

Limit Switches - Limit Type Metal Body IP66

CARLO GAVAZZI



- High mechanical resistance
- Degree of protection IP66
- Aluminium 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)

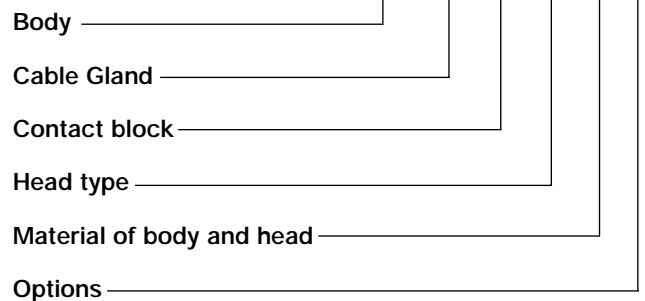
Product Description

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

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

Ordering Key

PS43L-PS11RT-M00



Description of the key codes

Body

PS43L | PS 60mm (fix 40/42mm) 3 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 mm² / 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

0,5mm² / AWG 20 to 2,5mm² / AWG 14

According to EN 50013

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

Diagram for snap action contact:

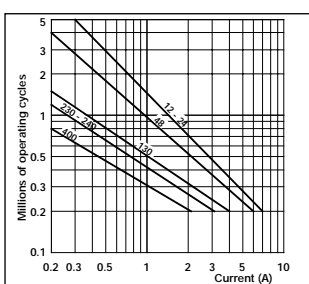
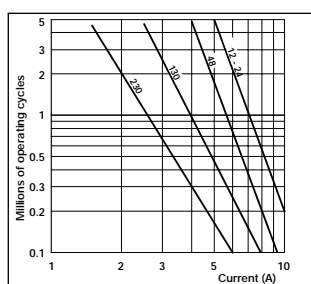


Diagram for slow action contact:



Electrical durability for DC-13 utilization category

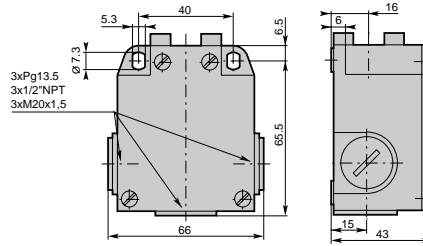
| Power breaking for a durability of 5 million operating cycles | | |
|---|-------------|-------------|
| | Snap action | Slow action |
| Voltage 24V | 9,5W | 12W |
| Voltage 48V | 6,8W | 9W |
| Voltage 110V | 3,6W | 6W |

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▣ Cable Gland

- P = Three cable inlet PG13.5 cable gland
- M = Three cable inlet M20x1.5 cable gland
- N = Three cable inlet 1/2" NPT cable gland



▲ Contact block (Zb type)

(mm)

| | | | | | | | | | |
|-------------------------------------|--|--|--|--|--|---|--|---|--|
| 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 | |

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

Conformity / (NC)

Max. Actuation speed 0.5ms

Min. force or torque 30N / 45Nm

Weight 265g

Stainless steel plain plunger
Code

PS43L-P0-M00

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

Conformity / (NC)

Max. Actuation speed 0.5ms

Min. force or torque 30N / 45Nm

Weight 265g

Stainless steel ball plunger
Code

PS43L-PB-M00

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

Conformity / (NC)

Max. Actuation speed 0.5ms

Min. force or torque 22N / 40Nm

Weight 270g

Stainless steel Ø12 roller plunger
Code

PS43L-PR-M00

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

Conformity / (NC)

