

ALCOSWITCH LIMIT SWITCH

TLS SERIES

INTRODUCTION

ALCOSWITCH TLS limit switch series is a new family of position switches from TE Connectivity (TE). 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

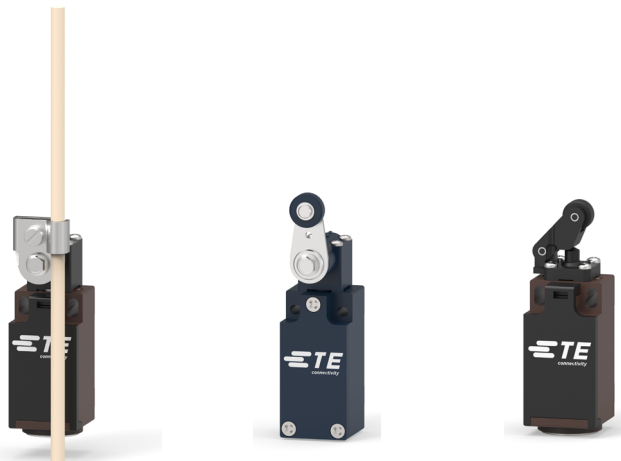
- Thermoplastic or Zinc housings
- Number of different actuator styles
- 1,000,000 cycles of actuation
- Cable gland entry included
- NC contacts with positive break

APPLICATIONS

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

APPROVALS

- ROHS directive 2002/95/E compliant
- REACH compliant and Pb free
- IEC 60947-5-1
- UL E303778



ALCOSWITCH LIMIT SWITCH

TLS Series

ELECTRICAL DATA

Utilisation category AC-15, DC-13 I_e/U_e	
Screw terminals	4 A / 240 VAC, 1 A / 24 VDC
Thermal test current I_{the}	
Screw terminals	10 A
Maximum 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_{imp}	
Screw terminals	6 kV
Rated insulation voltage U_i	
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	9 N- Plunger and Roller type 0.2 N - Offset roller, Rod, Roller lever, Adjustable roller lever
Actuating speed	1 m/s
Positive break force	19 N - all NC contacts have positive break $\ominus$. TLSZ : (Adjustable Rod and Adjustable Roller Lever V1 do not have positive break) TLST : (Adjustable Rod do not have positive break)
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 minimum - maximum	0.75 mm ² - 2.5 mm ²

ALCOSWITCH LIMIT SWITCH

TLS Series

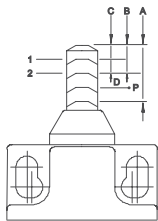
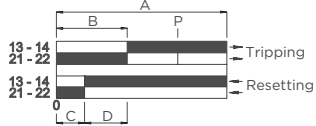
AMBIENT CONDITIONS

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

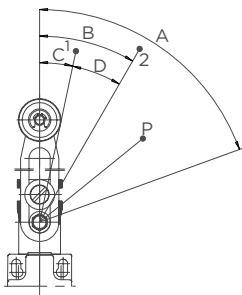
Standards	EN 60947-5-1
Design Standard- Mounting details	EN 50047
Design according to EN ISO 14119	1
Safety standard	EN ISO 13849-1

SNAP ACTION



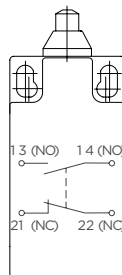
A - Maximum travel of operator in millimetres or degrees.
B - Tripping travel of contact.
C - Resetting travel of contact.
D - Differential travel = B - C.
P - Point from which positive opening is assured.

1 - Resetting point of contact.
2 - Tripping point of contact.
A - Maximum travel of operator in millimetres.
B - Tripping travel of contact.
C - Resetting travel of contact.
D - Differential travel = B - C.
P - Point from which positive opening is assured.

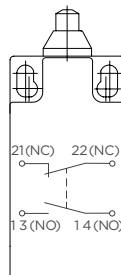


Rotary movement (lever)
1 - Resetting point of contact.
2 - Tripping point of contact.
A - Maximum travel of operator in degrees.
B - Tripping travel of contact.
C - Resetting travel of contact.
D - Differential travel = B - C.
P - Point from which positive opening is assured.

