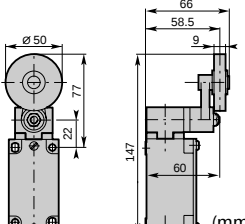
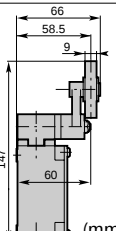
PS31L-SP-M00

|                                                                                                            |                                                                                   |                                                                                              |  |                                                                                                                                                                                                                                                                                         |  |                                                                         |  |  |  |                                                          |  |  |  |                                                                   |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------|--|--|--|----------------------------------------------------------|--|--|--|-------------------------------------------------------------------|--|--|--|--|--|
|                           |  | <b>S11</b><br>0 3.7 5.9 8.8 10.2 mm<br>21-22<br>13-14<br>13-14                               |  |                                                                                                                                                                                                                                                                                         |  | <b>T11</b><br>0 4.6 7.5 10.2 mm<br>21-22<br>13-14<br>6.0                |  |  |  | <b>O11</b><br>0 6.6 9.5 10.2 mm<br>21-22<br>13-14<br>4.3 |  |  |  | <b>T02</b><br>0 4.3 7.2 10.2 mm<br>11-12<br>21-22                 |  |  |  |  |  |
|                                                                                                            |                                                                                   | <b>T20</b><br>0 4.1 10.2 mm<br>13-14<br>23-24                                                |  |                                                                                                                                                                                                                                                                                         |  | <b>S02</b><br>0 3.5 5.7 8.6 10.2 mm<br>11-12<br>21-22<br>11-12<br>21-22 |  |  |  | <b>T12</b><br>0 3.5 6.1 10.2 mm<br>21-22<br>13-14<br>6.2 |  |  |  | <b>T21</b><br>0 3.6 6.2 10.2 mm<br>31-32<br>13-14<br>23-24<br>6.2 |  |  |  |  |  |
|                                                                                                            |                                                                                   | <b>T03</b><br>0 3.5 6.1 10.2 mm<br>11-12<br>21-22<br>31-32                                   |  |                                                                                                                                                                                                                                                                                         |  | <b>T30</b><br>0 4.0 10.2 mm<br>13-14<br>23-24<br>33-34                  |  |  |  |                                                          |  |  |  |                                                                   |  |  |  |  |  |
|                                                                                                            |                                                                                   |                                                                                              |  |                                                                                                                                                                                                                                                                                         |  |                                                                         |  |  |  |                                                          |  |  |  |                                                                   |  |  |  |  |  |
| <b>Conformity</b> /  (NC) |                                                                                   | EN 50041 /  |  | <b>Stainless steel lateral plunger with Ø12 vertical roller</b>                                                                                                                                                                                                                         |  |                                                                         |  |  |  |                                                          |  |  |  |                                                                   |  |  |  |  |  |
| <b>Max. Actuation speed</b>                                                                                |                                                                                   | 0.5ms                                                                                        |  | <b>Code</b>                                                                                                                                                                                                                                                                             |  |                                                                         |  |  |  |                                                          |  |  |  |                                                                   |  |  |  |  |  |
| <b>Min. force or torque</b>                                                                                |                                                                                   | 30N / 50Nm                                                                                   |  | <b>PS31L-</b>    <b>SV-M00</b> |  |                                                                         |  |  |  |                                                          |  |  |  |                                                                   |  |  |  |  |  |
| <b>Weight</b>                                                                                              |                                                                                   | 265g                                                                                         |  |                                                                                                                                                                                                                                                                                         |  |                                                                         |  |  |  |                                                          |  |  |  |                                                                   |  |  |  |  |  |

