

### Wobble stick, omnidirectional



TS1... - TL1...

Order code	Contacts	Rod material	Qty per pkg	Wt
			n°	[kg]
Without reset button.				
<b>TS1 09 92</b>	1NO+1NC Snap action	Flexible	1	0.115
<b>TL1 09 92</b>	1NO+1NC Slow action	Flexible	1	0.115

Type	▶ Forward travel of snap action contacts	◀ Return travel of snap action contacts	□ open	■ closed
TS1 09...	21-22 13-14	21-22 13-14		0 36°
TL1 09...	21-22 13-14			0 36°
TL2 10...	21-22 13-14			0 [mm (in)] 4.2 (0.17")

#### 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
- 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
- Operating torque: 1Ncm/1.42ozin (TS1 09... and TL1 09...)
- Operating force: 8N/1.8lb (TL2 10...)
- TL2 10... has axial rotation in any of 4 positions (90°)
- TL2 10... has vertical or sideways key withdrawal
- Housing cable entry: PG13.5
- Cable connection: Self-releasing screw terminal
- Tightening torque:
  - Switch fixing: 2.5Nm / 22.1bin
  - 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.

### Key operated



TL2...

Order code	Contacts	Key shape ②	Qty per pkg	Wt
			n°	[kg]
Without reset button. Front key withdrawal ③.				
<b>TL2 10 10</b>	1NO+1NC ① Slow action	Straight	1	0.120
<b>TL2 10 11</b>		Angled	1	0.120
<b>TL2 10 12</b>		Angled "T"	1	0.120
<b>TL2 10 13</b>		Straight "T"	1	0.120

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

② Version with key withdrawal on the left or on the right is available; replace the last letter (A) of the order code respectively with S or D (e.g. TL2 10 10S - left or TL2 10 10D - right). For further assistance, consult Customer Service for information; see contact details on inside front cover.

③ The key is standard supplied.

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Extra keys.			
<b>A 20746</b>	Straight key	10	0.013
<b>A 20747</b>	Angled key	10	0.013
<b>P 32753</b>	Angled "T" key	10	0.008
<b>P 32752</b>	Straight "T" key	10	0.008
<b>A 20748</b>	Toggle key	2	0.085



A 20746



A 20747



P 32753



P 32752



A 20748