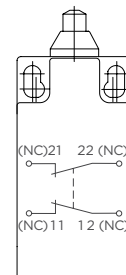
TLSZN/TLSTN-11



TLSZL/TLSTL-11



TLSZL/TLSTL-02
TLSZN/TLSTL-02



Note:

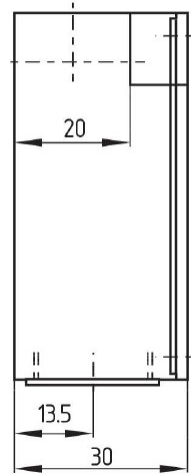
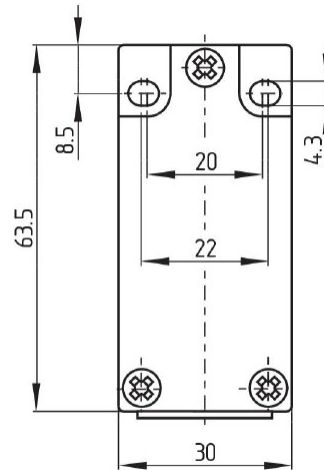
All dimensions in bar chart except angular motions are in mm

ALCOSWITCH LIMIT SWITCH

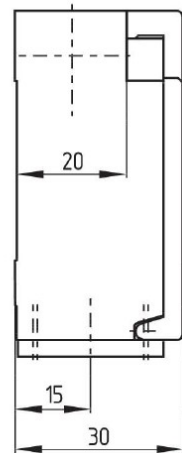
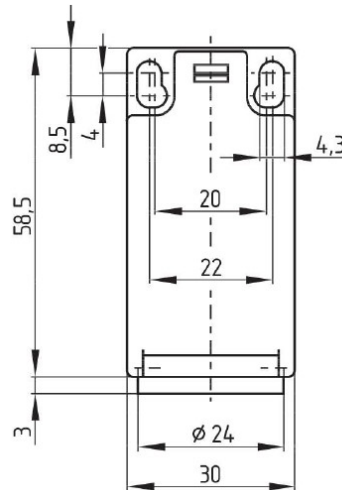
TLS Series

DIMENSIONS (Unit: mm)

TLSZ (Metal, Zinc die-cast)



TLST (Thermoplastic)



ALCOSWITCH LIMIT SWITCH

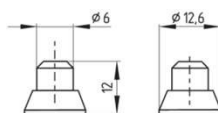
TLS Series

ACTUATOR TLSZ

DIMENSIONS (Unit: mm)

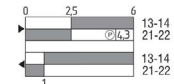
SWITCH TRAVEL DIAGRAM

Plunger

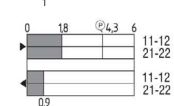


Snap Action (N)

1 NO+1 NC

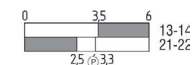


2 NC



Slow Action (L)

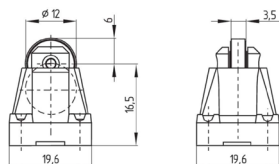
1 NO+1 NC



2 NC

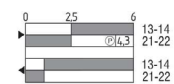


Roller

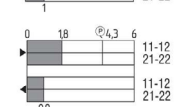


Snap Action (N)

1 NO+1 NC



2 NC

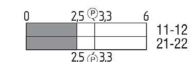


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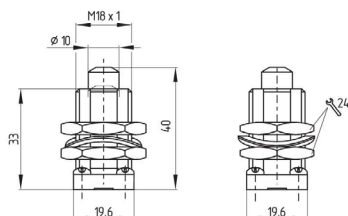
1 NO+1 NC



2 NC



Plunger (Central Mounting)

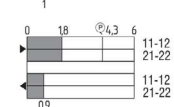


Snap Action (N)

1 NO+1 NC

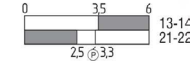


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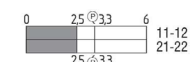


Slow Action (L)

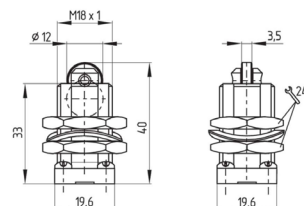
1 NO+1 NC



2 NC

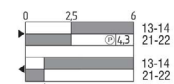


Roller (Central Mounting)