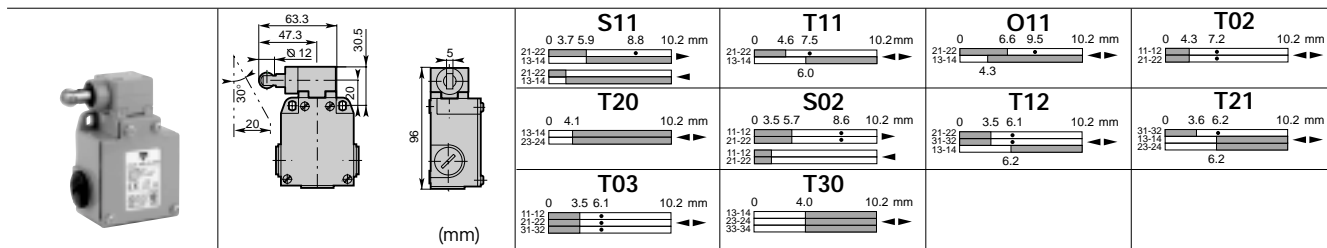
Max. Actuation speed 0.5ms

Min. force or torque 30N / 50Nm

Weight 285g

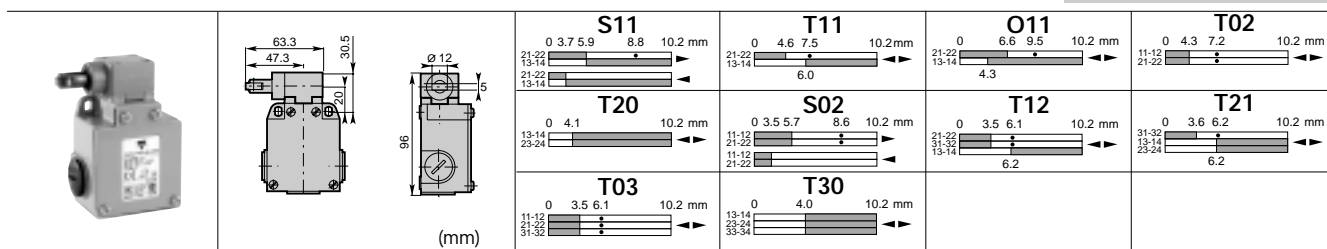
Stainless steel lateral plain plunger
Code

PS43L-SP-M00



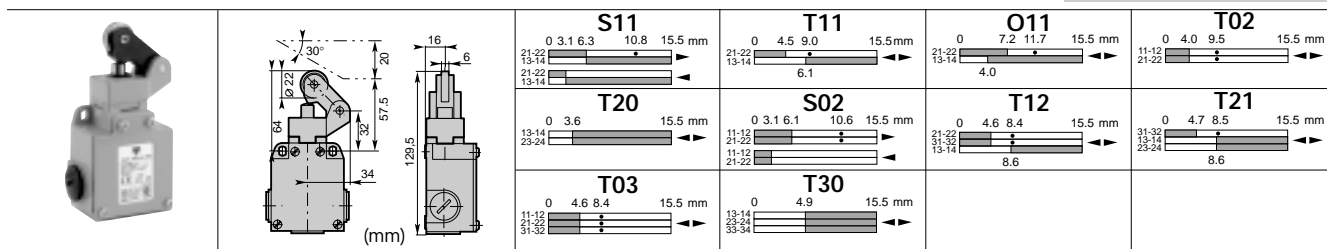
Conformity / \rightarrow (NC) / \rightarrow
 Max. Actuation speed 0.5ms
 Min. force or torque 30N / 50Nm
 Weight 290g

Stainless steel lateral plunger with \varnothing 12 vertical roller
 Code PS43L- \bullet \blacktriangle SV-M00



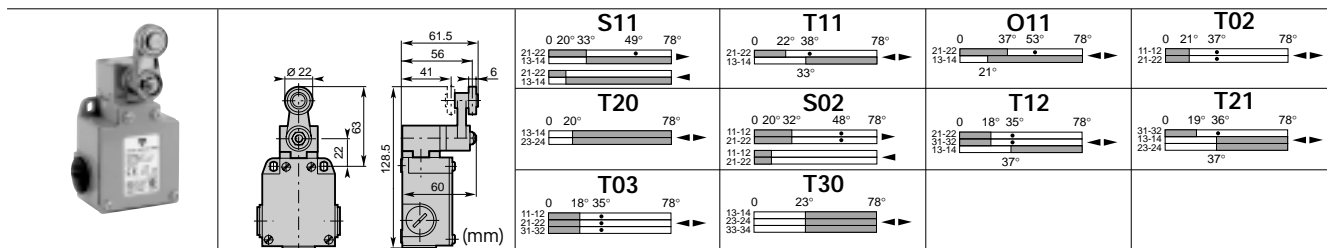
Conformity / \rightarrow (NC) / \rightarrow
 Max. Actuation speed 0.5ms
 Min. force or torque 30N / 50Nm
 Weight 290g

