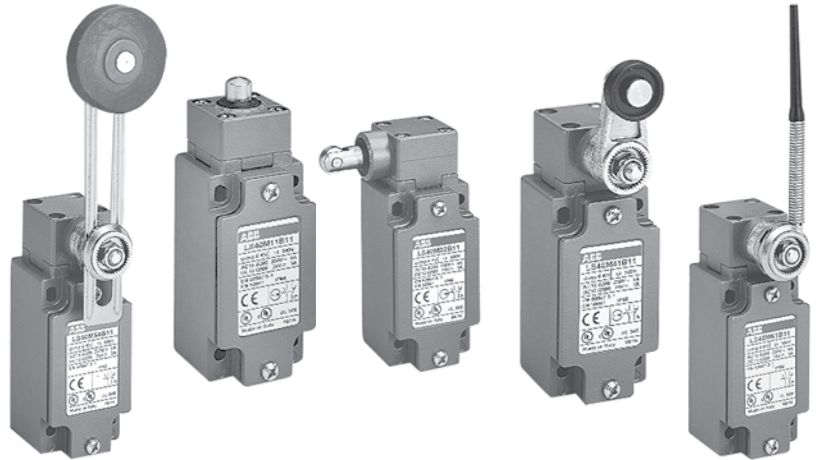


Metal Limit switches

ABB

Limit Switches

Metal casing, 40mm & 60mm
Assembled
Components



Description

Limit switches are made of aluminum alloy and have a degree of protection of IP 66 and UL type 4X.

The casings come in 2 dimensions:

- LS45M, 40mm width.
- LS65M, 60mm width.

UL Listed #E191693

Applications

Easy to use, electromechanical limit switches offer specific qualities:

- Visible operation.
- Able to switch strong currents (10 A conventional thermal current).
- Electrically separated contacts.
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

Limit switches used for these mechanical applications:

- Presence/absence.
- Positioning and travel limit.
- Objects passing/counting.

Selection guide

40mm & 60mm, IP 66, UL Type 4X

40mm width — LS45M



LS45M11

LS45M13

LS45M21

LS45M22

LS45M31

CENELEC conformity

EN 50 041

EN 50 041

EN 50 041

EN 50 041

—

Actuating device and actuation type

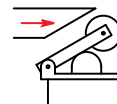
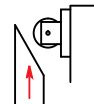
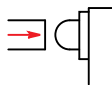
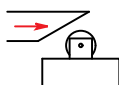
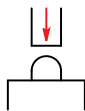
Plain plunger

Roller plunger

Plain plunger

Roller plunger

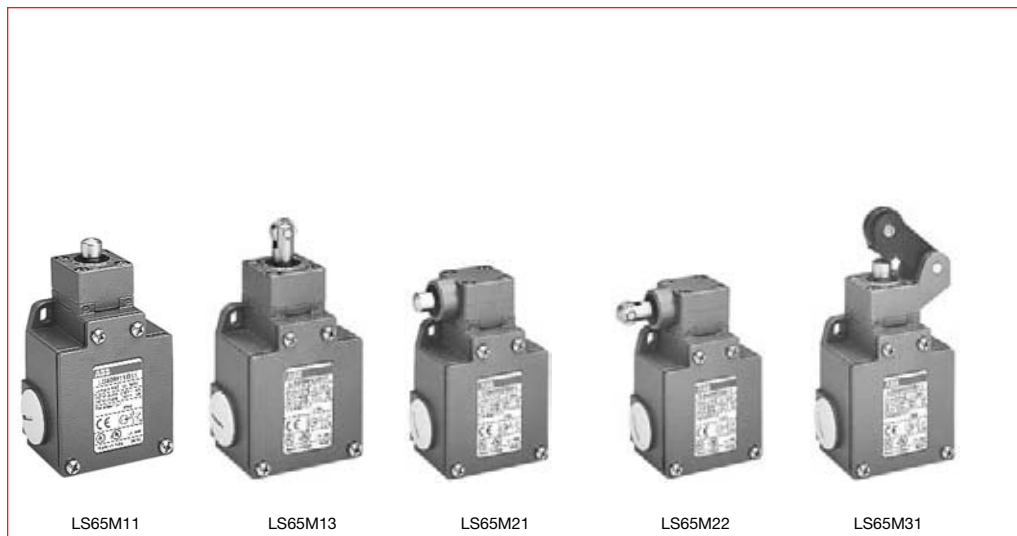
Roller lever



Positive contact opening



60mm width — LS65M



LS65M11

LS65M13

LS65M21

LS65M22

LS65M31

Actuating device and actuation type

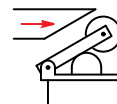
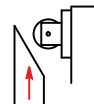
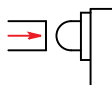
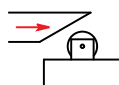
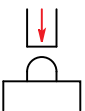
Plain plunger

Roller plunger

Plain plunger

Roller plunger

Roller lever



Positive contact opening



Selection guide

40mm & 60mm, IP 66, UL Type 4X

Metal
Limit switches



LS45M41

LS45M51

LS45M54

LS45M61

LS45M72

LS45M91

EN 50 041

Roller lever

-

Adjustable roller levers

-

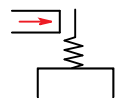
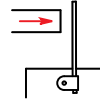
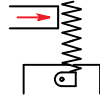
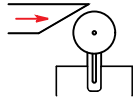
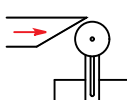
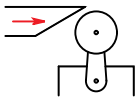
-