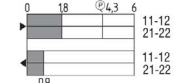


Snap Action (N)

1 NO+1 NC

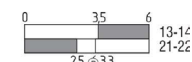


2 NC

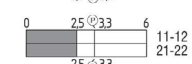


Slow Action (L)

1 NO+1 NC



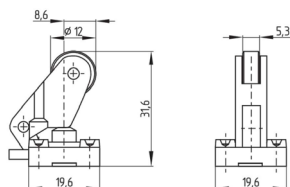
2 NC



ALCOSWITCH LIMIT SWITCH

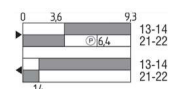
TLS Series

Offset Roller (V2)

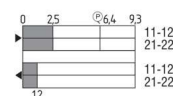


Snap Action (N)

1 NO+1 NC

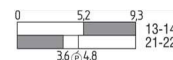


2 NC



Slow Action (L)

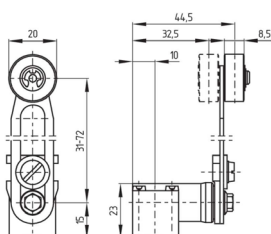
1 NO+1 NC



2 NC

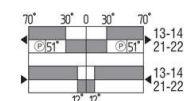


Adjustable Roller Lever (V1)

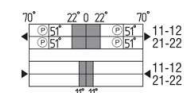


Snap Action (N)

1 NO+1 NC



2 NC

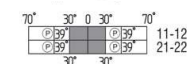


Slow Action (L)

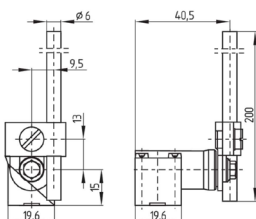
1 NO+1 NC



2 NC

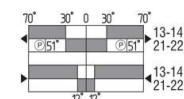


Adjustable Rod

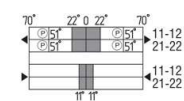


Snap Action (N)

1 NO+1 NC

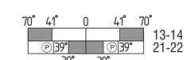


2 NC

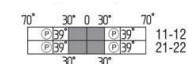


Slow Action (L)

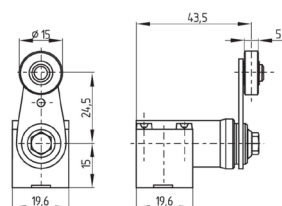
1 NO+1 NC



2 NC

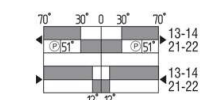


Roller Lever (V2) ¹⁾

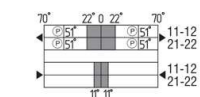


Snap Action (N)

1 NO+1 NC

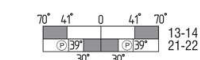


2 NC

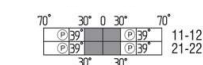


Slow Action (L)

1 NO+1 NC



2 NC



¹⁾ POM Material

ALCOSWITCH LIMIT SWITCH

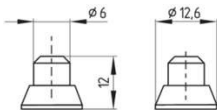
TLS Series

ACTUATOR TLST

Plunger 1)

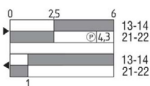


1) POM Material

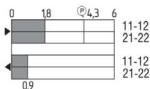


Snap Action (N)

1 NO+1 NC



2 NC

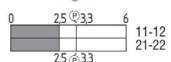


Slow Action (L)

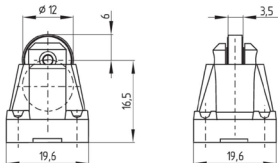
1 NO+1 NC



2 NC

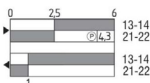


Roller

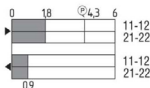


Snap Action (N)

1 NO+1 NC

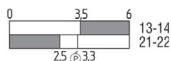


2 NC



Slow Action (L)

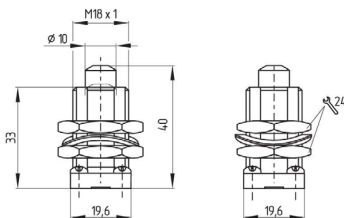
1 NO+1 NC



2 NC

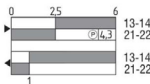


Plunger (Central Mounting)