|                                                                                                                                                                                                                                                                                              |                                                                                   |                                                                                                     |                                                                                                  |                                                                                                   |                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                             |  | <b>S11</b><br>     | <b>T11</b><br> | <b>O11</b><br> | <b>T02</b><br> |
|                                                                                                                                                                                                                                                                                              |                                                                                   | <b>T20</b><br>     | <b>S02</b><br> | <b>T12</b><br> | <b>T21</b><br> |
|                                                                                                                                                                                                                                                                                              |                                                                                   | <b>T03</b><br>     | <b>T30</b><br> |                                                                                                   |                                                                                                   |
|                                                                                                                                                                                                                                                                                              |                                                                                   |                                                                                                     |                                                                                                  |                                                                                                   |                                                                                                   |
| <b>Conformity</b> /  (NC)                                                                                                                                                                                   |                                                                                   | <b>EN 50041</b> /  |                                                                                                  |                                                                                                   |                                                                                                   |
| <b>Max. Actuation speed</b>                                                                                                                                                                                                                                                                  |                                                                                   | 0.5ms                                                                                               |                                                                                                  |                                                                                                   |                                                                                                   |
| <b>Min. force or torque</b>                                                                                                                                                                                                                                                                  |                                                                                   | 30N / 50Nm                                                                                          |                                                                                                  |                                                                                                   |                                                                                                   |
| <b>Weight</b>                                                                                                                                                                                                                                                                                |                                                                                   | 265g                                                                                                |                                                                                                  |                                                                                                   |                                                                                                   |
| <b>Stainless steel lateral plunger with Ø12 horizontal roller</b>                                                                                                                                                                                                                            |                                                                                   |                                                                                                     |                                                                                                  |                                                                                                   |                                                                                                   |
| <b>Code</b> PS31L-    <b>SH-M00</b> |                                                                                   |                                                                                                     |                                                                                                  |                                                                                                   |                                                                                                   |

|                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                           |                                                                                                    |                                                                                                     |                                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
|  |  | <b>S11</b><br>                                                                                                                                                                                         | <b>T11</b><br> | <b>O11</b><br> | <b>T02</b><br> |
|                                                                                     |                                                                                     | <b>T20</b><br>                                                                                                                                                                                         | <b>S02</b><br> | <b>T12</b><br> | <b>T21</b><br> |
|                                                                                     |                                                                                     | <b>T03</b><br>                                                                                                                                                                                         | <b>T30</b><br> |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | <b>Conformity</b> /  /                                                                                              |                                                                                                    |                                                                                                     |                                                                                                     |
| <b>Max. Actuation speed</b>                                                         |                                                                                     | 1.5ms                                                                                                                                                                                                                                                                                     |                                                                                                    |                                                                                                     |                                                                                                     |
| <b>Min. force or torque</b>                                                         |                                                                                     | 12N / 40Nm                                                                                                                                                                                                                                                                                |                                                                                                    |                                                                                                     |                                                                                                     |
| <b>Weight</b>                                                                       |                                                                                     | 280g                                                                                                                                                                                                                                                                                      |                                                                                                    |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | <b>One way lever</b>                                                                                                                                                                                                                                                                      |                                                                                                    |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | <b>Code</b> Ø22 nylon roller                                                                                                                                                                                                                                                              |                                                                                                    |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | Ø22 stainless steel roller                                                                                                                                                                                                                                                                |                                                                                                    |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | Ø22 steel ball bearing                                                                                                                                                                                                                                                                    |                                                                                                    |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | <b>PS31L-<b>RH-M00</b></b> |                                                                                                    |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | <b>PS31L-<b>RK-M00</b></b> |                                                                                                    |                                                                                                     |                                                                                                     |
|                                                                                     |                                                                                     | <b>PS31L-<b>RB-M00</b></b> |                                                                                                    |                                                                                                     |                                                                                                     |