Adjustable flexible and rigid rod levers

EN 50 041

-

Flexible rod



LS65M41

LS65M51

LS65M54

LS65M61

LS65M72

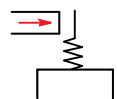
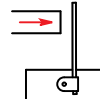
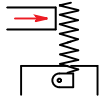
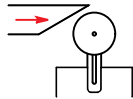
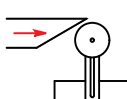
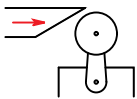
LS65M91

Roller lever

Adjustable roller levers

Adjustable flexible and rigid rod levers

Flexible rod



General information

40mm & 60mm, IP66, UL Type 4X

Applications

Easy to use, electromechanical limit switches offer specific qualities:

- Visible operation.
- Able to switch strong currents (10 A conventional thermal current).
- Electrically separated contacts.
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

Limit switches used for these mechanical applications:

- Presence/absence.
- Positioning and travel limit.
- Objects passing/counting.

Description

Limit switches, which are made of aluminum alloy, have a degree of protection of IP 66 and UL Type 4X.

The casings come in 2 dimensions:

- 40mm width
– LS40M
– LS45M
- 60mm width
– LS65M

9

Casing

- 40mm width with standardized dimensions according to EN 50041
- 60mm width

Mounting the casing

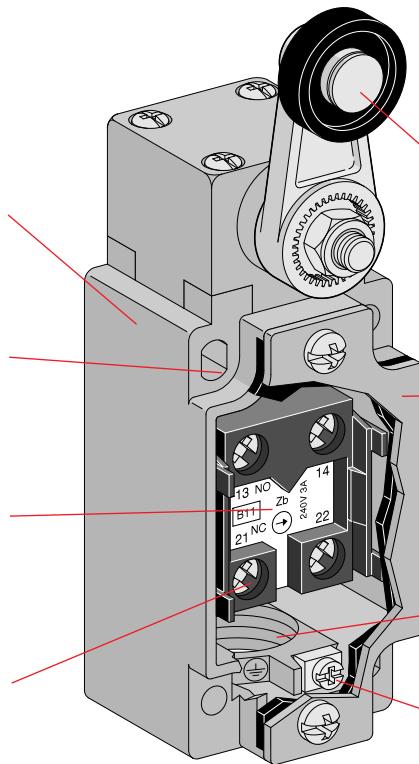
- 2 or 4 x M5 screws for 40mm width
- 2 x M5 screws for 60mm width

Block of 2 contacts

- Contact configuration: N.O. + N.C., 2 N.O., 2 N.C.
- Positive opening operation
- Snap action or slow action
- Zb shape: the 2 contacts are electrically separated

Connecting terminals

- M3.5 (+,-) pozidriv 2 screw
- Screw heads with captive cable clamp
- Markings conform with IEC 947-1, IEC 947-5-1, EN 50005 and 50013 standards



A variety of operating heads

- Plain plunger
 - Roller plunger
 - Roller lever, adjustable or not, etc.
- Assembled using 4 x M4 screws for 40 & 60mm widths

Cover

- Closed using 2 x M4 screws for 40mm width
 - Closed using 4 x M4 screws for 60mm width
- One piece sealing gasket to ensure tightness

Electrical connection

- 1 x pg 13.5 cable gland for 40mm width – LS40M
- 1 x 1/2" NPT cable gland – LS45M
- 3 x pg 13.5 cable glands for 60mm width – LS60M
- 3 x 1/2" NPT cable glands for 60mm width – LS65M

Terminal for protective conductor placed near the cable inlet and marked Ⓧ

- M3.5 (+,-) pozidriv 2 screw
- Screw head with captive cable clamp

Catalog number explanation

LS 45 M 41 B 11

Limit switch

Casing width

- 40 = 40mm width+1 cable inlet for Pg13.5 cable gland
- 45 = 40mm width+1/2" NPT cable gland
- 60 = 60mm width+3 cable inlets for Pg13.5 cable glands
- 65 = 60mm width+3 1/2" NPT cable glands

Metal casing

Operating heads: codes 11 – 93

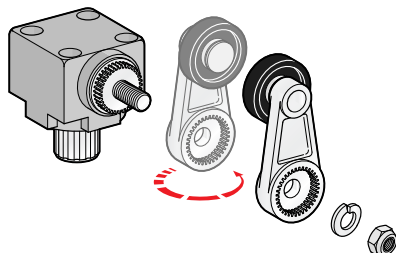
Contact block

- 11: 1 N.O. contact + 1 N.C. contact
- 20: 2 N.O. contacts
- 02: 2 N.C. contacts

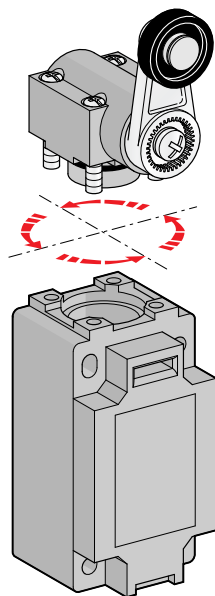
- B: Zb Snap action
- L: Zb Slow action (contact dependent)
- D: Zb Slow action non—overlapping late make
- C: Zb Slow action overlapping early make

