

TANGO

Position limit switch



Cross position limit switches designed for controlling the movement of overhead travelling cranes, hoists and complex machine tools. Tango has rods with maintained positions every 60°.

FEATURES

- Modern design and overall dimensions studied to facilitate installation and maintenance operations.
- 4 fixing holes.
- Rods with 4 maintained positions every 60°.
- Positive opening NC contacts for safety functions.
- Mechanical life of switches: 1 million operations.
- Operation frequency: 3600 operations / hour max.
- IP protection degree: Tango is classified IP65.
- Extreme temperature resistance: -25°C to +70°C.
- Enclosure and head in thermoplastic material (nylon reinforced with fiberglass) and internal components in technopolymers to guarantee long life-cycle and constant performance.
- All materials and components used are wear resistant and guarantee protection of the unit against water and dust.

OPTIONS

- Slow action switches with 1NC or 1NO contacts.
- Available with 2, 3 or 4 switches and different rod lengths.

CERTIFICATIONS

- CE marking and EAC certification.


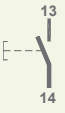
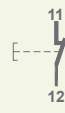
CERTIFICATIONS

Conformity to Community Directives	2006/95/CE Low Voltage Directive
	2006/42/CE Machinery Directive
Conformity to CE Standards	EN 60204-1 Safety of machinery - Electrical equipment of machines
	EN 60947-1 Low-voltage switchgear and controlgear
	EN 60947-5-1 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electromechanical control circuit devices
	EN 60529 Degrees of protection provided by enclosures
Markings and homologations	CE EAC

GENERAL TECHNICAL SPECIFICATIONS

Ambient temperature	Storage -40°C/+70°C
	Operational -25°C/+70°C
IP protection degree	IP 65
Insulation category	Class II
Operation frequency	3600 operations/hour max
Cable entry	Cable clamp M20

TECHNICAL SPECIFICATIONS OF THE MICROSWITCHES

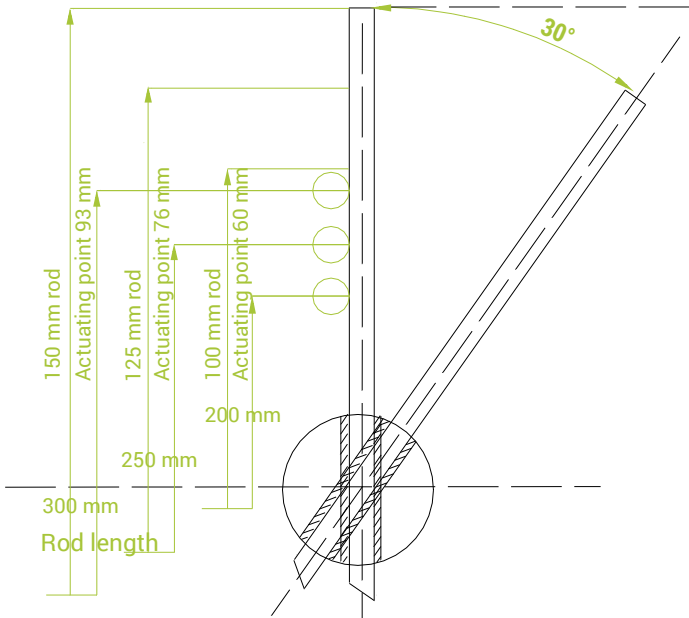
Code	PRSL1000PI	PRSL1001PI
Utilisation category		AC 15
Rated operational current		3 A
Rated operational voltage		250 Vac
Rated thermal current		10 A
Rated insulation voltage		500 Vac
Mechanical life		1x10 ⁶ operations
Connections	Screw-type terminals	
Wires	1x2.5 mm ² , 2x1.5 mm ² (UL - (c)UL: use 60°C or 75°C copper (CU) conductor and wire 16-18 AWG)	
Tightening torque	0.6 Nm	
Microswitch type	Double break, slow action	Double break, slow action
Contacts	1NO	1NC (All NC contacts are of the positive opening operation type )
Scheme		
Markings and homologations	CE cULus EAC	