Stainless steel lateral plunger with \varnothing 12 horizontal roller
 Code PS43L- \bullet \blacktriangle SH-M00



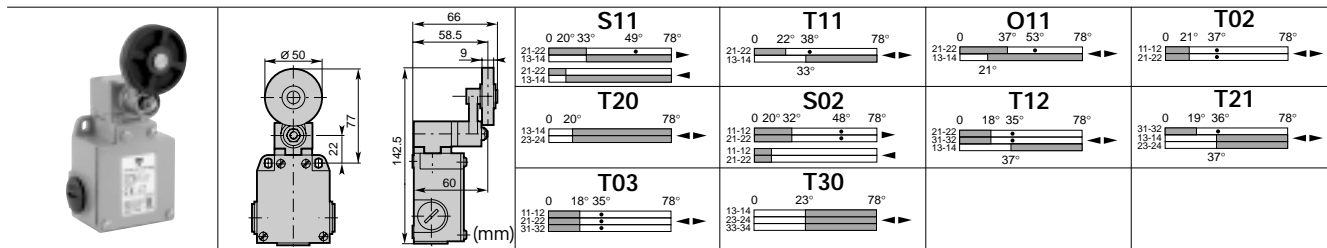
Conformity / \rightarrow / \rightarrow
 Max. Actuation speed 1.5ms
 Min. force or torque 12N / 40Nm
 Weight 305g

One way lever
 Code \varnothing 22 nylon roller
 \varnothing 22 stainless steel roller
 \varnothing 22 steel ball bearing
 PS43L- \bullet \blacktriangle RH-M00
 PS43L- \bullet \blacktriangle RK-M00
 PS43L- \bullet \blacktriangle RB-M00



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

\varnothing 22 Roller lever
 Code nylon roller
 stainless steel roller
 steel ball bearing
 PS43L- \bullet \blacktriangle RT-M00
 PS43L- \bullet \blacktriangle RS-M00
 PS43L- \bullet \blacktriangle RO-M00



Conformity / \rightarrow (NC) / \rightarrow
 Max. Actuation speed 1.5ms
 Min. force or torque 0.15N / 0.30Nm
 Weight 315g

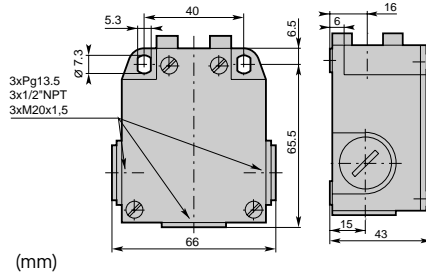
\varnothing 50 Rubber roller lever
 Code PS43L- \bullet \blacktriangle W0-M00

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■ Cable Gland

- P = Three cable inlet PG13.5 cable gland
- M = Three cable inlet M20x1.5 cable gland
- N = Three cable inlet 1/2" NPT cable gland



▲ 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 |

| | | | |
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| | | | |
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Conformity / \rightarrow (NC) / \rightarrow

