

# ALCOSWITCH | LIMIT SWITCH

## TYPE TLS SERIES

### INTRODUCTION

ALCOSWITCH TLS Limit Switch Series is a new family of position switches from TE Connectivity. The TLS series offers high durability with over 1 million cycles, flexibility with many styles of actuators and lower costs with both zinc and thermoplastic housings. The TLS series limit switches meet IEC 60947-5-1 and are UL approved.



### FEATURES

- Thermoplastic or Zinc housings
- Number of different actuator styles
- >1M cycles of actuation
- Cable gland entry included
- NC contacts with positive break



### APPLICATIONS

- Automation Control
- Manufacturing Lines
- Safety Monitoring
- Lift Systems
- Door Opening/Closing



### APPROVALS

- IEC 60947-5-1
- \*UL in process



\*expected by Aug-2024

# Limit Switch

Type TLS Series

## ELECTRICAL DATA

Utilisation category AC-15, DC-13 Ie/Ue	
Screw terminals	4 A / 240 VAC, 1 A / 24 VDC
Thermal test current I <sub>the</sub>	
Screw terminals	10 A
Max. fuse rating	6 A gG D-fuse
Required short-circuit current	1,000 A
B10D NC contact to EN ISO 13849-1	20,000,000
Rated impulse withstand voltage U <sub>imp</sub>	
Screw terminals	6 kV
Rated insulation voltage U <sub>i</sub>	
Screw terminals	250 V
Switching Frequency	5000 /hr
Contact plating	Ag
Contact material	Cu Alloy

## MECHANICAL DATA

Body material	
TLST	Thermoplastic
TLSZ	Metal, Zinc die-cast
Actuating element	Refer drawings
Minimum mechanical life	20,000,000 operations
Actuating torque	9N- Plunger and Roller type 0.2N - Offset roller, Rod, Roller lever, Adjustable roller lever
Actuating speed	1 m/s
Positive break force	19 N - all NC contacts have positive break $\ominus$ .
Tightening force	
Fixing screws TLST	1.2 Nm
Fixing screws TLSZ	2 Nm
Cover screw TLSZ	0.7 Nm
Screws of the actuating head	0.45 Nm
Connection data	
Termination	Screw terminals M20x1.5
Cable section min-max	0.75 mm <sup>2</sup> ~ 2.5 mm <sup>2</sup>

# Limit Switch

Type TLS Series

## AMBIENT CONDITIONS

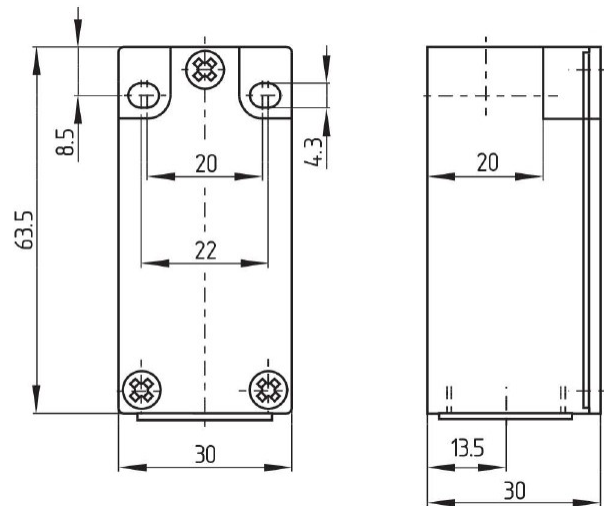
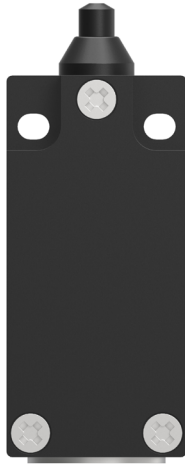
Protection class	IP65, IP67 to EN 60529
Protection class TLSZ or TLST	I or II
Degree of pollution	3
Ambient temperature	-30 °C ... +80 °C