General information
Implementation
 40mm & 60mm, IP66, UL Type 4X,

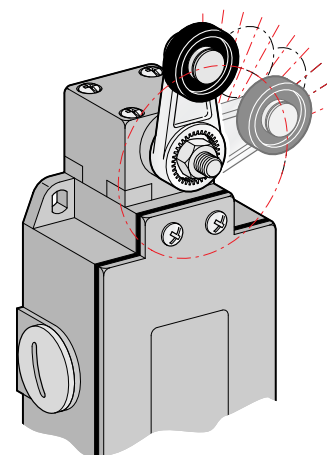
Metal
Limit switches



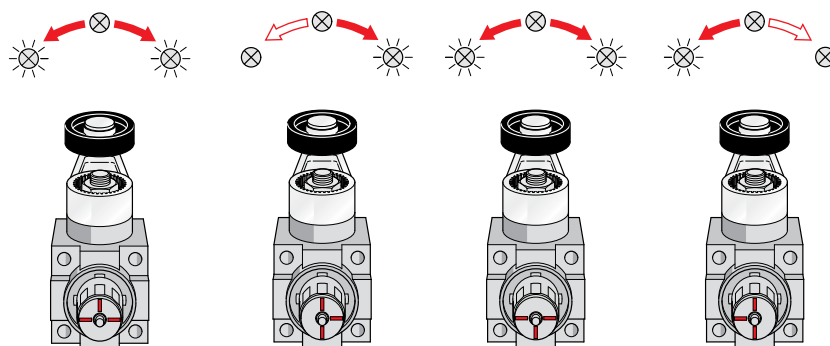
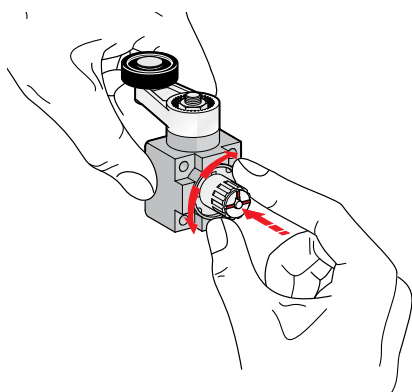
Lever round turning
 LS40M, LS45M, LS60M & LS65M



Head orientation



Free position adjustment 9 in 9° of lever

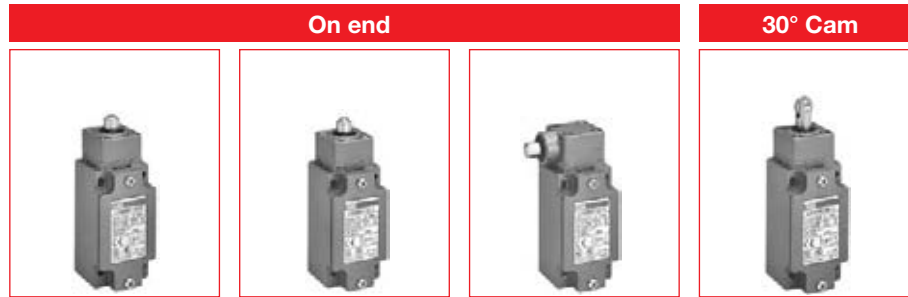


Operating mode selection

9

Assembled 40mm, IP66, UL Type 4X

Movement to be detected



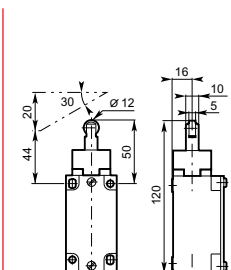
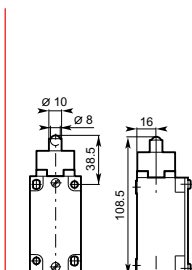
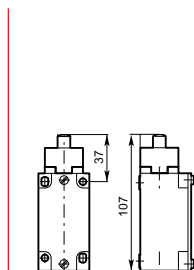
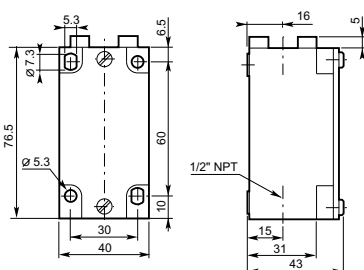
Operating head type

	Stainless steel plain plunger	Stainless steel ball plunger	Stainless steel lateral plain plunger	Stainless steel roller plunger
Conformity / (N.C. contact with positive opening operation)	EN 50 041	EN 50 041	EN 50 041	EN 50 041
Maximum actuation speed	m/s 0.5	0.5	0.5	0.5
Min. force:				
- actuation	N 22	22	30	16
- positive opening operation	N 66	66	70	48