Max. Actuation speed 1.5ms

Min. force or torque 0.15N / 0.30Nm

Weight 325g

Adjustable $\varnothing 22$ roller lever

Code nylon lever
stainless steel roller
steel ball bearing

PS43L- R1-M00
PS43L- R2-M00
PS43L- R3-M00

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |

Conformity / \rightarrow (NC) / \rightarrow

Max. Actuation speed 1.5ms

Min. force or torque 0.15N / 0.30Nm

Weight 330g

Adjustable $\varnothing 50$ rubber roller lever

Code

PS43L- W1-M00

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |

Conformity / \rightarrow (NC) /

Max. Actuation speed 1.5ms

Min. force or torque 0.15N / -

Weight 330g

Nylon actuator with stainless steel spring

Code

PS43L- LB-M00

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |

Conformity / \rightarrow (NC) /

Max. Actuation speed 1.5ms

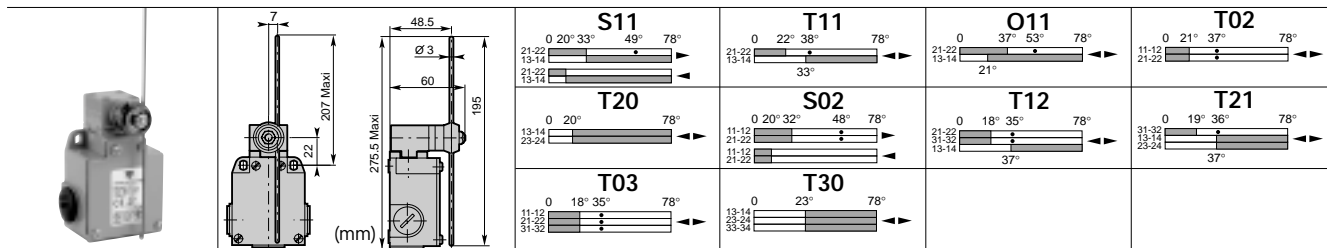
Min. force or torque 0.15N / -

Weight 330g

Stainless steel spring actuator

Code

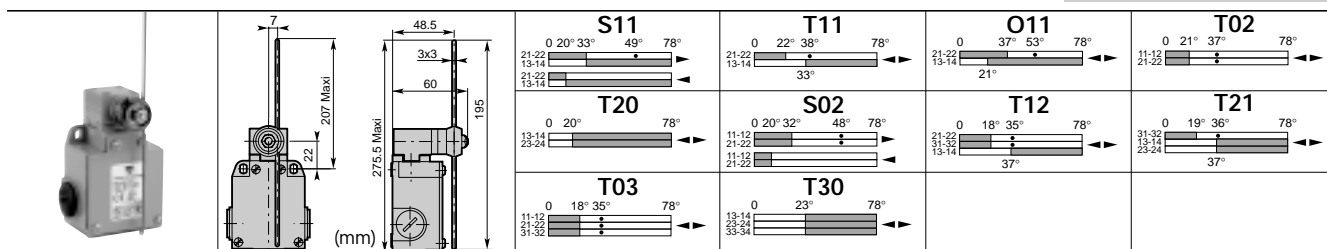
PS43L- LZ-M00



Conformity / \rightarrow (NC) / \rightarrow
 Max. Actuation speed 1.5ms
 Min. force or torque 0.15N / 0.30
 Weight 330g

Adjustable rod lever
 Code stainless steel rod $\varnothing 3$
 fiberglass rod $\varnothing 3$

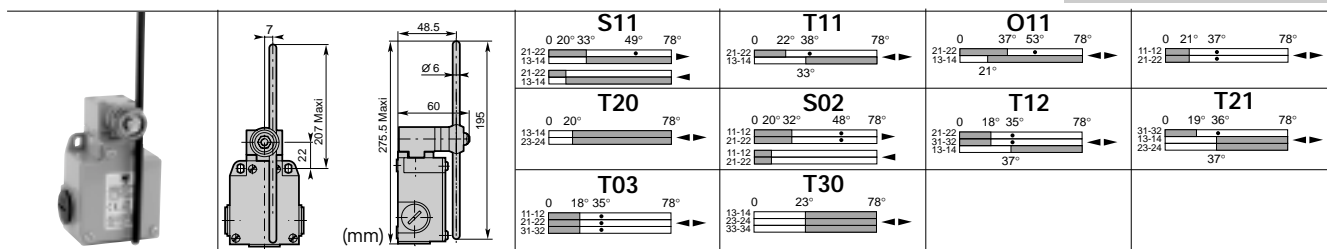
PS43L- LA-M00
 PS43L- LF-M00



Conformity / \rightarrow (NC) / \rightarrow
 Max. Actuation speed 1.5ms
 Min. force or torque 0.15N / 0.30
 Weight 330g