## OTHER DATA

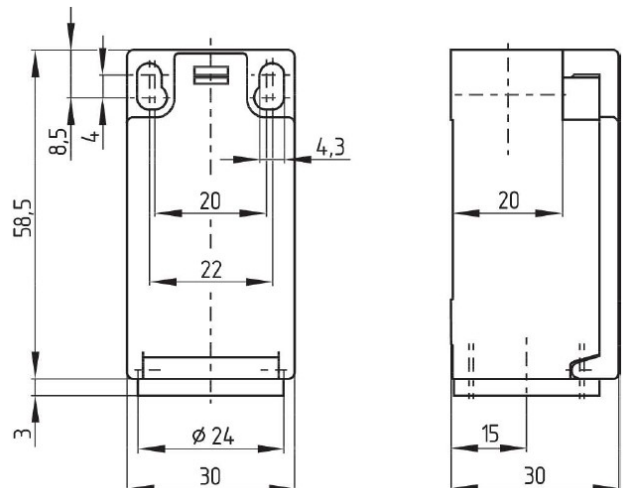
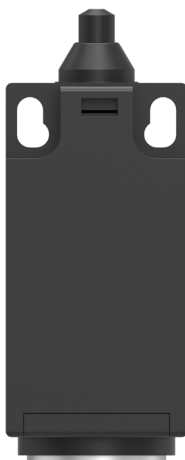
Standards	EN 60947-5-1
Design according to EN ISO 14119	1
Safety standard	EN ISO 13849-1

## DIMENSIONS (Unit: mm)

### TLSZ (Metal, Zinc die-cast)



### TLST (Thermoplastic)



# Limit Switch

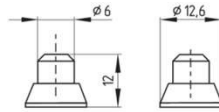
Type TLS Series

## ACTUATOR TLSZ

## DIMENSIONS (Unit: mm)

## SWITCH TRAVEL DIAGRAM

### Plunger

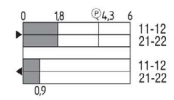


### Snap Action (N)

1 NO+1 NC



2 NC



### Slow Action (L)

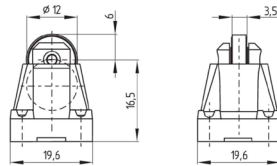
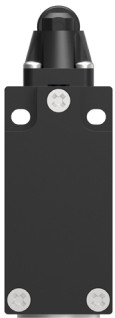
1 NO+1 NC