MAXIMUM ACTUATING DIMENSIONS

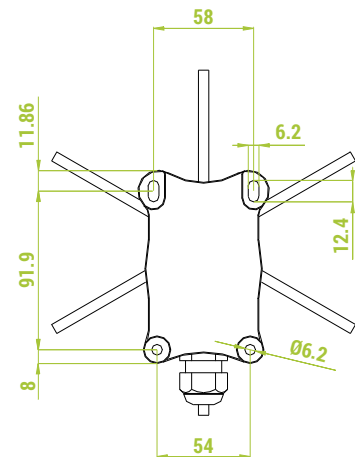
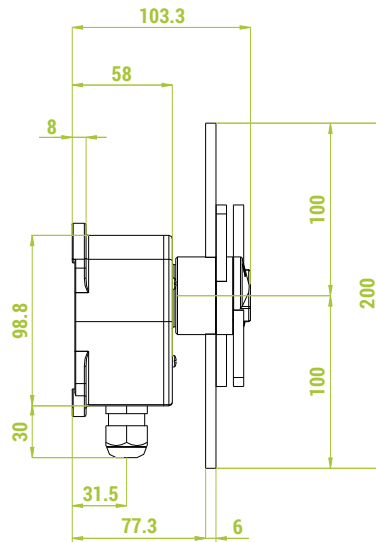
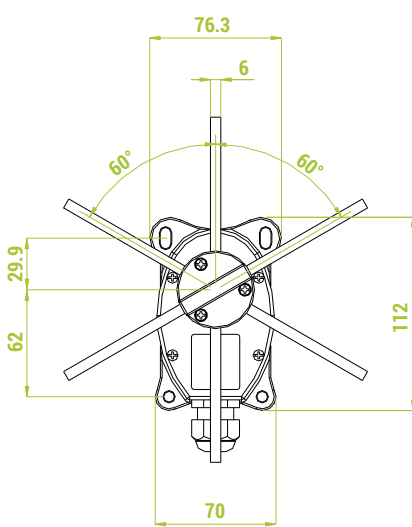
Rods with 4 maintained positions

- Pre-travel angle for rotation contact operation: 34°
- Maximum rotation angle for each maintained position: 60°
- Average angle for the mechanical tripping: 30°
- Maintained positions each: 60°

In order to ensure proper operations, the dimensions shall not be increased; anyhow, they can be decreased, taking into account that the closer the impact point is to the center of the head, the higher the impact and the mechanical wear of rod and shaft are.

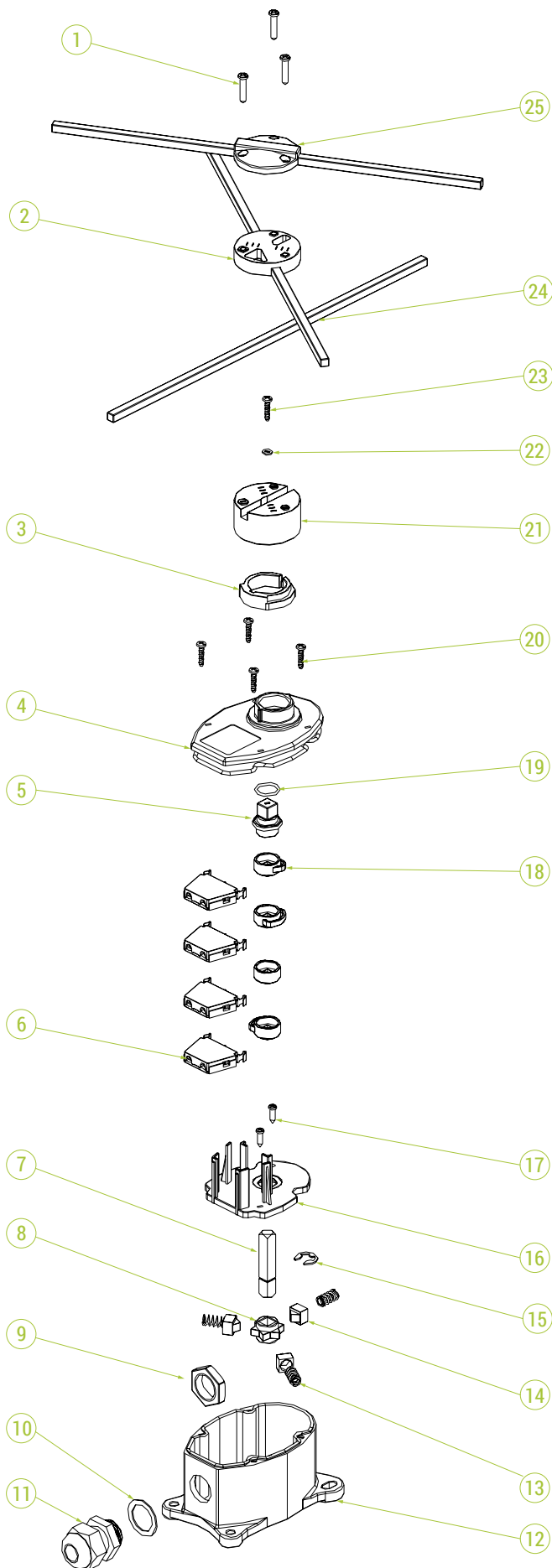


OVERALL DIMENSIONS (mm)