9

		LS45M11B11 \$ 38	LS45M12B11 \$ 41	LS45M21B11 \$ 41	LS45M13B11 \$ 44
Snap action contacts	Catalog number List price	LS45M11B11 \$ 38	LS45M12B11 \$ 41	LS45M21B11 \$ 41	LS45M13B11 \$ 44
	Operation diagram				
Non-overlapping Slow action contacts	Catalog number List price	LS45M11D11 41	LS45M12D11 44	LS45M21D11 44	LS45M13D11 48
	Operation diagram				
Overlapping Slow action contacts	Catalog number List price	LS45M11C11 42	LS45M12C11 45	LS45M21C11 45	LS45M13C11 49
	Operation diagram				
Slow action contacts	Catalog number List price	LS45M11L02 42	LS45M12L02 45	LS45M21L02 45	LS45M13L02 49
	Operation diagram				
Slow action contacts	Catalog number List price	LS45M11L20 42	LS45M12L20 45	LS45M21L20 45	LS45M13L20 49
	Operation diagram				
Snap action contacts	Catalog number List price	LS45M11B02 42	LS45M12B02 45	LS45M21B02 45	LS45M13B02 49
	Operation diagram				
Weight (packing per unit)	kg	0.240	0.240	0.260	0.240

Dimensions (mm)

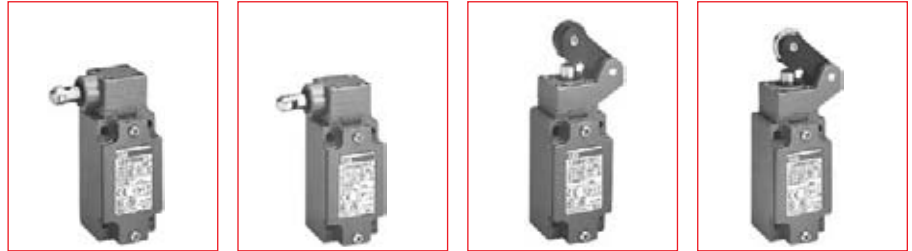


Assembled 40mm, IP66, UL Type 4X

Metal
Limit switches

Movement to be detected

30° Cam translation movement



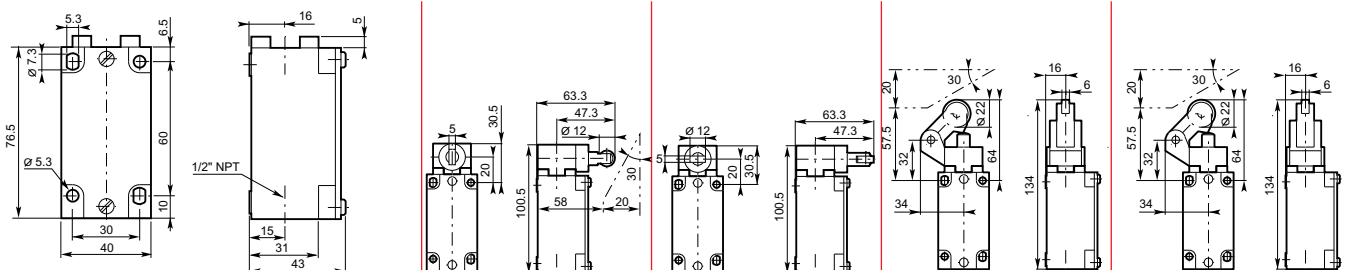
Operating head type

	Lateral plunger with vertical roller	Lateral plunger with horizontal roller	ø 22 Polyamide roller lever	ø 22 Stainless steel roller lever
Conformity / (N.C. contact with positive opening operation)	EN 50 041	EN 50 041		
Maximum actuation speed m/s	0.5	0.5	1.5	1.5
Min. force: - actuation	30	30	12	12
- positive opening operation	70	70	40	40

9

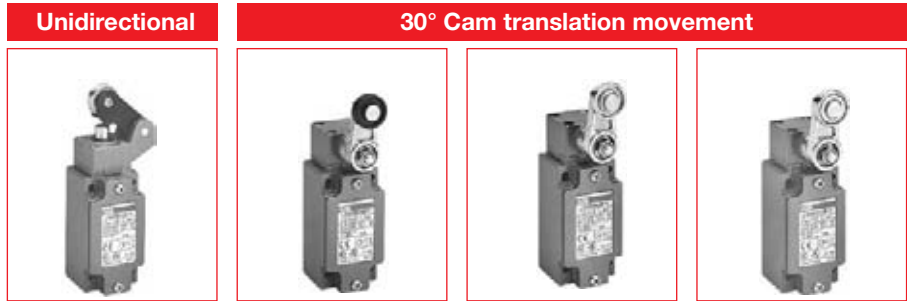
Snap action contacts	Catalog number List price	LS45M22B11 \$ 45	LS45M23B11 \$ 45	LS45M31B11 \$ 43	LS45M32B11 \$ 50
	Operation diagram				
Non-overlapping Slow action contacts	Catalog number List price	LS45M22D11 48	LS45M23D11 48	LS45M31D11 46	LS45M32D11 53
	Operation diagram				
Overlapping Slow action contacts	Catalog number List price	LS45M22C11 50	LS45M23C11 50	LS45M31C11 47	LS45M32C11 55
	Operation diagram				
Slow action contacts	Catalog number List price	LS45M22L02 50	LS45M23L02 50	LS45M31L02 47	LS45M32L02 55
	Operation diagram				
Slow action contacts	Catalog number List price	LS45M22L20 50	LS45M23L20 50	LS45M31L20 47	LS45M32L20 55
	Operation diagram				
Snap action contacts	Catalog number List price	LS45M22B02 50	LS45M23B02 50	LS45M31B02 47	LS45M32B02 55
	Operation diagram				
Weight (packing per unit)	kg	0.265	0.265	0.275	0.280