2 NC

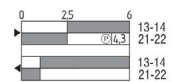


### Roller

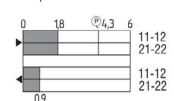


### Snap Action (N)

1 NO+1 NC

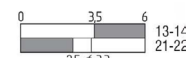


2 NC

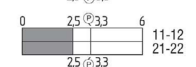


### Slow Action (L)

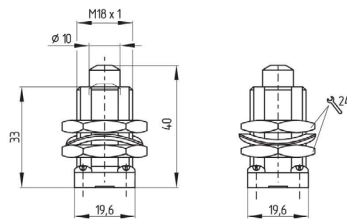
1 NO+1 NC



2 NC

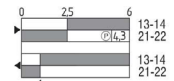


### Plunger (Central Mounting)

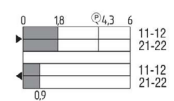


### Snap Action (N)

1 NO+1 NC

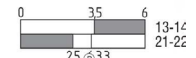


2 NC

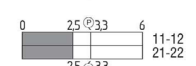


### Slow Action (L)

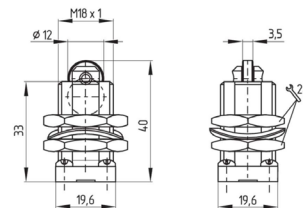
1 NO+1 NC



2 NC

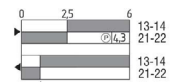


### Roller (Central Mounting)

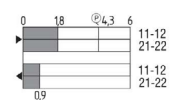


### Snap Action (N)

1 NO+1 NC

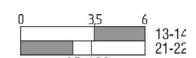


2 NC

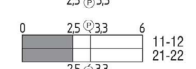


### Slow Action (L)

1 NO+1 NC



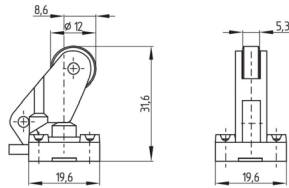
2 NC



# Limit Switch

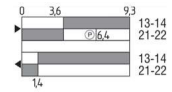
Type TLS Series

## Offset Roller (V2)

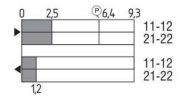


### Snap Action (N)

1 NO+1 NC

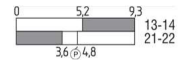


2 NC



### Slow Action (L)

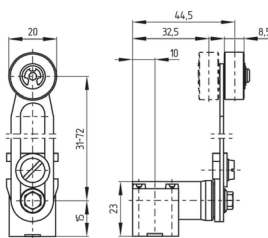
1 NO+1 NC



2 NC

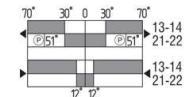


## Adjustable Roller Lever (V1)

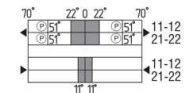


### Snap Action (N)

1 NO+1 NC

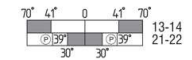


2 NC

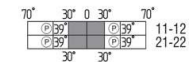


### Slow Action (L)

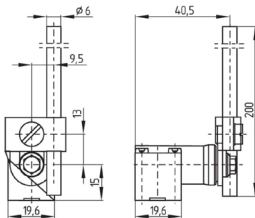
1 NO+1 NC



2 NC

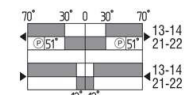


## Adjustable Rod

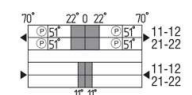


### Snap Action (N)

1 NO+1 NC

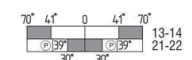


2 NC

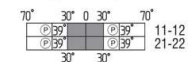


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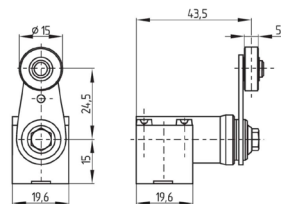
1 NO+1 NC



2 NC

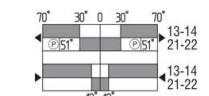


## Roller Lever (V2) <sup>1)</sup>

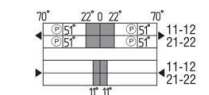


### Snap Action (N)

1 NO+1 NC

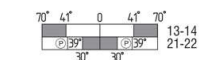


2 NC

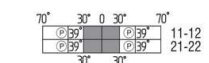


### Slow Action (L)

1 NO+1 NC



2 NC



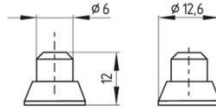
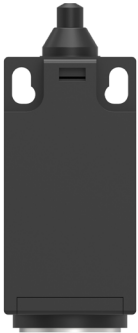
<sup>1)</sup> POM Material

# Limit Switch

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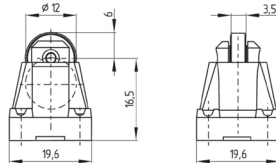
## ACTUATOR TLST