Adjustable rod lever
 Code square steel rod 3x3

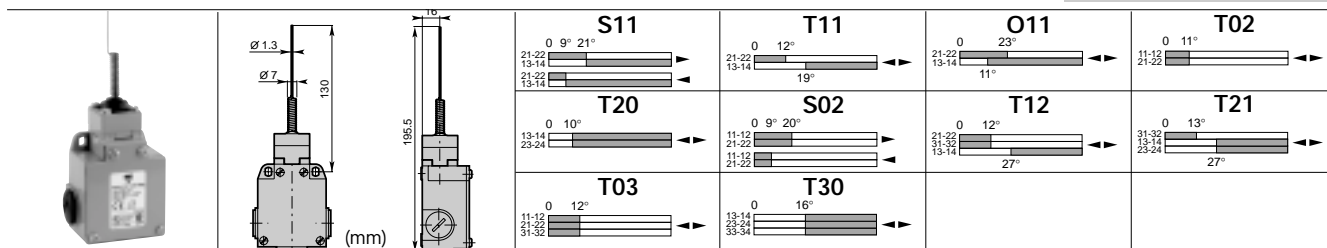
PS43L- L3-M00



Conformity / \rightarrow (NC) / \rightarrow
 Max. Actuation speed 1.5ms
 Min. force or torque 0.15N / 0.30Nm
 Weight 330g

Adjustable $\varnothing 6$ rod lever
 Code nylon rod
 fiberglass rod

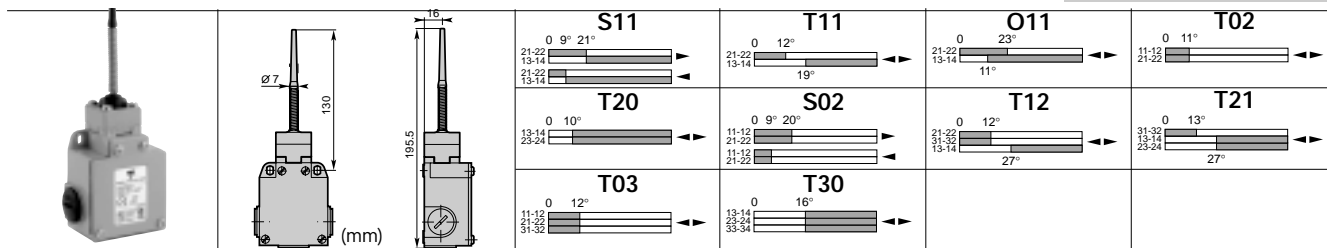
PS43L- LN-M00
 PS43L- LG-M00



Conformity / \rightarrow / \rightarrow
 Max. Actuation speed 1.0ms
 Min. force or torque 0.18N / -
 Weight 265g

Stainless steel spring multidirectional actuator
 Code

PS43L- LW-M00



Conformity / \rightarrow (NC) / \rightarrow
 Max. Actuation speed 1.0ms
 Min. force or torque 0.18N / -
 Weight 265g