Dimensions (mm)



Assembled 40mm, IP66, UL Type 4X

Movement to be detected



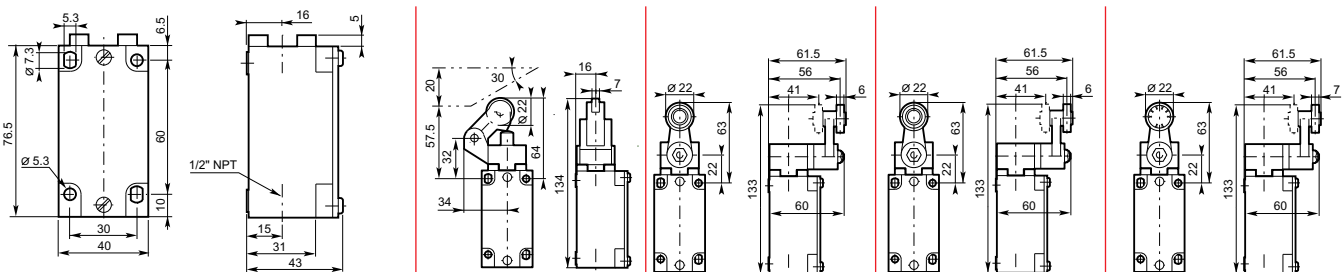
Operating head type

	ø 22 Ball-bearing roller lever	ø 22 Polyamide roller lever	ø 22 Stainless steel roller lever	ø 22 Ball-bearing roller lever
Conformity / (N.C. contact with positive opening operation)		EN 50 041	EN 50 041	EN 50 041
Maximum actuation speed m/s	1.5	1.5	1.5	1.5
Min. force/torque:				
- actuation	12 N	0.15 N.m	0.15 N.m	0.15 N.m
- positive opening operation	40 N	0.44 N.m	0.44 N.m	0.44 N.m

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		LS45M33B11	LS45M41B11	LS45M42B11	LS45M43B11
Snap action contacts	Catalog number	LS45M33B11	LS45M41B11	LS45M42B11	LS45M43B11
	List price	\$ 45	\$ 50	\$ 57	\$ 53
	Operation diagram				
Non-overlapping slow action contacts	Catalog number	LS45M33D11	LS45M41D11	LS45M42D11	LS45M43D11
	List price	49	53	61	57
	Operation diagram				
Overlapping slow action contacts	Catalog number	LS45M33C11	LS45M41C11	LS45M42C11	LS45M43C11
	List price	50	55	63	58
	Operation diagram				
Slow action contacts	Catalog number	LS45M33L02	LS45M41L02	LS45M42L02	LS45M43L02
	List price	50	55	63	58
	Operation diagram				
Slow action contacts	Catalog number	LS45M33L20	LS45M41L20	LS45M42L20	LS45M43L20
	List price	50	55	63	58
	Operation diagram				
Snap action contacts	Catalog number	LS45M33B02	LS45M41B02	LS45M42B02	LS45M43B02
	List price	50	55	63	58
	Operation diagram				
Weight (packing per unit)	kg	0.280	0.280	0.280	0.280

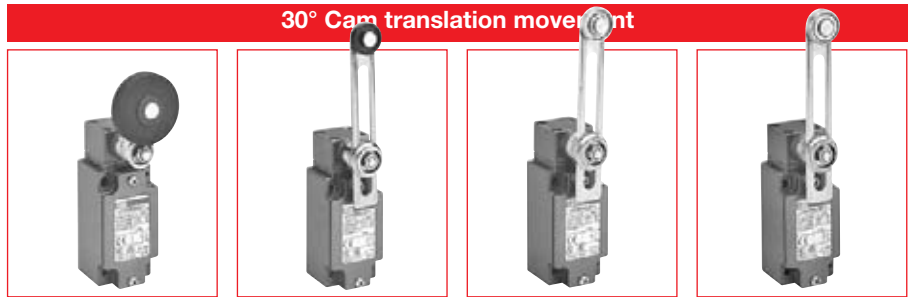
Dimensions (mm)