|                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                    |                                                                     |                                                      |                                                               |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
|  |  | <b>S11</b><br>0 20° 33° 49° 78°<br>21-22<br>13-14<br>13-14                                                                                                                                                                                                                         | <b>T11</b><br>0 22° 38° 78°<br>21-22<br>13-14<br>33°                | <b>O11</b><br>0 37° 53° 78°<br>21-22<br>13-14<br>21° | <b>T02</b><br>0 21° 37° 78°<br>11-12<br>21-22                 |
|                                                                                     |                                                                                     | <b>T20</b><br>0 20° 78°<br>13-14<br>23-24                                                                                                                                                                                                                                          | <b>S02</b><br>0 20° 32° 48° 78°<br>11-12<br>21-22<br>11-12<br>21-22 | <b>T12</b><br>0 18° 35° 78°<br>21-22<br>13-14<br>37° | <b>T21</b><br>0 19° 36° 78°<br>31-32<br>13-14<br>23-24<br>37° |
|                                                                                     |                                                                                     | <b>T03</b><br>0 18° 35° 78°<br>11-12<br>21-22<br>31-32                                                                                                                                                                                                                             | <b>T30</b><br>0 23° 78°<br>13-14<br>21-22<br>33-34                  |                                                      |                                                               |
|                                                                                     |                                                                                     | <b>Conformity</b> /  (NC) EN 50041 /                                                                         |                                                                     | <b>Ø22 Roller lever</b>                              |                                                               |
| <b>Max. Actuation speed</b> 1.5ms                                                   |                                                                                     | <b>Code</b> nylon roller                                                                                                                                                                                                                                                           |                                                                     |                                                      |                                                               |
| <b>Min. force or torque</b> 0.15N / 0.30Nm                                          |                                                                                     | stainless steel roller                                                                                                                                                                                                                                                             |                                                                     |                                                      |                                                               |
| <b>Weight</b> 300g                                                                  |                                                                                     | steel ball bearing                                                                                                                                                                                                                                                                 |                                                                     |                                                      |                                                               |
|                                                                                     |                                                                                     | <b>PS31L-RT-M00</b> |                                                                     |                                                      |                                                               |
|                                                                                     |                                                                                     | <b>PS31L-RS-M00</b> |                                                                     |                                                      |                                                               |
|                                                                                     |                                                                                     | <b>PS31L-RO-M00</b> |                                                                     |                                                      |                                                               |

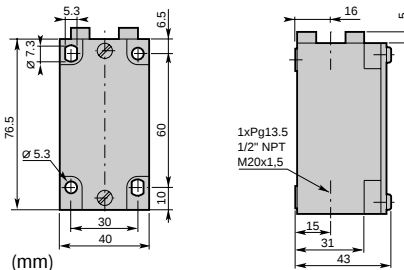
|                                                                                                                                                                                                             |                                                                                     |                                                                                     |                                                            |                                                                                                                                                                                                         |                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
|                                                                                                                          |  |  |                                                            |                                                                                                                                                                                                         |                                                               |
|                                                                                                                                                                                                             |                                                                                     | <b>S11</b><br>0 20° 33° 49° 78°<br>21-22<br>13-14<br>13-14                          | <b>T11</b><br>0 22° 38° 78°<br>21-22<br>13-14<br>33°       | <b>O11</b><br>0 37° 53° 78°<br>21-22<br>13-14<br>21°                                                                                                                                                    | <b>T02</b><br>0 21° 37° 78°<br>11-12<br>21-22                 |
|                                                                                                                                                                                                             |                                                                                     | <b>T20</b><br>0 20° 78°<br>13-14<br>23-24                                           | <b>S02</b><br>0 20° 32° 48° 78°<br>21-22<br>11-12<br>21-22 | <b>T12</b><br>0 18° 35° 78°<br>21-22<br>13-14<br>37°                                                                                                                                                    | <b>T21</b><br>0 19° 36° 78°<br>31-32<br>13-14<br>23-24<br>37° |
|                                                                                                                                                                                                             |                                                                                     | <b>T03</b><br>0 18° 35° 78°<br>11-12<br>21-22<br>31-32                              | <b>T30</b><br>0 23° 78°<br>13-14<br>23-24<br>33-34         |                                                                                                                                                                                                         |                                                               |
| <b>Conformity</b> /  (NC) EN 50041 /  |                                                                                     | <b>Ø50 Rubber roller lever</b>                                                      |                                                            | <b>PS31L-</b>   <b>W0-M00</b> |                                                               |
| <b>Max. Actuation speed</b> 1.5ms                                                                                                                                                                           |                                                                                     | <b>Code</b>                                                                         |                                                            |                                                                                                                                                                                                         |                                                               |
| <b>Min. force or torque</b> 0.15N / 0.30Nm                                                                                                                                                                  |                                                                                     |                                                                                     |                                                            |                                                                                                                                                                                                         |                                                               |
| <b>Weight</b> 315g                                                                                                                                                                                          |                                                                                     |                                                                                     |                                                            |                                                                                                                                                                                                         |                                                               |