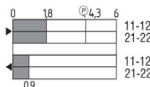


Snap Action (N)

1 NO+1 NC

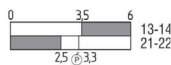


2 NC

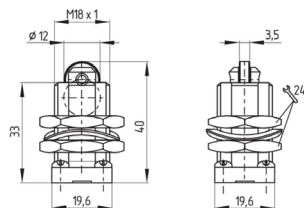


Slow Action (L)

1 NO+1 NC

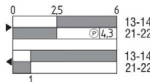


Roller (Central Mounting)

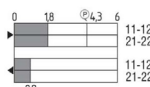


Snap Action (N)

1 NO+1 NC



2 NC



Slow Action (L)

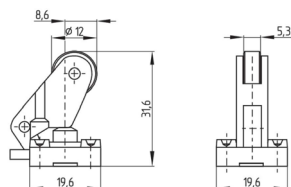
2 NC



ALCOSWITCH LIMIT SWITCH

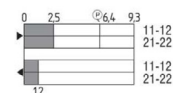
TLS Series

Offset Roller (V2)



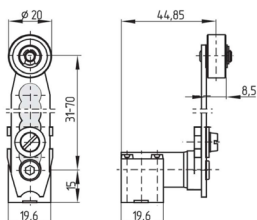
Snap Action (N)

2 NC



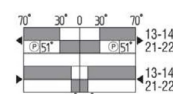
Adjustable Roller Lever (V2)

Lever angle adjustable in 10° steps

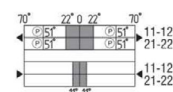


Snap Action (N)

1 NO+1 NC

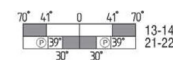


2 NC

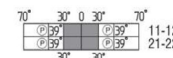


Slow Action (L)

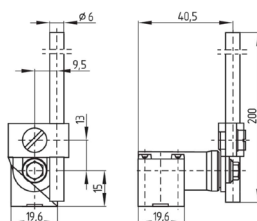
1 NO+1 NC



2 NC

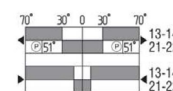


Adjustable Rod

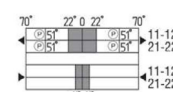


Snap Action (N)

1 NO+1 NC

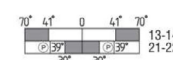


2 NC

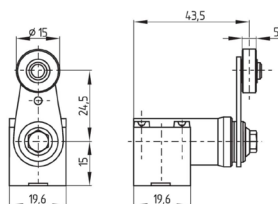


Slow Action (L)

1 NO+1 NC

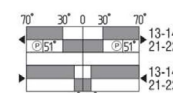


Roller Lever (V2) ¹⁾

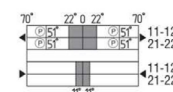


Snap Action (N)

1 NO+1 NC

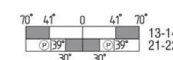


2 NC



Slow Action (L)