Assembled 40mm, IP66, UL Type 4X

Metal
Limit switches

Movement to be detected

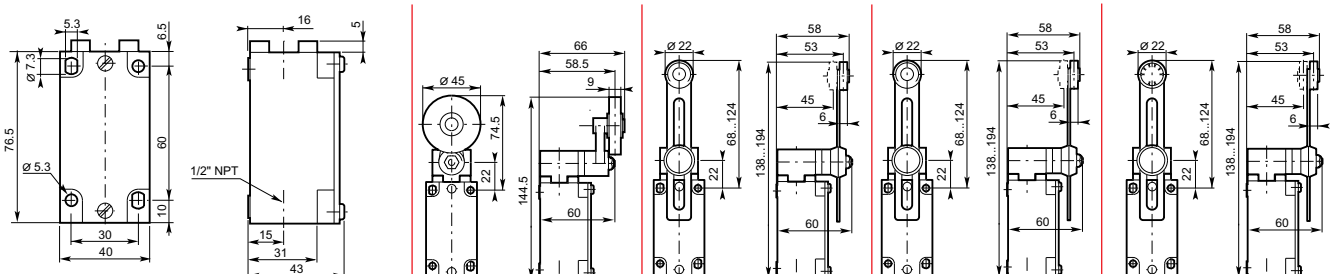


Operating head type

	ø 45 Rubber roller lever	Adjustable ø 22 polyamide roller lever	Adjustable ø 22 stainless steel roller lever	Adjustable ø 22 stainless steel ball-bearing roller lever
Conformity / (N.C. contact with positive opening operation)				
Maximum actuation speed m/s	1.5	1.5	1.5	1.5
Min. torque: - actuation N.m	0.15	0.15	0.15	0.15
- positive opening operation N.m	-	-	-	-

Snap action contacts	Catalog number	LS45M44B11	LS45M51B11	LS45M52B11	LS45M53B11
List price		\$ 51	\$ 51	\$ 59	\$ 55
Operation diagram					
Non-overlapping slow action contacts	Catalog number	LS45M44D11	LS45M51D11	LS45M52D11	LS45M53D11
List price		55	55	63	59
Operation diagram					
Overlapping slow action contacts	Catalog number	LS45M44C11	LS45M51C11	LS45M52C11	LS45M53C11
List price		57	57	65	61
Operation diagram					
Slow action contacts	Catalog number	LS45M44L02	LS45M51L02	LS45M52L02	LS45M53L02
List price		57	57	65	61
Operation diagram					
Slow action contacts	Catalog number	LS45M44L20	LS45M51L20	LS45M52L20	LS45M53L20
List price		57	57	65	61
Operation diagram					
Snap action contacts	Catalog number	LS45M44B02	LS45M51B02	LS45M52B02	LS45M53B02
List price		57	57	65	61
Operation diagram					
Weight (packing per unit)	kg	0.310	0.290	0.300	0.300

Dimensions (mm)



Assembled 40mm, IP66, UL Type 4X

Movement to be detected



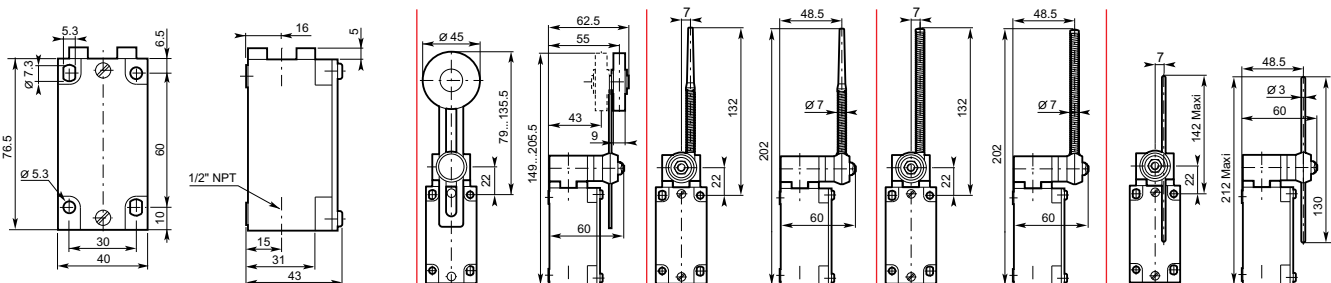
Operating head type

	Adjustable ø 45 rubber roller lever	Flexible lever with insulated end	Coil spring lever	Adjustable ø 3 stainless steel rod lever
Conformity / (N.C. contact with positive opening operation)				EN 50 041
Maximum actuation speed	m/s 1.5	1.5	1.5	0.5
Min. torque: - actuation	N.m 0.15	0.15	0.15	0.15
- positive opening operation	N.m -	-	-	-

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	Catalog number	LS45M54B11	LS45M61B11	LS45M62B11	LS45M71B11
Snap action contacts	List price	\$ 53	\$ 50	\$ 50	\$ 47
	Operation diagram				
Non-overlapping Slow action contacts	Catalog number	LS45M54D11	LS45M61D11	LS45M62D11	LS45M71D11
List price		57	53	53	51
	Operation diagram				
Overlapping Slow action contacts	Catalog number	LS45M54C11	LS45M61C11	LS45M62C11	LS45M71C11
List price		58	55	55	53
	Operation diagram				
Slow action contacts	Catalog number	LS45M54L02	LS45M61L02	LS45M62L02	LS45M71L02
List price		58	55	55	53
	Operation diagram				
Slow action contacts	Catalog number	LS45M54L20	LS45M61L20	LS45M62L20	LS45M71L20
List price		58	55	55	53
	Operation diagram				
Snap action contacts	Catalog number	LS45M54B02	LS45M61B02	LS45M62B02	LS45M71B02
List price		58	55	55	53
	Operation diagram				
Weight (packing per unit)	kg	0.315	0.290	0.295	0.285

Dimensions (mm)



Assembled 40mm, IP66, UL Type 4X

Metal
Limit switches

Movement to be detected

Translation (cont.)