### Plunger <sup>1)</sup>

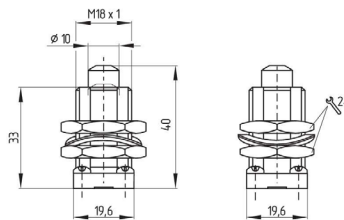


1) POM Material

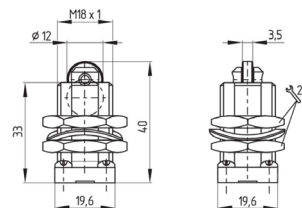
### Roller



### Plunger (Central Mounting)

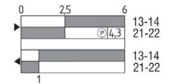


### Roller (Central Mounting)

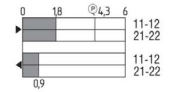


### Snap Action (N)

1 NO+1 NC

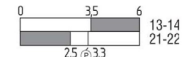


2 NC



### Slow Action (L)

1 NO+1 NC

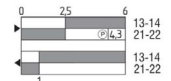


2 NC

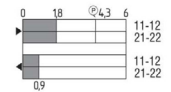


### Snap Action (N)

1 NO+1 NC

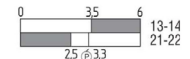


2 NC



### Slow Action (L)

1 NO+1 NC

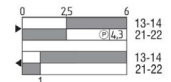


2 NC

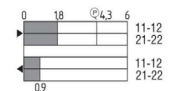


### Snap Action (N)

1 NO+1 NC

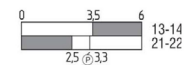


2 NC



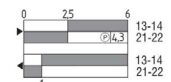
### Slow Action (L)

1 NO+1 NC

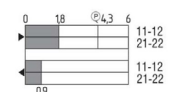


### Snap Action (N)

1 NO+1 NC

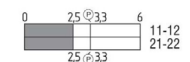


2 NC



### Slow Action (L)

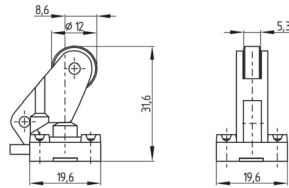
2 NC



# Limit Switch

Type TLS Series

## Offset Roller (V2)



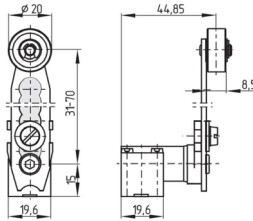
### Snap Action (N)

2 NC



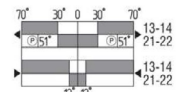
## Adjustable Roller Lever (V2)

