

Limit Switches - Limit Type (PS21L) Plastic Body IP65



- Double Insulation
- Degree of protection IP65
- Reinforced UL-V0 thermoplastic fiber-glass body
- Positive Opening Operation \ominus
- Minimum Actuation Force/Torque
- Minimum Force to achieve Positive Opening Operation
- Precise operating points (consistency)
- Immune to electromagnetic disturbances
- Zb type contact blocks
- Current Ith = 10A
- Rated insulation voltage Ui = 500V
- UL, CSA, CE
- Conform with IEC 947-5-1 (EN 60947-5-1)

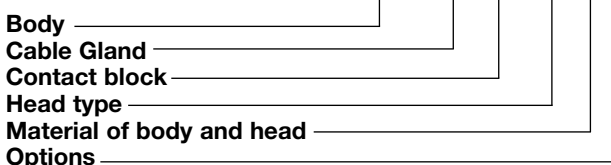
Product Description

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

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

Ordering Key

PS21L-PS11RT-T00



Description of the key codes

Cable gland

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

Contact block

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

Material of body and head

T	Thermoplastic body and Thermoplastic head
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Options

00	no option
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Head type

BE	Nylon roller external bent LEVER
BR	Nylon roller internal bent LEVER
L3	Adj. square \square 3 (\square 0.12") steel rod LEVER
LA	Adj. \varnothing 3 (0.12") rod LEVER stainless steel rod
LB	Nylon actuator with stainless steel spring
LF	Adj. fiberglass rod LEVER \varnothing 3 (0.12")
LG	Adj. fiberglass rod LEVER \varnothing 6 (0.24")
LN	Adj. nylon rod LEVER
LO	Steel PLUNGER with nylon roller + gasket
LP	Multidir. nylon actuator with stainless steel spring
LR	Steel PLUNGER with nylon roller
LS	Stainless steel spring multidir actuator
LW	Stainless steel spring multidir actuator (cat Whisker)
LZ	Stainless steel spring actuator
N6	Pull wire for simple stop
P0	Metal plain PLUNGER
P1	Nylon roller PLUNGER
PH	Metal PLUNGER + gasket
PN	Nylon plain PLUNGER
PR	Metal roller PLUNGER
R1	Adj. LEVER with nylon roller
RH	Plastic roller LEVER on metal PLUNGER (left)
RJ	Plastic roller LEVER on metal PLUNGER + gasket (left)
RL	Plastic roller LEVER on plastic PLUNGER (left)
RR	Plastic roller LEVER on plastic PLUNGER (right)
RT	Nylon roller LEVER
RV	Plastic roller LEVER on metal PLUNGER (right)
RW	Plastic roller LEVER on metal PLUNGER + gasket (right)
W0	\varnothing 50 (1.97") rubber roller LEVER
W1	Adj. LEVER with \varnothing 50 (1.97") rubber roller
W2	Adj. LEVER with adj. \varnothing 50 (1.97") rubber roller

Technical Data

Standards	IEC 60947-1, IEC 60947-5-1, EN 60947-1, EN 60947-5-1, UL508 and CSA C22-2 n°14
Certifications – Approvals	UL – CSA
Air temperature near the device - during operation - for storage	-25°C...+70°C/-13°F...+158°F -30°C...+80°C/-22°F...+176°F
Climatic withstand	According to IEC 68-2-3 and salty mist according to IEC 68-2-11
Mounting positions	All positions are authorized
Shock withstand (according to IEC 68-2-27 and 60068-2-27) (1/2 sinusoidal shock for 11ms) no change in contact position	50g/1.76oz (except for PS21L with head type W0, W1: 25g)
Resistance to vibrations (acc.to IEC 68-2-6 and EN 60068-2-6)	25g/0.88oz (10...500Hz) no change in position of contacts greater than 100µs
Protection against electrical shocks (according to IEC 536)	Class II
Degree of protection (according to IEC 529 and EN 60529)	IP65
Consistency (measured over 1 milion operations)	0.1mm/0.004" (upon closing point)