Multidirectional

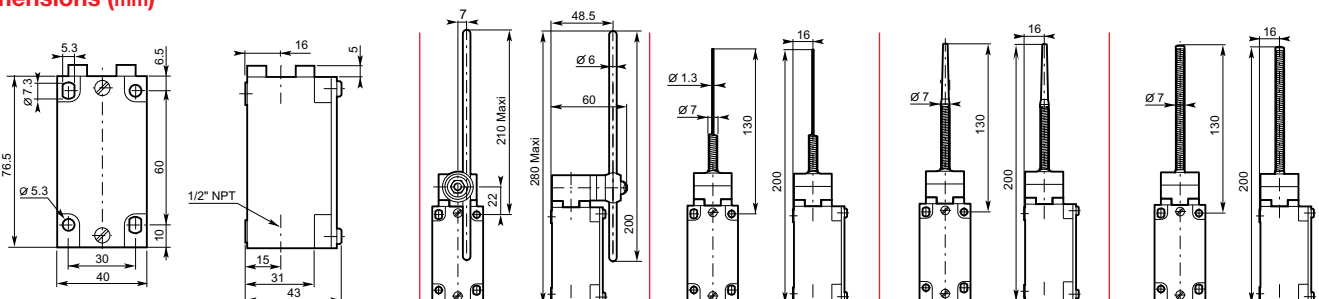


Operating head type

	Adjustable Ø 6 polyamide rod lever	Spring rod	Flexible rod with insulated end	Coil spring rod
Conformity / (N.C. contact with positive opening operation)	EN 50 041			
Maximum actuation speed	m/s 1.5	1	1	1
Min. torque: - actuation	N.m 0.15	0.18	0.18	0.18
- positive opening operation	N.m -	-	-	-

		LS45M72B11 \$ 47	LS45M91B11 \$ 41	LS45M92B11 \$ 43	LS45M93B11 \$ 42
Snap action contacts	Catalog number	LS45M72B11	LS45M91B11	LS45M92B11	LS45M93B11
	List price	\$ 47	\$ 41	\$ 43	\$ 42
	Operation diagram				
Non-overlapping Slow action contacts	Catalog number	LS45M72D11	LS45M91D11	LS45M92D11	LS45M93D11
	List price	50	43	46	45
	Operation diagram				
Overlapping Slow action contacts	Catalog number	LS45M72C11	LS45M91C11	LS45M92C11	LS45M93C11
	List price	52	45	47	47
	Operation diagram				
Slow action contacts	Catalog number	LS45M72L02	LS45M91L02	LS45M92L02	LS45M93L02
	List price	52	45	47	47
	Operation diagram				
Slow action contacts	Catalog number	LS45M72L20	LS45M91L20	LS45M92L20	LS45M93L20
	List price	52	45	47	47
	Operation diagram				
Snap action contacts	Catalog number	LS45M72B02	LS45M91B02	LS45M92B02	LS45M93B02
	List price	52	45	47	47
	Operation diagram				
Weight (packing per unit)	kg	0.285	0.235	0.235	0.235

Dimensions (mm)



Components

40mm, IP66, UL Type 4X



LS45M00B11

Bodies with contact block for rectilinear or angular motion heads

	LS	45	M	00	B 11
Limit Switch	LS				
Casing width: 40 mm		4			
Cable inlet:					
1 cable inlet for Pg 13.5 cable gland			0		
1 cable inlet M20 x 1.5 for ISO 20 cable gland			3		
1 cable inlet for 1/2" NPT			5		
Metal casing			M		
Without operating head				00	

					Contacts
					11 1 N.O. + 1 N.C. contacts
					02 2 N.C. contacts
					20 2 N.O. contacts

					Snap action
					BZb Snap

					Dependent (slow) action
					LZb Slow / Simultaneous
					DZb Non-overlapping late make
					CZb Overlapping early make

Operating heads



LSTE41

	LS	T	E	41
Limit Switch	LS			
Operating head		T		
For Metal casing 40 mm or 60 mm width			E	

					References of heads:
					11 ... 13with rectilinear movement (plain plunger, steel ball plunger or roller plunger)
					21 ... 23with rectilinear movement (with lateral plain or roller plunger)
					31 ... 33with rectilinear movement (with roller lever on steel plunger)
					40with angular movement (without actuator) actuator to be ordered separately
					41 ... 44with angular movement (roller lever)
					50with angular movement (without actuator)
					51 ... 54with angular movement (adjustable roller lever)
					61, 62flexible lever (spring)
					71, 72, 73adjustable lever (rod)
					91 ... 93multidirectional angular movement (spring rod)

Separate actuators (Roller lever, adjustable roller or rod levers, etc.)