1 NO+1 NC



¹⁾ POM Material

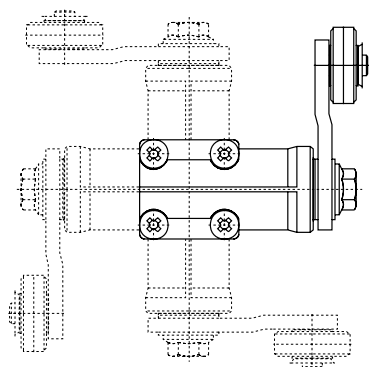
ALCOSWITCH LIMIT SWITCH

TLS Series

MOUNTING

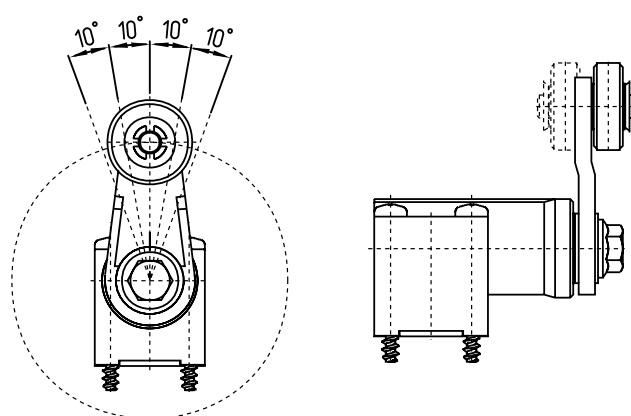
Actuation Head

Adjustable in increments of 90°



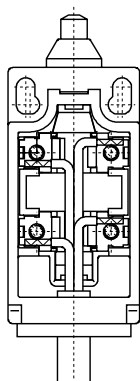
Offset Roller Lever

Adjustable in increments of 10°

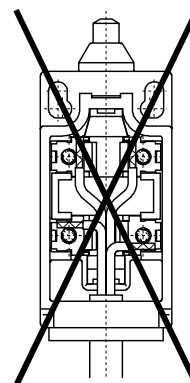


CABLE CONNECTION

Right



Wrong

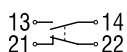


For NPT threads, conduit hub is to be connected to conduit before hub is connected to enclosure.