Multidirectional nylon actuator with stainless steel spring
 Code

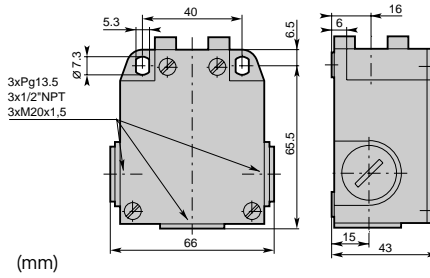
PS43L- LP-M00

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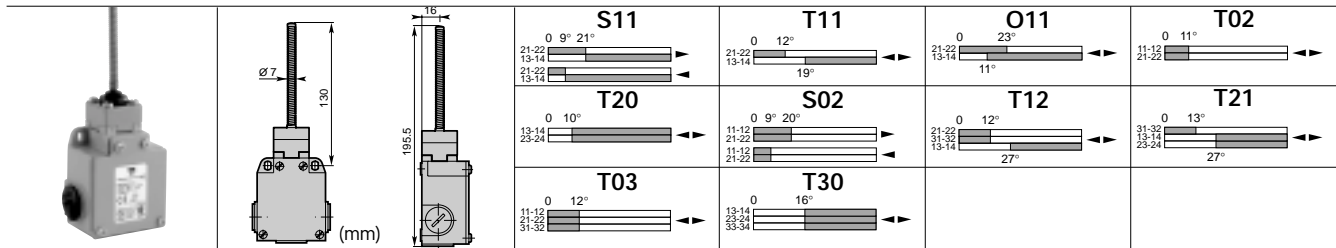
■ Cable Gland

- P = Three cable inlet PG13.5 cable gland
- M = Three cable inlet M20x1.5 cable gland
- N = Three cable inlet 1/2" NPT cable gland

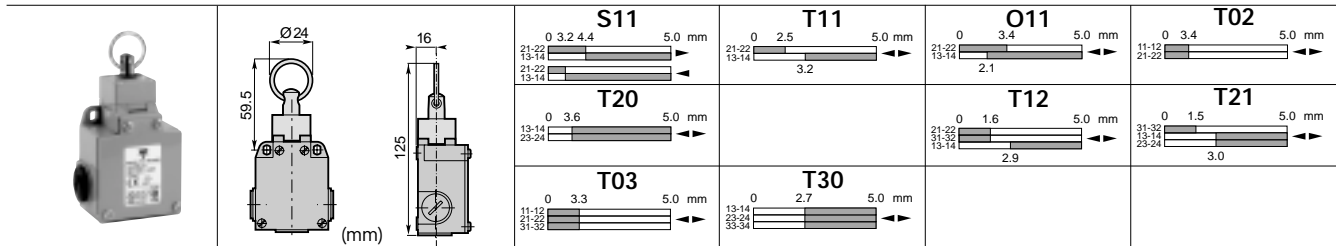


▲ Contact block (Zb type)

| | | | | | | | | | |
|-------------------------------------|--|--|--|--|--|---|--|---|--|
| 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 | |



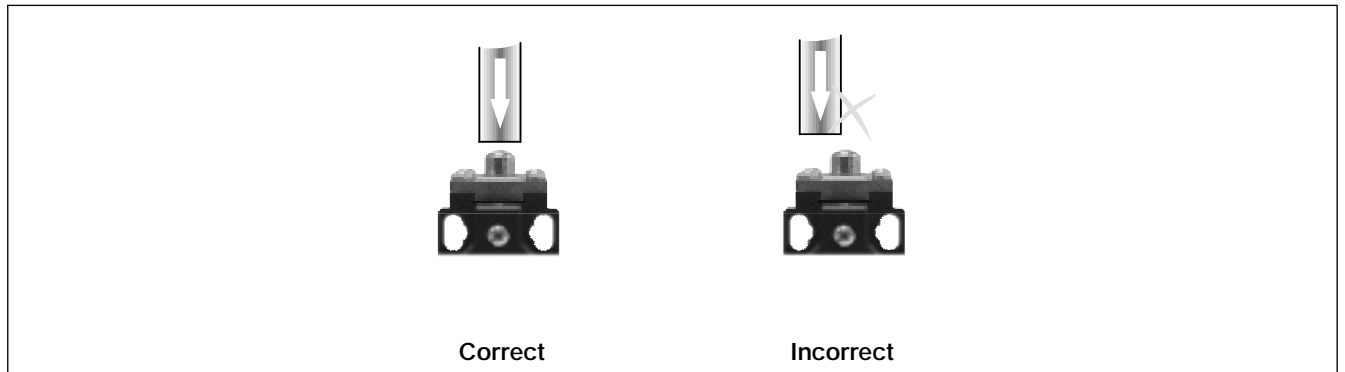
| | | |
|-----------------------------|-----------|---|
| Conformity / (NC) | / | Stainless steel spring multidirectional actuator |
| Max. Actuation speed | 1.0ms | Code |
| Min. force or torque | 0.18N / - | PS43L- [] [] LS-M00 |
| Weight | 270g | |