# Limit Switches - Limit Type (PS31) Metal Body IP66

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



## ▲ Contact block (Zb type)

|                                     |                                                        |                                                        |                                                 |                                                 |
|-------------------------------------|--------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| <b>S11</b> (1NO+1NC)<br>Snap action | <b>T11</b> (1NO+1NC)<br>Non overlapping<br>Slow action | <b>O11</b> (1NO+1NC)<br>Overlapping<br>Slow action     | <b>T02</b> (2NC)<br>Slow Action                 | <b>T20</b> (2NO)<br>Slow action                 |
| <b>S02</b> (2NC)<br>Snap action     | <b>T12</b> (1NO+2NC)<br>Non overlapping<br>Slow action | <b>T21</b> (2NO+1NC)<br>Non overlapping<br>Slow action | <b>T03</b> (3NC)<br>Simultaneous<br>Slow action | <b>T30</b> (3NO)<br>Simultaneous<br>Slow action |

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

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-●▲R1-M00  
PS31L-●▲R2-M00  
PS31L-●▲R3-M00

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

Conformity / (NC)

Max. Actuation speed 1.5ms

Min. force or torque 0.15N / 0.30Nm

Weight 325g

Adjustable Ø50 rubber roller lever

Code

PS31L-●▲W1-M00

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

Conformity / (NC)

Max. Actuation speed 1.5ms

Min. force or torque 0.15N / -

Weight 305g

Nylon actuator with stainless steel spring

Code

PS31L-●▲LB-M00

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

Conformity / (NC)

Max. Actuation speed 1.5ms

Min. force or torque 0.15N / -

Weight 310g

Stainless steel spring actuator

Code

PS31L-●▲LZ-M00

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

Conformity / (NC) EN50041 / (NC)  
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-LA-M00  
PS31L-LF-M00

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

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

Adjustable rod lever  
Code square steel rod 3x3

PS31L-L3-M00

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

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

Adjustable rod lever  
Code nylon rod  
fiberglass rod

PS31L-LN-M00  
PS31L-LG-M00

|  |  |                                                            |                                                            |                                              |                                                                |
|--|--|------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------|
|  |  | <b>S11</b><br>0 9° 21°<br>21-22<br>13-14<br>21-22<br>13-14 | <b>T11</b><br>0 12°<br>21-22<br>13-14<br>19°               | <b>O11</b><br>0 23°<br>21-22<br>13-14<br>11° | <b>T02</b><br>0 11°<br>11-12<br>21-22                          |
|  |  | <b>T20</b><br>0 10°<br>13-14<br>23-24                      | <b>S02</b><br>0 9° 20°<br>11-12<br>21-22<br>13-14<br>21-22 | <b>T12</b><br>0 12°<br>21-22<br>13-14<br>27° | <b>T21</b><br>0 13°<br>11-12<br>21-22<br>13-14<br>23-24<br>27° |
|  |  | <b>T03</b><br>0 12°<br>11-12<br>21-22<br>13-14<br>31-32    | <b>T30</b><br>0 16°<br>13-14<br>23-24<br>33-34             |                                              |                                                                |

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

Stainless steel spring multidirectional actuator  
Code

PS31L-LW-M00

|  |  |                                                            |                                                            |                                              |                                                                |
|--|--|------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------|
|  |  | <b>S11</b><br>0 9° 21°<br>21-22<br>13-14<br>21-22<br>13-14 | <b>T11</b><br>0 12°<br>21-22<br>13-14<br>19°               | <b>O11</b><br>0 23°<br>21-22<br>13-14<br>11° | <b>T02</b><br>0 11°<br>11-12<br>21-22                          |
|  |  | <b>T20</b><br>0 10°<br>13-14<br>23-24                      | <b>S02</b><br>0 9° 20°<br>11-12<br>21-22<br>13-14<br>21-22 | <b>T12</b><br>0 12°<br>21-22<br>13-14<br>27° | <b>T21</b><br>0 13°<br>11-12<br>21-22<br>13-14<br>23-24<br>27° |
|  |  | <b>T03</b><br>0 12°<br>11-12<br>21-22<br>13-14<br>31-32    | <b>T30</b><br>0 16°<br>13-14<br>23-24<br>33-34             |                                              |                                                                |