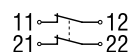
CONTACT VARIANTS

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

All NC contacts have positive break $\ominus$



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



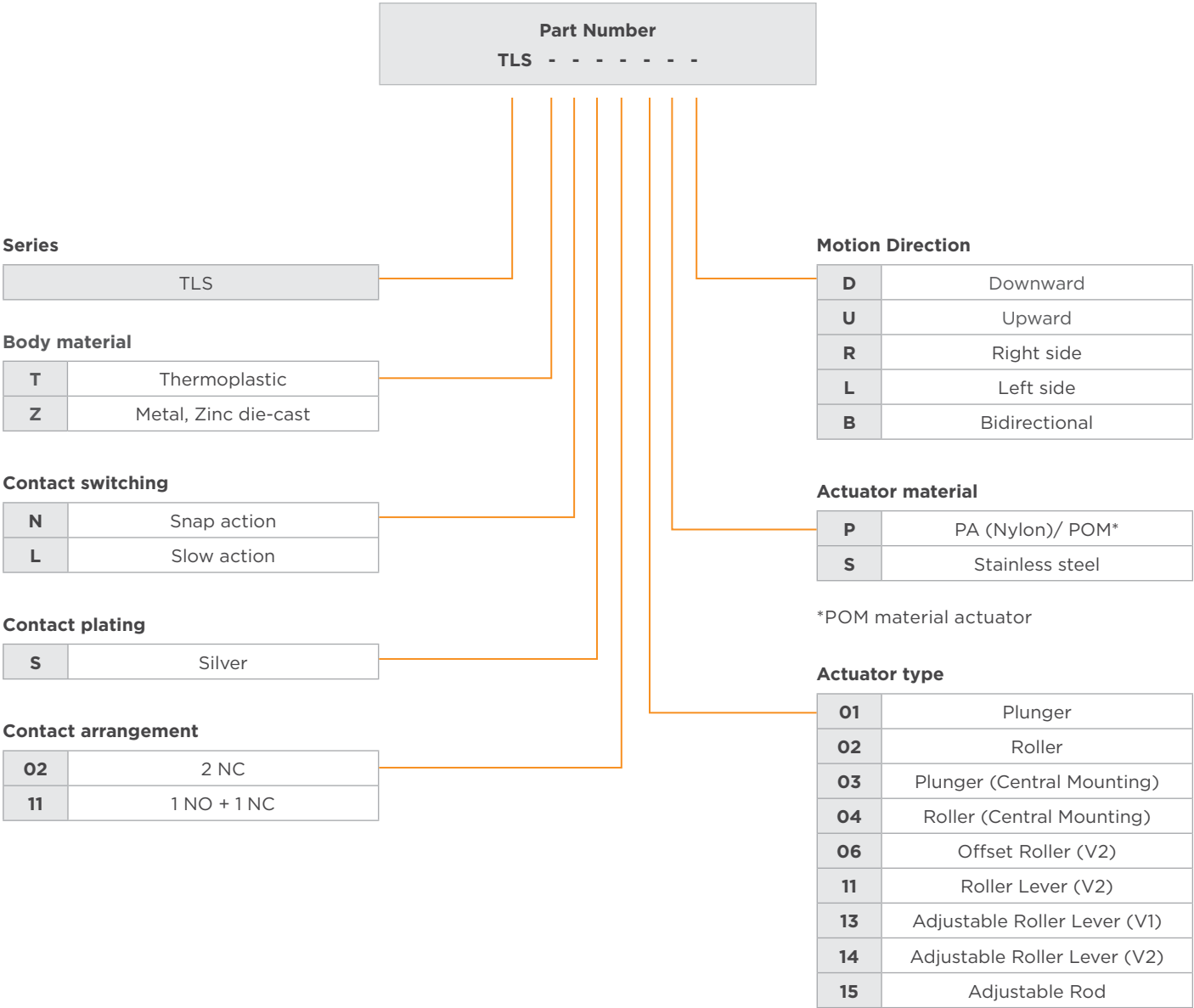
Wire with ferrule



ALCOSWITCH LIMIT SWITCH

TLS Series

PRODUCT CODE STRUCTURE



ALCOSWITCH LIMIT SWITCH

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

PRODUCT INFORMATION: TLST

TE Smart Part Number	Version	Contacts	Part Number
TLSTLS0214PB	LS T Slow STP adjacent roller lever 4A 2 NC	2 NC	2483582-1
TLSTLS1114PB	LS T Slow STP adjacent roller lever 4A 1NO + 1NC	1 NO + 1 NC	2483582-2
TLSTLS1115PB	LS T Slow adjacent od 4A 1 NO + 1 NC	1 NO + 1 NC	2483582-3
TLSTLS1111PB	LS T Slow roller lever V2 4A 1 NO + 1 NC	1 NO + 1 NC	2483582-4
TLSTLS0202PD	LS T Slow roller 4A 2NC	2 NC	2483582-5
TLSTLS1102PD	LS T Slow roller 4A 1NO + 1NC	1 NO + 1 NC	2483582-6
TLSTLS0204PD	LS T Slow roller central mount 4A 2 NC	2 NC	2483582-7
TLSTLS0201PD	LS T Slow plunger 4A 2 NC	2 NC	2483582-8
TLSTLS1101PD	LS T Slow plunger 4A 1NO + 1NC	1 NO + 1 NC	2483582-9
TLSTLS1103SD	LS T Slow plunger CENTRAL M 4A 1NO + 1NC	1 NO + 1 NC	1-2483582-0
TLSTNS0214PB	LS T Snap STP adjacent roller lever 4A 2 NC	2 NC	1-2483582-1
TLSTNS1114PB	LS T Snap STP adjacent roller lever 4A 1NO + 1NC	1 NO + 1 NC	1-2483582-2
TLSTNS0215PB	LS T Snap adjacent rod 4A 2 NC	2 NC	1-2483582-3
TLSTNS1115PB	LS T Snap adjacent rod 4A 1 NO + 1 NC	1 NO + 1 NC	1-2483582-4
TLSTNS0211PB	LS T Snap roller lever V2 4A 2 NC	2 NC	1-2483582-5
TLSTNS1111PB	LS T Snap roller lever V2 4A 1 NO + 1 NC	1 NO + 1 NC	1-2483582-6
TLSTNS0206PR	LS T Snap offset roller V2 4A 2 NC	2 NC	1-2483582-7
TLSTNS0202PD	LS T Snap roller 4A 2NC	2 NC	1-2483582-8
TLSTNS1102PD	LS T Snap roller 4A 1NO + 1NC	1 NO + 1 NC	1-2483582-9
TLSTNS0204PD	LS T Snap roller central mount 4A 2 NC	2 NC	2-2483582-0
TLSTNS1104PD	LS T Snap roller central mount 4A 1NO + 1NC	1 NO + 1 NC	2-2483582-1
TLSTNS0201PD	LS T Snap plunger 4A 2 NC	2 NC	2-2483582-2
TLSTNS1101PD	LS T Snap plunger 4A 1NO + 1NC	1 NO + 1 NC	2-2483582-3
TLSTNS0203SD	LS T Snap plunger central mount 4A 2NC	2 NC	2-2483582-4
TLSTNS1103SD	LS T Snap plunger central mount 4A 1NO + 1NC	1 NO + 1 NC	2-2483582-5

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