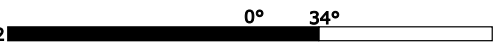
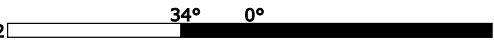
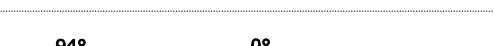
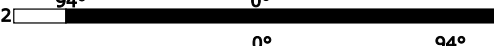
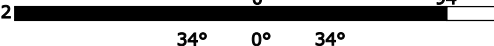

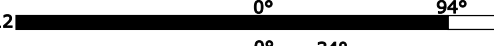
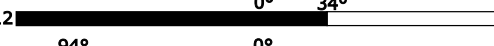
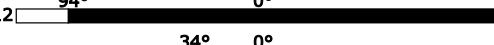
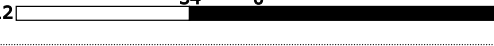
EXPLODED DRAWING

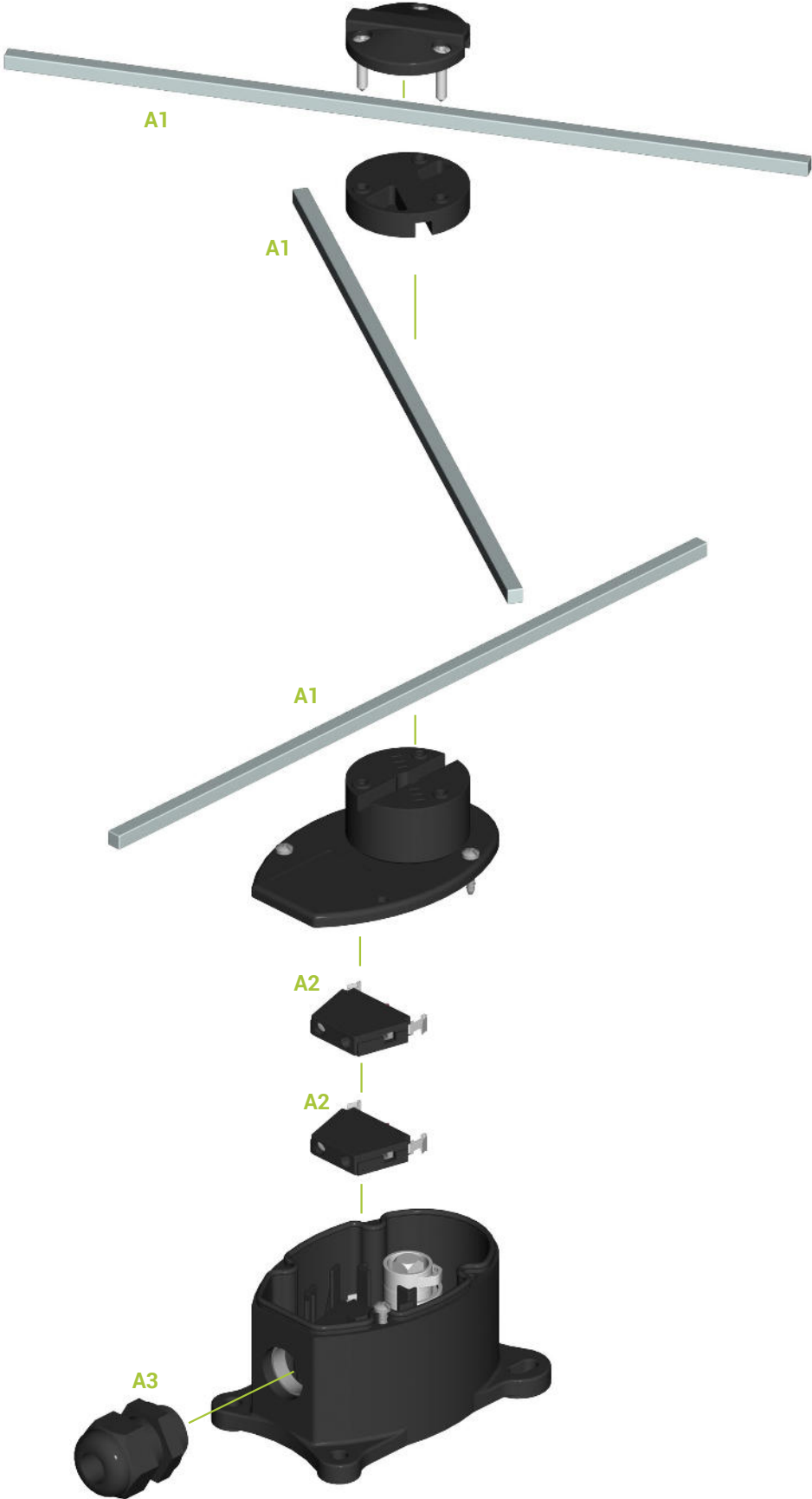
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LIMIT SWITCHES




The limit switches are equipped with 1NC slow action switches PRSL1001PI .