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

Multidirectional nylon actuator with stainless steel spring  
Code

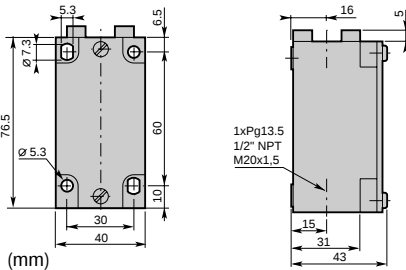
PS31L-LP-M00

# 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)

|                                     |  |                                                        |  |                                                        |  |                                                 |  |                                                 |  |
|-------------------------------------|--|--------------------------------------------------------|--|--------------------------------------------------------|--|-------------------------------------------------|--|-------------------------------------------------|--|
| <b>S11</b> (1NO+1NC)<br>Snap action |  | <b>T11</b> (1NO+1NC)<br>Non overlapping<br>Slow action |  | <b>O11</b> (1NO+1NC)<br>Overlapping<br>Slow action     |  | <b>T02</b> (2NC)<br>Slow Action                 |  | <b>T20</b> (2NO)<br>Slow action                 |  |
| <b>S02</b> (2NC)<br>Snap action     |  | <b>T12</b> (1NO+2NC)<br>Non overlapping<br>Slow action |  | <b>T21</b> (2NO+1NC)<br>Non overlapping<br>Slow action |  | <b>T03</b> (3NC)<br>Simultaneous<br>Slow action |  | <b>T30</b> (3NO)<br>Simultaneous<br>Slow action |  |

|  |  |            |            |            |            |
|--|--|------------|------------|------------|------------|
|  |  | <b>S11</b> | <b>T11</b> | <b>O11</b> | <b>T02</b> |
|  |  |            |            |            |            |
|  |  | <b>T20</b> | <b>S02</b> | <b>T12</b> | <b>T21</b> |
|  |  |            |            |            |            |
|  |  | <b>T03</b> | <b>T30</b> |            |            |
|  |  |            |            |            |            |

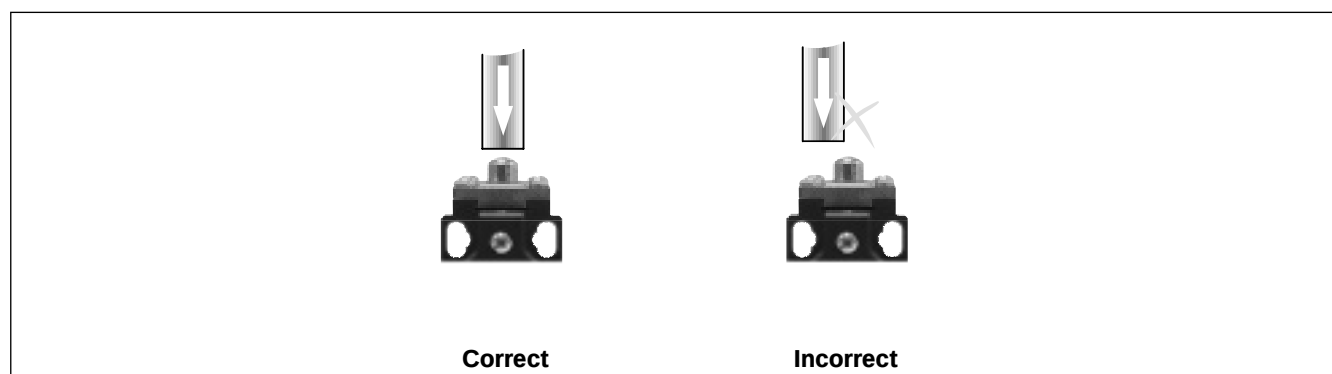
|                                       |                                                         |
|---------------------------------------|---------------------------------------------------------|
| <b>Conformity / (NC)</b>              | <b>Stainless steel spring multidirectional actuator</b> |
| <b>Max. Actuation speed</b> 1.0ms     | <b>Code</b> PS31L- ■▲LS-M00                             |
| <b>Min. force or torque</b> 0.18N / - |                                                         |
| <b>Weight</b> 235g                    |                                                         |

|  |  |            |            |            |            |
|--|--|------------|------------|------------|------------|
|  |  | <b>S11</b> | <b>T11</b> | <b>O11</b> | <b>T02</b> |
|  |  |            |            |            |            |
|  |  | <b>T20</b> |            | <b>T12</b> | <b>T21</b> |
|  |  |            |            |            |            |
|  |  | <b>T03</b> | <b>T30</b> |            |            |
|  |  |            |            |            |            |