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	500V (degree of pollution 3) A 600 Q600
Rated impulse withstand voltage U_{imp} (according to IEC 60947-1 and EN 60947-1)	6kV
Conventional enclosed thermal current I_{the} (according to IEC 60947-1 and EN 60947-5-1) ($\theta \leq 40^\circ\text{C}/104^\circ\text{F}$)	10A
Short-circuit protection - gG type fuses	10A
Rated operational current	
I_e / AC-15 - acc.to IEC 60947-5-1	
24VAC (50/60Hz)	10.0A
130VAC (50/60Hz)	5.5A
230VAC (50/60Hz)	3.1A
240VAC (50/60Hz)	3.0A
400VAC (50/60Hz)	1.8A
- acc.to UL 508, CSA C22 n°14	A 600
I_e / DC-13 - acc.to IEC 60947-5-1	
24VDC	2.8A
110VDC	0.6A
250VDC	0.27A
- acc.to UL 508, CSA C22 n°14	Q 600
Electrical durability (according to IEC 60497-5-1 annex C) - max. switching frequency Cycles/h - load factor	Utilization categories AC-15 and DC-13 (see curves and value below) 3600 0.5
Connecting data of contact blocks Connecting terminals Connecting capacity 1 or 2 x mm ² / AWG Terminal marking	M3.5 (+,-) pozidriv 2 screw with cable clamp 0.5mm ² / AWG 20 to 2.5mm ² / AWG 14 According to EN 50013
Positivity	Contacts with positive opening operation as per IEC 60947-5-1 chapter 3

Diagram for snap action contact:

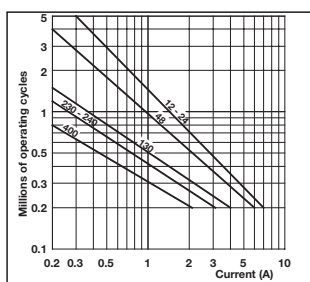
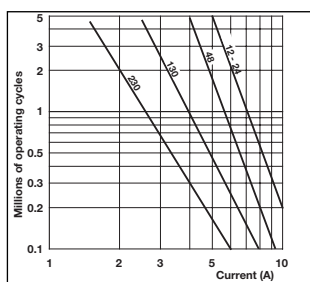


Diagram for slow action contact:



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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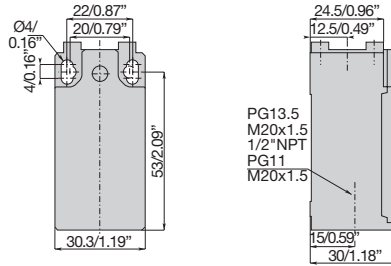
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● Cable Gland

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



		S11	T11	O11
		T02	T20	S02

Conformity / (NC)	EN 50047 / (NC)	Plain Plunger	
Max. Actuation speed	0.5m/s / 1.64ft/s	Code Nylon plunger	PS21L- ● ▲ PN-T00
Min. force or torque	15N / 30Nm	Code Metal plunger	PS21L- ● ▲ P0-T00
Weight	70.0g / 2.469oz		

		S11	T11	O11
		T02	T20	S02

Conformity / (NC)	EN 50047 / (NC)	Roller Plunger	
Max. Actuation speed	0.3m/s / 0.98ft/s	Code Metal roller	PS21L- ● ▲ PR-T00
Min. force or torque	12N / 30Nm	Code Nylon roller	PS21L- ● ▲ P1-T00
Weight	75.0g / 2.645oz		

		S11	T11	O11
		T02	T20	S02

Conformity / (NC)	EN 50047 / (NC)	Metal plunger with dust protection cup	
Max. Actuation speed	0.5m/s / 1.64ft/s	Code	PS21L- ● ▲ PH-T00
Min. force or torque	15N / 30Nm		
Weight	70.0g / 2.469oz		

