

### Top push rod plunger



TS1... - TL1...



TS2... - TL2...

Order code	Contacts	Plunger material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
TS1 01 10	1NO+1NC Snap action	Steel	1	0.120
TL1 01 10	1NO+1NC Ⓢ Slow action	Steel	1	0.120
With reset button on front.				
TS2 01 10	1NO+1NC Snap action	Steel	1	0.130
TL2 01 10	1NO+1NC Ⓢ Slow action	Steel	1	0.130

Ⓢ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Type	▶ Forward travel of snap action contacts	□ open
	◀ Return travel of snap action contacts	■ closed
TS1 01... TS2 01...	▶ 21-22 13-14 ◀ 21-22 13-14	
TL1 01... TL2 01...	▶ 21-22 13-14	
TS1 05... TS2 05...	▶ 21-22 13-14 ◀ 21-22 13-14	
TL1 05... TL2 05...	▶ 21-22 13-14	

#### General characteristics

The TS-TL series limit switches are designed and manufactured according to European standards EN 50041 for dimensions. The insulated housing of the limit switch is made of self-extinguishing thermoplastic giving excellent mechanical stability and is suitable, as a result, for assembly on machinery or installations in the general-purpose industrial field as well as saline environments (for example close by the sea). The housing sturdiness allows mounting of limit switches in heavy duty applications. The double-insulated housing of the limit switch warrants and protects internal circuits against shocks or impacts and in industrial environments, against accidental ingress of tools and accidental contact. The contacts are dimensioned to ensure self cleaning of the silver-alloy contact surfaces. Contacts (NC) of the TL series have direct (positive) opening action to prevent sticking or welding.

#### Operational characteristics

- Maximum operating rate: 1200 cycles/h
- Switching speed: 0.5-1.5m/s
- Mechanical life: >10 million cycles (100,000 cycles only for reset button versions)
- IEC utilisation category:
  - DC13 duty: 1.5A 24V
  - AC15 duty: 6A 250V
- IEC conventional thermal current Ith: 6A
- IEC rated insulation voltage Ui: 250VAC
- Contact resistance: <10mΩ
- Short-circuit backup protection: 10A gG/SC quick fuse
- Cable connection: Self-releasing screw terminal
- Operating force: 6N/1.35lb (TS...01 and TL...01)
- Operating force: 3Ncm/4.25ozin (TS...05 and TL...05)
- TS...05 and TL...05 have axial rotation in any of 4 positions (90°)
- TS...05 and TL...05 have lever inclination, 360° adjustment
- Housing cable entry: PG13.5
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1lbin
  - Contact terminals: 0.8Nm / 7lbin
  - Body lid screw fixing: 0.8Nm / 7lbin
- Conductor section: 1 or 2 2.5mm<sup>2</sup> max / 16-14 AWG
- Ambient conditions:
  - Operating temperature: -25 ... +70°C
  - Storage temperature: -40...+70°C
  - Pollution degree: 3
  - IEC degree of protection: IP66

#### Certifications and compliance

Certifications obtained: EAC, UL Listed for USA and Canada (cULus - File E93601), as Auxiliary Devices - Limit switches. Compliant with standards: IEC/EN 60947-1, IEC/EN 60947-5-1, IEC/EN 60204-1, EN 81-1, EN 50041, UL508, CSA C22.2 n° 14.

### Roller lever



TS1... - TL1...



TS2... - TL2...

Order code	Contacts	Roller material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
TS1 05 20 AⓈ	1NO+1NC Snap action	Plastic Ø20x5	1	0.120
TS1 05 21 A		Metal Ø20x5	1	0.125
TS1 05 24 AⓈ		Rubber Ø50x10	1	0.135
TL1 05 20 AⓈ	1NO+1NC Ⓢ Slow action	Plastic Ø20x5	1	0.120
TL1 05 21 A		Metal Ø20x5	1	0.125
TL1 05 24 AⓈ		Rubber Ø50x10	1	0.135
With reset button.				
TS2 05 20 AⓈ	1NO+1NC Snap action	Plastic Ø20x5	1	0.130
TS2 05 21 AS		Metal Ø20x5	1	0.135
TS2 05 24 AⓈ		Rubber Ø50x10	1	0.145
TL2 05 20 AⓈ	1NO+1NC Ⓢ Slow action	Plastic Ø20x5	1	0.130
TL2 05 21 AS		Metal Ø20x5	1	0.135
TL2 05 24 AⓈ		Rubber Ø50x10	1	0.145

Ⓢ Direct (positive) opening action ⊖; safety function according to IEC/EN 60947-5-1.

Ⓢ Roller lever plunger limit switches with 30x5mm plastic roller are available and can be ordered substituting the number 20 with 23 in the above-given order codes.

Ⓢ Roller lever plunger limit switches with 35x15mm rubber roller are available and can be ordered substituting the number 24 with 22 in the above-given order codes.

Ø20x5mm = Ø0.79x0.2".

Ø50x10mm = Ø1.97x0.39".

Ø30x5mm = Ø1.81x0.2".

Ø35x15mm = Ø1.38x0.59".