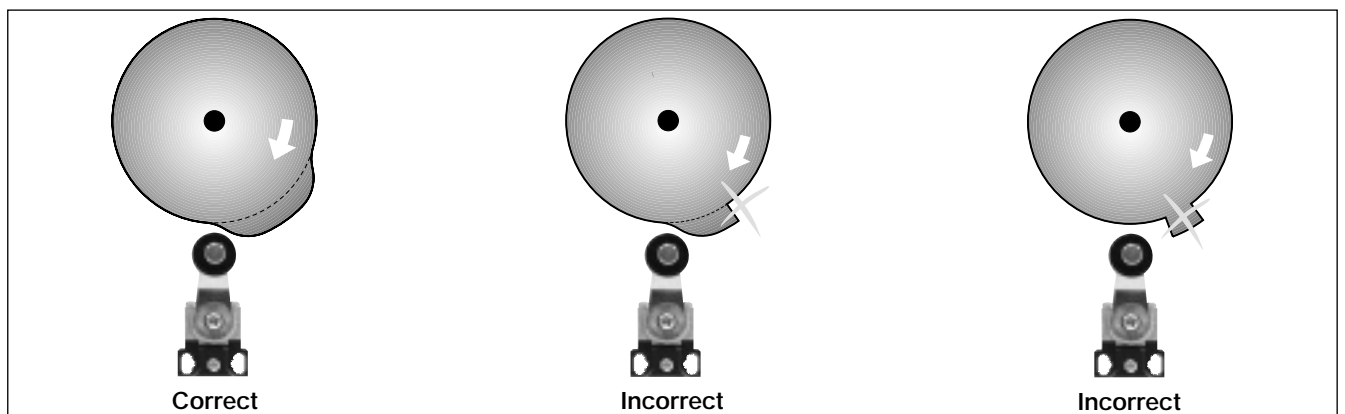
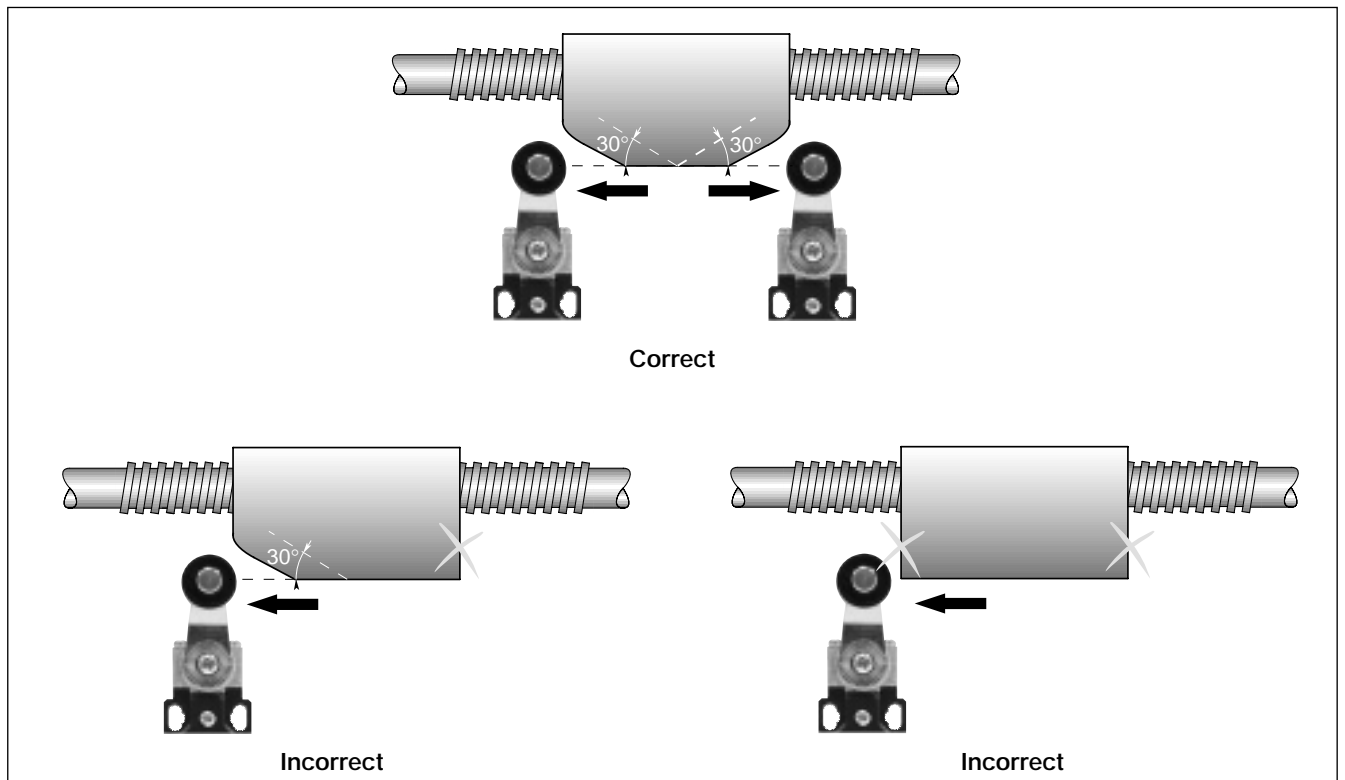
| | | |
|-----------------------------|---------|------------------------------|
| Conformity / (NC) | / | Pull action with ring |
| Max. Actuation speed | 0.5ms | Code |
| Min. force or torque | 25N / - | PS43L- [] [] N6-M00 |
| Weight | 270g | |