		S11	T11	O11
		T02	T20	S02

Conformity / (NC)	EN 50047 / (NC)	Plastic roller lever	
Max. Actuation speed	1.0m/s / 3.28ft/s	Code On plastic plunger	PS21L- ● ▲ RL-T00
Min. force or torque	7N / 24Nm	Code On metal plunger	PS21L- ● ▲ RH-T00
Weight	75.0g / 2.645oz		

		mm/inches	S11	T11	O11
			T02	T20	S02

Conformity / (NC)	/	Plastic roller lever
Max. Actuation speed	1m/s / 3.28ft/s	Code On metal plunger PS21L- [] [] RV-T00
Min. force or torque	7N / 24Nm	On plastic plunger PS21L- [] [] RR-T00
Weight	80.0g / 2.822oz	

		mm/inches	S11	T11	O11
			T02	T20	S02

Conformity / (NC)	EN 50047 /	Plastic roller lever on metal plunger with dust protection cup
Max. Actuation speed	1.0m/s / 3.28ft/s	Code PS21L- [] [] RJ-T00
Min. force or torque	7N / 24Nm	
Weight	75.0g / 2.645oz	

		mm/inches	S11	T11	O11
			T02	T20	S02

Conformity / (NC)	/	Plastic roller lever on metal plunger with dust protection cup
Max. Actuation speed	1.0m/s / 3.28ft/s	Code PS21L- [] [] RW-T00
Min. force or torque	7N / 24Nm	
Weight	80.0g / 2.822oz	

		mm/inches	S11	T11	O11
			T02	T20	S02

Conformity / (NC)	EN 50047 /	Adjustable plastic roller lever on metal plunger
Max. Actuation speed	1.0m/s / 3.28ft/s	Code PS21L- [] [] LR-T00
Min. force or torque	7N / 24Nm	
Weight	80.0g / 2.822oz	

		mm/inches	S11	T11	O11
			T02	T20	S02

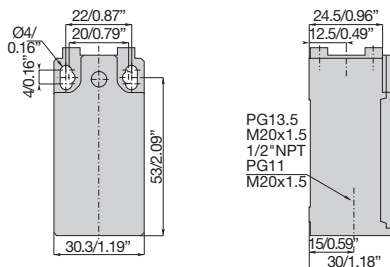
Conformity / (NC)	EN 50047 /	Adj. plastic roller lever on metal plunger with dust prot. cup
Max. Actuation speed	1.0m/s / 3.28ft/s	Code PS21L- [] [] LO-T00
Min. force or torque	7N / 24Nm	
Weight	80.0g / 2.822oz	

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● Cable Gland

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- M** = one cable inlet M20x1.5 cable gland
- N** = one cable inlet 1/2" NPT cable gland
- B** = one cable inlet PG11 cable gland
- A** = one cable inlet M16x1.5 cable gland



▲ Contact block (Zb type)

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	

			S11		T11		O11	
			T02		T20		S02	

Conformity / (NC)	EN 50047 / (NC)	Ø18 (0.71") Nylon roller lever	PS21L- ● ▲ RT-T00
Max. Actuation speed	1.5m/s / 4.92ft/s	Code	
Min. force or torque	0.10N / 0.32Nm		
Weight	95.0g / 3.351oz		

			S11		T11		O11	
			T02		T20		S02	


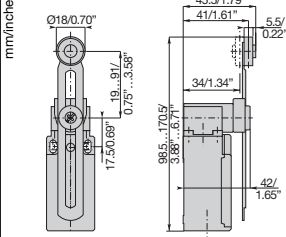
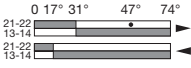
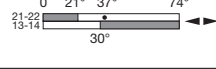
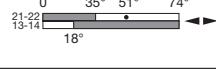
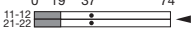

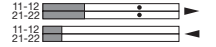
Conformity / (NC)	/ (NC)	Ø50 (1.97") Rubber roller lever	PS21L- ● ▲ W0-T00
Max. Actuation speed	1.5m/s / 4.92ft/s	Code	
Min. force or torque	0.10N / 0.32Nm		
Weight	115.0g / 4.056oz		