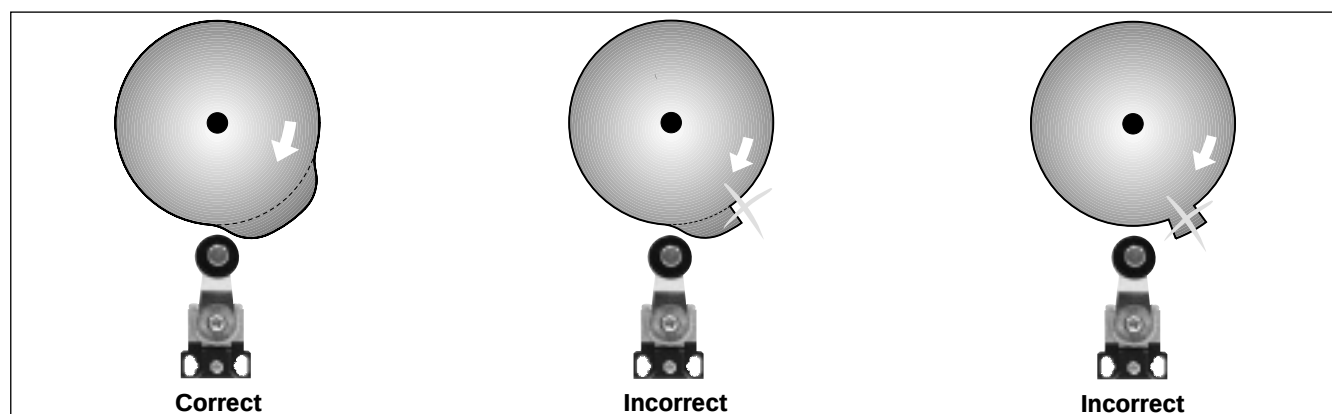
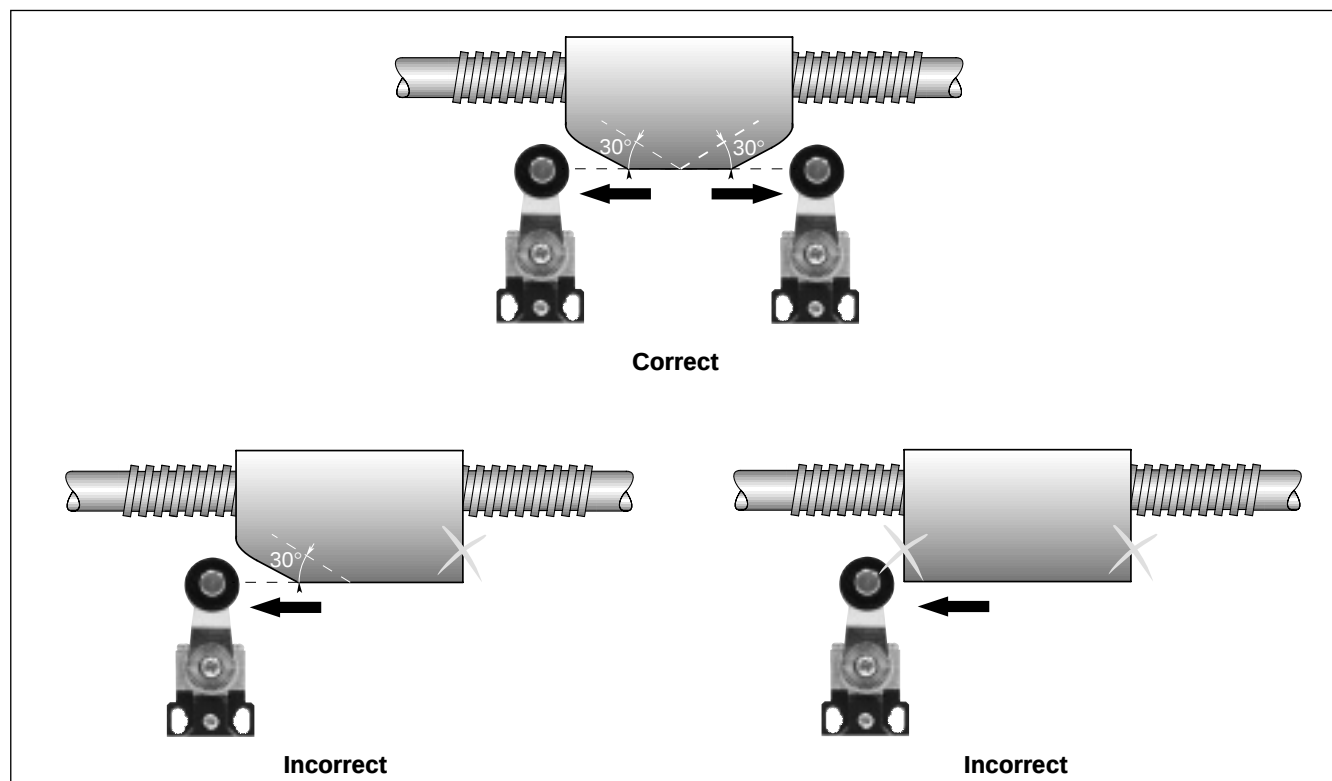
|                                     |                              |
|-------------------------------------|------------------------------|
| <b>Conformity / (NC)</b>            | <b>Pull action with ring</b> |
| <b>Max. Actuation speed</b> 0.5ms   | <b>Code</b> PS31L- ■▲N6-M00  |
| <b>Min. force or torque</b> 25N / - |                              |
| <b>Weight</b> 245g                  |                              |