Lever angle adjustable in 10° steps

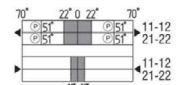


### Snap Action (N)

1 NO+1 NC

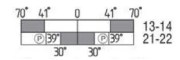


2 NC

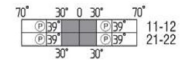


### Slow Action (L)

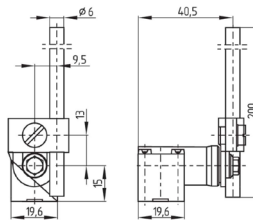
1 NO+1 NC



2 NC

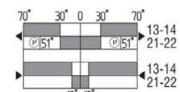


## Adjustable Rod

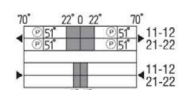


### Snap Action (N)

1 NO+1 NC

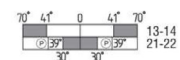


2 NC

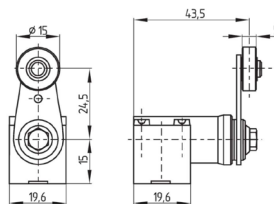


### Slow Action (L)

1 NO+1 NC

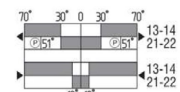


## Roller Lever (V2) 1)

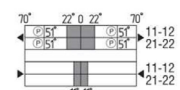


### Snap Action (N)

1 NO+1 NC



2 NC



### Slow Action (L)

1 NO+1 NC



1) POM Material

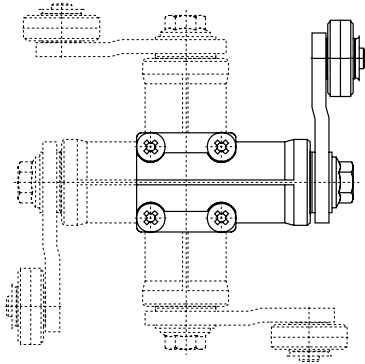
# Limit Switch

Type TLS Series

## MOUNTING

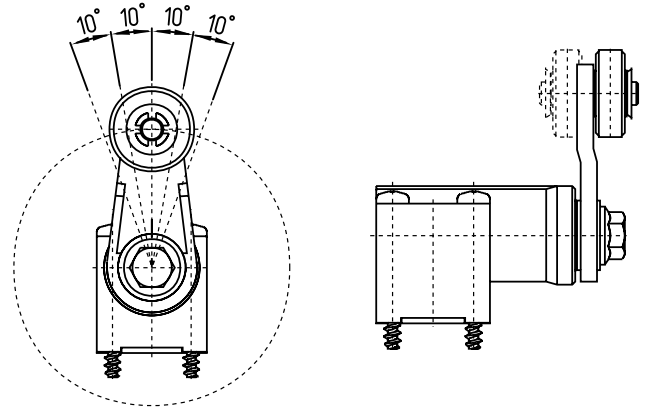
### Actuation Head

Adjustable in increments of 90°



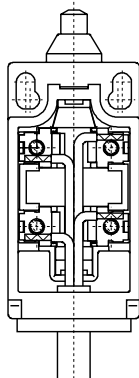
### Offset Roller Lever

Adjustable in increments of 10°

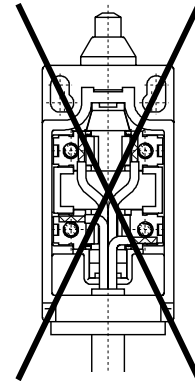


## CABLE CONNECTION

### Right



### Wrong

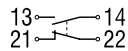


For NPT threads, conduit hub is to be connected to conduit before hub is connected to enclosure.

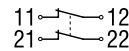
## CONTACT VARIANTS

For the cable entry, suitable cable glands with an appropriate degree of protection must be used.

All NC contacts have positive break ⊖



N/L TLSZ-11  
N/L TLST-11



N/L TLSZ-02  
N/L TLST-02



The electrical connection may only be carried out by authorised personnel in a de-energised condition.