			S11		T11		O11	
			T02		T20		S02	


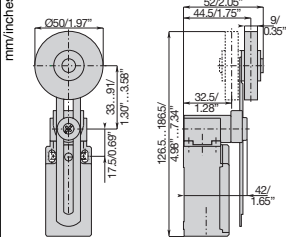
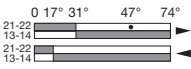
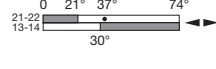
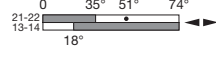
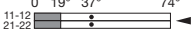


Conformity / (NC)	/ (NC)	Ø18 (0.71") Roller internal bent lever	PS21L- ● ▲ BR-T00
Max. Actuation speed	1.5m/s / 4.92ft/s	Code	
Min. force or torque	0.10N / 0.32Nm		
Weight	95.0g / 3.351oz		

			S11		T11		O11	
			T02		T20		S02	


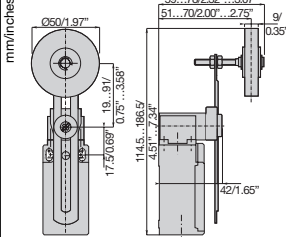
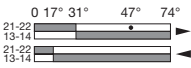
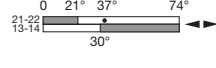
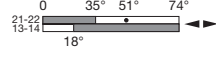
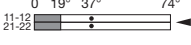


Conformity / (NC)	/ (NC)	Ø18 (0.71") Roller external bent lever	PS21L- ● ▲ BE-T00
Max. Actuation speed	1.5m/s / 4.92ft/s	Code	
Min. force or torque	0.10N / 0.32Nm		
Weight	95.0g / 3.351oz		

		S11 	T11 	O11 
		T02 	T20 	S02 


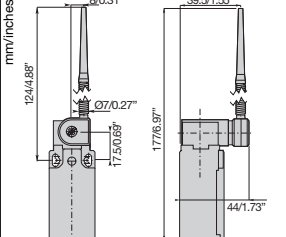
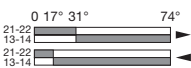
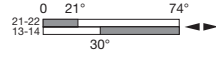
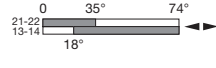
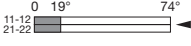

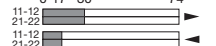
Conformity / (NC)	/	Adjustable lever with Ø18 (0.71") nylon roller
Max. Actuation speed	1.5m/s / 4.92ft/s	Code
Min. force or torque	0.10N / 0.32Nm	PS21L- [] [] R1-T00
Weight	105.0g / 3.704oz	

		S11 	T11 	O11 
		T02 	T20 	S02 


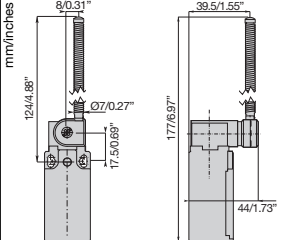
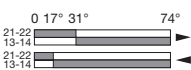
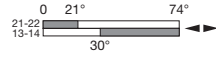
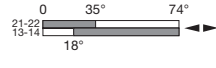
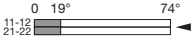

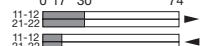
Conformity / (NC)	/	Adjustable lever with Ø50 (1.97") rubber roller
Max. Actuation speed	1.5m/s / 4.92ft/s	Code
Min. force or torque	0.10N / 0.32Nm	PS21L- [] [] W1-T00
Weight	125.0g / 4.409oz	

		S11 	T11 	O11 
		T02 	T20 	S02 

Conformity / (NC)	/	Adjustable lever with adjustable Ø50 (1.97") rubber roller
Max. Actuation speed	1.5m/s / 4.92ft/s	Code
Min. force or torque	0.10N / 0.32Nm	PS21L- [] [] W2-T00
Weight	130.0g / 4.586oz	

		S11 	T11 	O11 
		T02 	T20 	S02 

Conformity / (NC)	/	Nylon actuator with stainless steel spring
Max. Actuation speed	1.5m/s / 4.92ft/s	Code
Min. force or torque	0.10N / -	PS21L- [] [] LB-T00
Weight	105.0g / 3.704oz	