No. of switches PRSL1001PI	Actuating travel	Rod length	Code
2	11-12  0° 34°	300 mm	PF48020001
	11-12  34° 0°	250 mm	PF48020005
	11-12  0° 34°	200 mm	PF48020006
3	11-12  94° 0°	300 mm	PF48030001
	11-12  0° 94°		
	11-12  34° 0° 34°		
4	11-12  0° 94°	300 mm	PF48040001
	11-12  0° 34°	250 mm	PF48040006
	11-12  94° 0°	200 mm	PF48040007
	11-12  34° 0°		



COMPONENTS

Switches

Ref.	Drawing	Description	Scheme	Code
A2		1NO switch		PRSL1000PI
		1NC switch		PRSL1001PI

Accessories

Ref.	Drawing	Description	Code
A1		Rod 6x6x200 mm	PRT03006PE
		Rod 6x6x250 mm	PRT03011PE
		Rod 6x6x300 mm	PRT03012PE
A3		Cable clamp M20	PRPS0064PE

USE AND MAINTENANCE INSTRUCTIONS

The Tango limit switch is an electromechanical device for low voltage control circuits (EN 60947-1, EN 60947-5-1) for use as electric equipment on machines (EN 60204-1) in compliance with the essential requisites of the Low Voltage Directive 2006/95/CE and the Machine Directive 2006/42/CE.

The limit switch is designed for use in industrial environments with even very severe climatic conditions (working temperatures from -25°C to +70°C and is suitable for use in tropical environments). The equipment is not suitable for use in environments with a potentially explosive atmosphere, in the presence of corrosive agents or high percentage of sodium chloride (saline mist). Contact with oil, acids and solvents may damage the equipment; avoid using them for cleaning. The limit switches is not suitable for use in environments with a potentially explosive atmosphere.

The Tango limit switch must be fastened through the holes on the side of the case (12)*; in particular the top holes are slots to facilitate fastening and adjustment of the limit switch, which must be suitably positioned to ensure correct impact on the drive rods (24). To prevent malfunctions or problems; examine the technical documentation to view the recommended impact points.

Turn the closing screws (1) and loosen the closure of the rod holder (25, 21, 2), then you can move the rods to adjust them; afterwards, tighten the closing screws (1) with a force of 100cN m to ensure secure fastening of the rod holder. We recommend adjusting the impact point of the rods (24) by adjusting the fastening of the entire limit switch and not simply moving the rods.

The switches (6) of the Tango are designed for the auxiliary control of contacts or electromagnetic charges in general (utilization category AC-15 in accordance with EN 60947-5-1). The switches (6) have contacts with positive mechanical opening operation (EN 60947-5-1). Do not connect more than one phase for the switches (6). Never oil or grease the switches (6).

To facilitate wiring the switches (6) the limit switches can be removed from the case (12); after wiring, the switches (6) must be replaced correctly in the case (12), then assemble the cover (4) and tighten the screws (23) with a minimum force of 100cN m.

Installation of the limit switches should be done by competent, trained personnel. The electric wiring must be done in a workmanlike manner by qualified personnel in compliance with the regulations in force.

Before performing installation and maintenance of the limit switches, disconnect the machine from the power mains.

Operations for installation and correct wiring of limit switch

- Fasten the limit switch securely to prevent malfunctions during use of the device; to fasten it, use the holes on the sides of the case (12); fasten the limit switch so that the drive rods (24) function correctly, by examining the technical documentation to identify the recommended point of impact; adjust the rods (24), by turning the closing screws (1) on the relative rod holder elements (25, 21, 2). Afterwards, tighten the screws (1) with a force of 100 cNm.
- Introduce the multi-pole wire in the limit switch through the wire clamp (11), strip the multi-pole cable for a length sufficient to wire it to the switches (6).
- Wire the switches (6) as shown in the wiring diagrams on each (6) (tighten the terminal screws with a torque of 0.6 Nm (5.3 lbs/inch); insertability of wires into the switch terminals equal to 2x1.5mm² – 1x2.5 mm² (UL (c)UL: use 60°C or 75°C copper (CU) conductors)).
- After wiring tighten the wire in the wire clamp (11).
- Close the limit switch with its cover (4) with the closing screws (20); applying a force of at least 100cN m.

Operations of routine maintenance

- Check the correct tightening of the closing screws (20) on the cover (4).
- Check the conditions of the wires on the switches (6) (if necessary, tighten the screws on the terminals).
- Tighten the multi-pole wire in the wire clamp (12).
- Check the conditions of the complete limit switch (25, 24, 21, 12, 4, 2).
- Check the fastening of the limit switch.

Any change to parts of the limit switch will invalidate the rating plate data and identification of the device, and render the warranty null and void. In case of replacement of any part, use only original replacements.

TER is not liable for damages caused by improper use of the device and installation which is not made correctly.

* Please refer to the exploded drawing in the catalogue.