### Settle length x of the conductor: 6 mm

Wire



Wire with ferrule

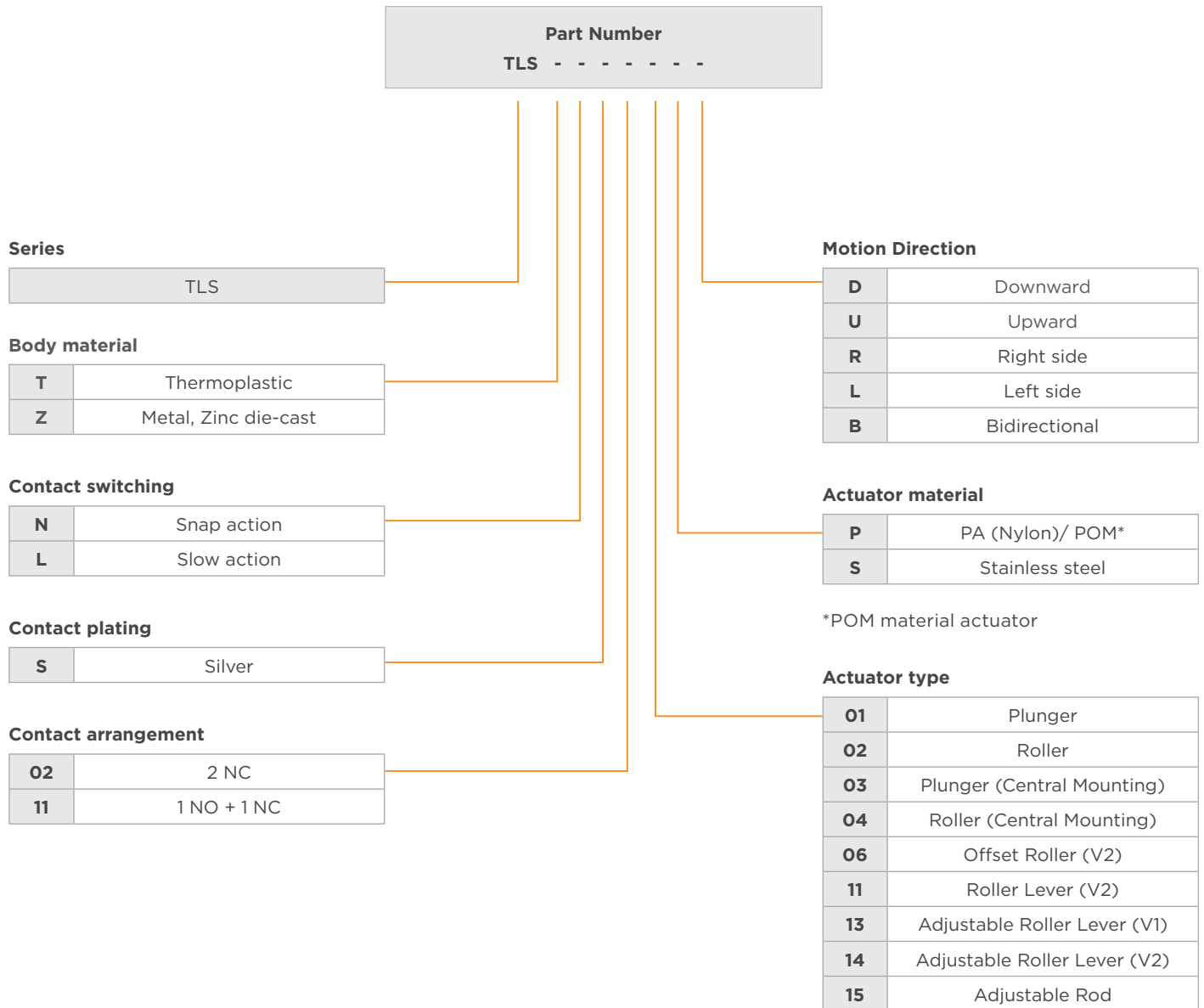




# Limit Switch

Type TLS Series

## PRODUCT CODE STRUCTURE



# Limit Switch

Type TLS Series

## PRODUCT INFORMATION: TLSZ

TE Smart Part Number	Version	Contacts	Part Number
TLSZLS0213PB	LS Z Slow adjacent roller lever 4A 2 NC	2 NC	<a href="#">2483581-1</a>
TLSZLS1113PB	LS Z Slow adjacent roller lever 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2483581-2</a>
TLSZLS0215PB	LS Z Slow adjacent od 4A 2NC	2 NC	<a href="#">2483581-3</a>
TLSZLS1115PB	LS Z Slow adjacent od 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2483581-4</a>
TLSZLS0211PB	LS Z Slow roller lever V2 4A 2NC	2 NC	<a href="#">2483581-5</a>
TLSZLS1111PB	LS Z Slow roller lever V2 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2483581-6</a>
TLSZLS0206PR	LS Z Slow offset roller V2 4A 2 NC	2 NC	<a href="#">2483581-7</a>
TLSZLS1106PR	LS Z Slow offset roller V2 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2483581-8</a>
TLSZLS0202PD	LS Z Slow roller 4A 2 NC	2 NC	<a href="#">2483581-9</a>
TLSZLS1102PD	LS Z Slow roller 4A 2 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483581-0</a>
TLSZLS0204PD	LS Z Slow roller central mount 4A 2 NC	2 NC	<a href="#">1-2483581-1</a>
TLSZLS1104PD	LS Z Slow roller central mount 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483581-2</a>
TLSZLS0201SD	LS Z Slow plunger 4A 2 NC	2 NC	<a href="#">1-2483581-3</a>
TLSZLS1101SD	LS Z Slow plunger 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483581-4</a>
TLSZLS0203SD	LS Z Slow plunger central mount 4A 2 NC	2 NC	<a href="#">1-2483581-5</a>
TLSZLS1103SD	LS Z Slow plunger central mount 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483581-6</a>
TLSZNS0213PB	LS Z Snap adjacent roller lever 4A 2 NC	2 NC	<a href="#">1-2483581-7</a>
TLSZNS1113PB	LS Z Snap adjacent roller lever 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483581-8</a>
TLSZNS0215PB	LS Z Snap adjacent rod 4A 2NC	2 NC	<a href="#">1-2483581-9</a>
TLSZNS1115PB	LS Z Snap adjacent rod 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2-2483581-0</a>
TLSZNS0211PB	LS Z Snap roller lever V2 4A 2NC	2 NC	<a href="#">2-2483581-1</a>
TLSZNS1111PB	LS Z Snap roller lever V2 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2-2483581-2</a>
TLSZNS1106PR	LS Z Snap offset roller V2 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2-2483581-3</a>
TLSZNS0202PD	LS Z Snap roller 4A 2 NC	2 NC	<a href="#">2-2483581-4</a>
TLSZNS1102PD	LS Z Snap roller 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2-2483581-5</a>
TLSZNS0204PD	LS Z Snap roller central mount 4A 2 NC	2 NC	<a href="#">2-2483581-6</a>
TLSZNS1104PD	LS Z Snap roller central mount 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2-2483581-7</a>
TLSZNS0201SD	LS Z Snap plunger 4A 2 NC	2 NC	<a href="#">2-2483581-8</a>
TLSZNS1101SD	LS Z Snap plunger 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2-2483581-9</a>
TLSZNS0203SD	LS Z Snap plunger central mount 4A 2 NC	2 NC	<a href="#">3-2483581-0</a>
TLSZNS1103SD	LS Z Snap plunger central mount 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">3-2483581-1</a>