		S11 	T11 	O11 
		T02 	T20 	S02 

Conformity / (NC)	/	Stainless steel spring actuator
Max. Actuation speed	1.5m/s / 4.92ft/s	Code
Min. force or torque	0.10N / -	PS21L- [] [] LZ-T00
Weight	105.0g / 3.704oz	

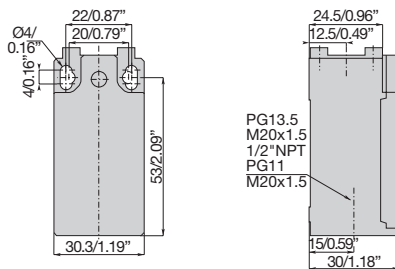
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● Cable Gland

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

		S11	T11	O11
		T02	T20	S02

Conformity / (NC)	/ (NC)	Adjustable Ø3 (0.12") rod lever
Max. Actuation speed	1.5m/s / 4.92ft/s	Code Stainless steel rod
Min. force or torque	0.10N / 0.32Nm	Fiberglass rod
Weight	105.0g / 3.704oz	PS21L- ● ▲ LA-T00 ● ▲ LF-T00

		S11	T11	O11
		T02	T20	S02

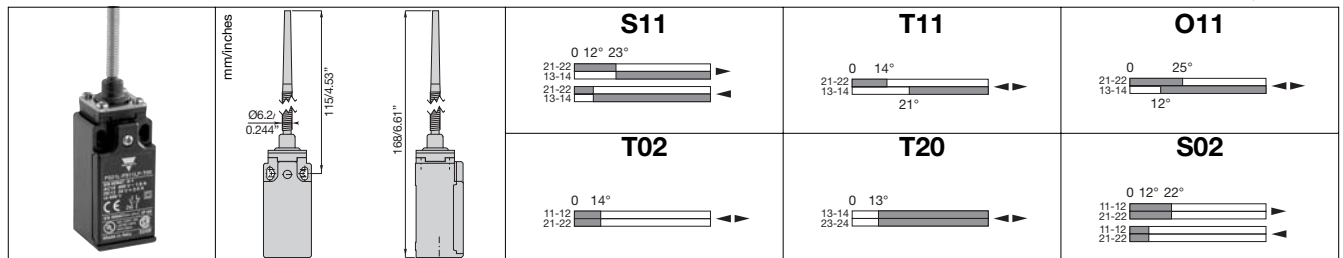
Conformity / (NC)	/ (NC)	Adjustable Ø6 (0.24") rod lever
Max. Actuation speed	1.5m/s / 4.92ft/s	Code Nylon rod
Min. force or torque	0.10N / 0.32Nm	Fiberglass rod
Weight	115.0g / 4.056oz	PS21L- ● ▲ LN-T00 ● ▲ LG-T00

		S11	T11	O11
		T02	T20	S02

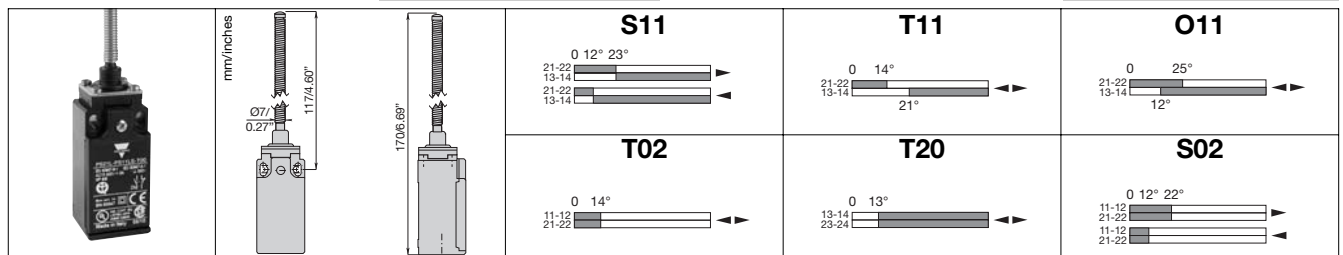
Conformity / (NC)	/ (NC)	Adjustable square steel rod lever
Max. Actuation speed	1.5m/s / 4.92ft/s	Code
Min. force or torque	0.10N / 0.32Nm	PS21L- ● ▲ L3-T00
Weight	105.0g / 3.704oz	