## Utilization precautions

### Plain plunger

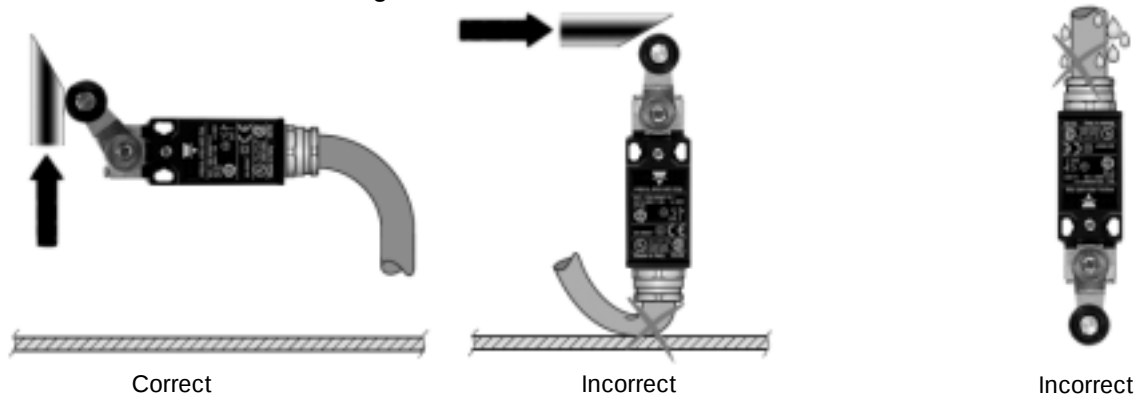


### Roller plunger or Roller lever



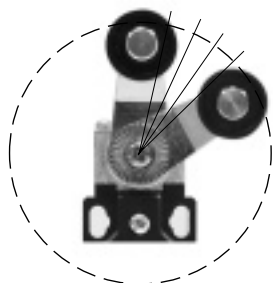
## Utilization precautions

### Electrical connection and mounting



## Adjustement

### Position adjustement of lever



Free position adjustement 10 in 10° of lever

### Position adjustement of lever and head



### Different operating of head