## PRODUCT INFORMATION: TLST

TE Smart Part Number	Version	Contacts	Part Number
TLSTLS0214PB	LS T Slow STP adjacent roller lever 4A 2 NC	2 NC	<a href="#">2483582-1</a>
TLSTLS1114PB	LS T Slow STP adjacent roller lever 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2483582-2</a>
TLSTLS1115PB	LS T Slow adjacent od 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2483582-3</a>
TLSTLS1111PB	LS T Slow roller lever V2 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">2483582-4</a>
TLSTLS0202PD	LS T Slow roller 4A 2NC	2 NC	<a href="#">2483582-5</a>
TLSTLS1102PD	LS T Slow roller 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2483582-6</a>
TLSTLS0204PD	LS T Slow roller central mount 4A 2 NC	2 NC	<a href="#">2483582-7</a>
TLSTLS0201PD	LS T Slow plunger 4A 2 NC	2 NC	<a href="#">2483582-8</a>
TLSTLS1101PD	LS T Slow plunger 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2483582-9</a>
TLSTLS1103SD	LS T Slow plunger CENTRAL M 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483582-0</a>
TLSTNS0214PB	LS T Snap STP adjacent roller lever 4A 2 NC	2 NC	<a href="#">1-2483582-1</a>
TLSTNS1114PB	LS T Snap STP adjacent roller lever 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483582-2</a>
TLSTNS0215PB	LS T Snap adjacent rod 4A 2 NC	2 NC	<a href="#">1-2483582-3</a>
TLSTNS1115PB	LS T Snap adjacent rod 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">1-2483582-4</a>
TLSTNS0211PB	LS T Snap roller lever V2 4A 2 NC	2 NC	<a href="#">1-2483582-5</a>
TLSTNS1111PB	LS T Snap roller lever V2 4A 1 NO + 1 NC	1 NO + 1 NC	<a href="#">1-2483582-6</a>
TLSTNS1106PR	LS T Snap offset roller V2 4A 2 NC	2 NC	<a href="#">1-2483582-7</a>
TLSTNS0202PD	LS T Snap roller 4A 2NC	2 NC	<a href="#">1-2483582-8</a>
TLSTNS1102PD	LS T Snap roller 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">1-2483582-9</a>
TLSTNS0204PD	LS T Snap roller central mount 4A 2 NC	2 NC	<a href="#">2-2483582-0</a>
TLSTNS1104PD	LS T Snap roller central mount 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2-2483582-1</a>
TLSTNS0201PD	LS T Snap plunger 4A 2 NC	2 NC	<a href="#">2-2483582-2</a>
TLSTNS1101PD	LS T Snap plunger 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2-2483582-3</a>
TLSTNS0203SD	LS T Snap plunger central mount 4A 2NC	2 NC	<a href="#">2-2483582-4</a>
TLSTNS1103SD	LS T Snap plunger central mount 4A 1NO + 1NC	1 NO + 1 NC	<a href="#">2-2483582-5</a>

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