		S11	T11	O11
		T02	T20	S02

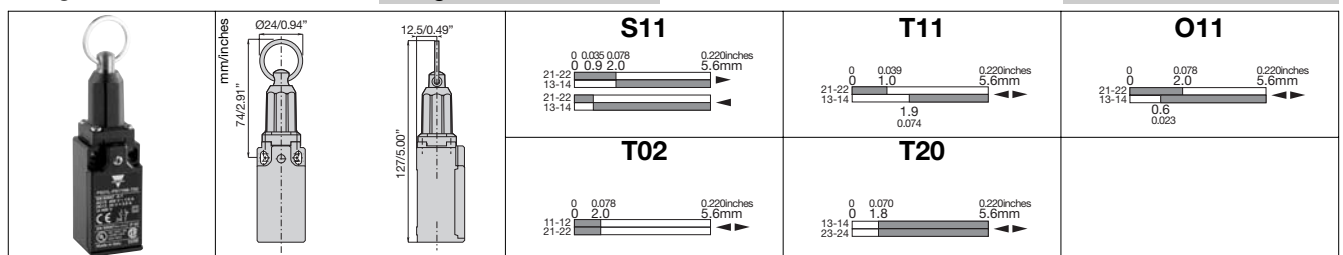
Conformity / (NC)	/	Stainless steel spring multidirectional actuator
Max. Actuation speed	1.0m/s / 3.28ft/s	Code
Min. force or torque	0.12N / -	PS21L- ● ▲ LW-T00
Weight	80.0g / 2.822oz	



Conformity / (NC)	/	Multidirectional nylon actuator with stainless steel spring
Max. Actuation speed	1.0m/s / 3.28ft/s	Code
Min. force or torque	0.12N / -	PS21L- [●] [▲] LP-T00
Weight	85.0g / 2.998oz	







Conformity / (NC)	/	Stainless steel spring multidirectional actuator
Max. Actuation speed	1.0m/s / 3.28ft/s	Code
Min. force or torque	0.12N / -	PS21L- [●] [▲] LS-T00
Weight	90.0g / 3.175oz	



Conformity / (NC)	/	Pull action with ring
Max. Actuation speed	0.5m/s / 1.64ft/s	Code
Min. force or torque	30N / -	PS21L- [●] [▲] N6-T00
Weight	115.0g / 4.056oz	

Accessories for Pull Wire Limit Switches

			
OCC 8 Stay bolt	MOR 05 Rope Clamp	RED 05 Rope Eye	FUN 05 Rope 5mm x 100m 0.20" x 328.08ft