Utilization precautions

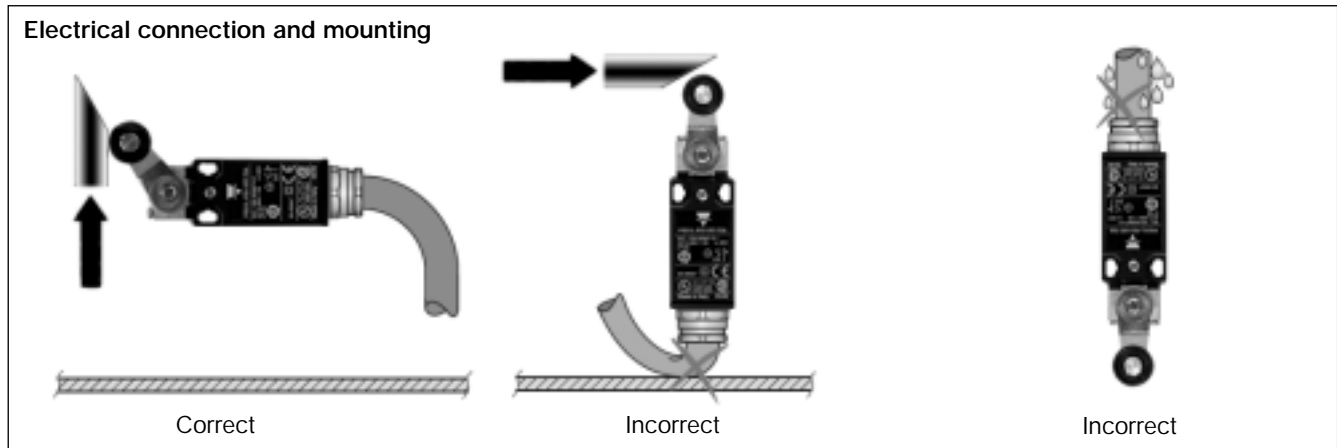
Plain plunger



Roller plunger or Roller lever



Utilization precautions



Adjustment