Utilization precautions

Plain plunger

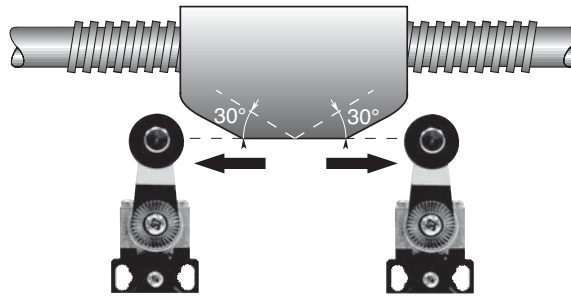


Correct

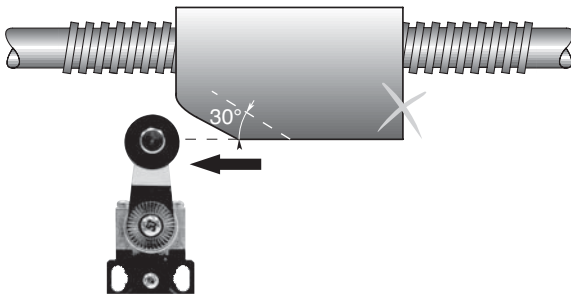


Incorrect

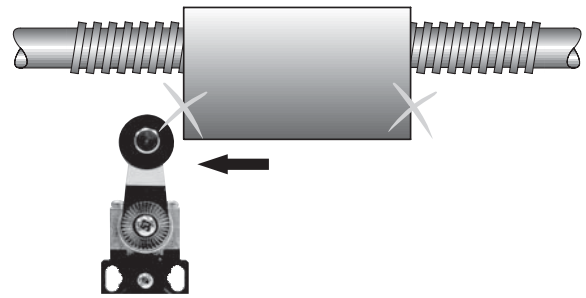
Roller plunger or Roller lever



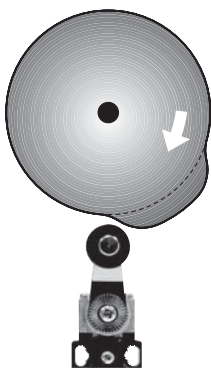
Correct



Incorrect



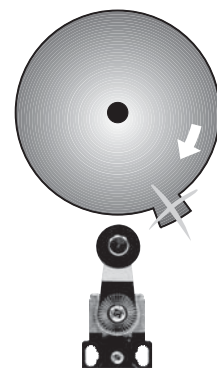
Incorrect



Correct



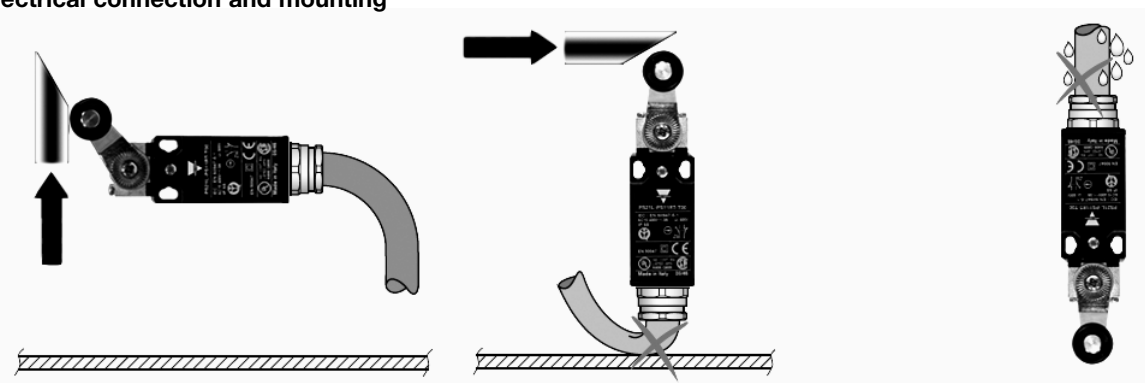
Incorrect



Incorrect


Utilization precautions

Electrical connection and mounting



Correct Incorrect Incorrect

Maximum length application of pullwire head

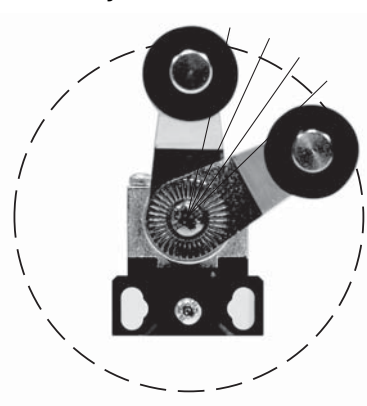


$\leq 5\text{m}$ $\leq 5\text{m}$ $\leq 5\text{m}$ $\leq 5\text{m}$ $\leq 5\text{m}$
 $\leq 16.40\text{ft}$ $\leq 16.40\text{ft}$ $\leq 16.40\text{ft}$ $\leq 16.40\text{ft}$ $\leq 16.40\text{ft}$

6m/19.70ft max. 15m/49.21ft max.

Adjustement

Position adjustment of lever



Free position adjustment
10 in 10° of lever

Position adjustment of lever and head