LSA40X54

	LS	A	40	X	54
Limit Switch	LS				
Actuator (roller)		A			
Casing width: 40 mm			40		

					Reference of actuators:
					41 ... 44non-adjustable roller lever
					51 ... 54adjustable roller lever
					61, 62flexible lever (spring)
					71, 72, 73adjustable lever (rod)

					For casing:
					M Metal
					P Plastic
					X Plastic or metal

Separate contact blocks



LSC40XB11

	LS	C	40	X	B 11
Limit Switch	LS				
Contact blocks		C			
Casing width: 40 mm			40		

					Contacts
					11 1 N.O. + 1 N.C. contacts
					02 2 N.C. contacts
					20 2 N.O. contacts

					Snap action:
					BZb Snap

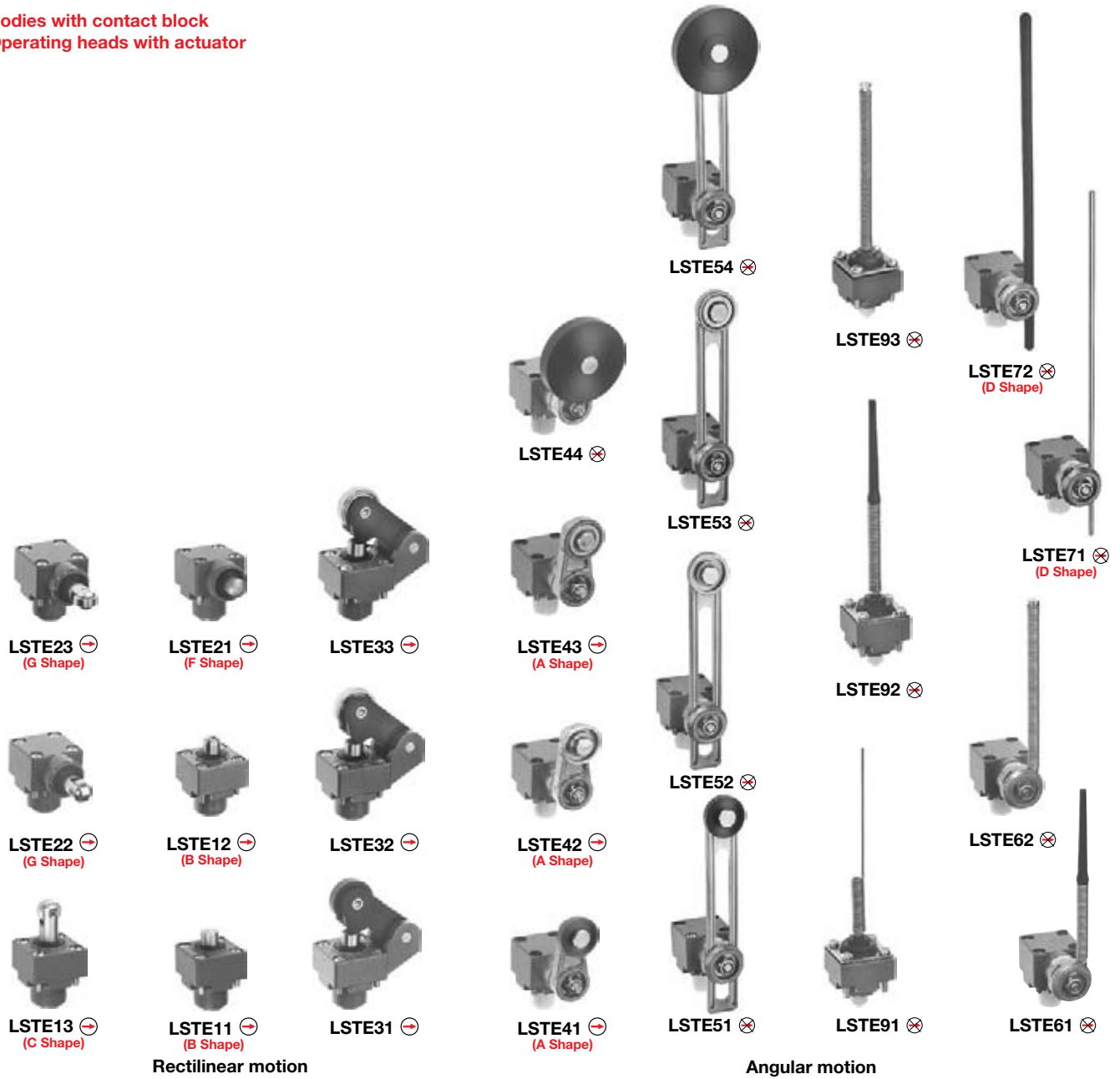
					Dependent (slow) action:
					LZb Slow / Simultaneous
					DZb Non-overlapping late make
					CZb Overlapping early make

Components

40mm, IP66, UL Type 4X

Metal
Limit switches

- Bodies with contact block
- Operating heads with actuator



9

LSTE... rectilinear motion heads

- To be actuated from end. With plunger (plain, lateral plain or ball): LSTE11, LSTE12 and LSTE21.
- To be actuated by 30° cam translation. With roller plunger: LSTE13, LSTE22 and LSTE23.
- To be actuated unidirectionally by 30° cam translation. With roller lever on stainless steel plunger: LSTE31 ... LSTE33.

LSTE... angular motion heads

- To be actuated by 30° cam translation. With roller lever: LSTE41 ... LSTE54.
- To be actuated by fully directional translation movement. With rod or spring lever: LSTE61 ... LSTE72.
- To be actuated multidirectionally. With spring rod: LSTE91 ... LSTE93.



Bodies with contact block

- ⊕ LS45M00B11, LS45M00D11, LS45M00C11, LS45M00L02, LS45M00B02
- ⊗ LS45M00L20

⊕ : Suitable for positive opening operation (IEC 60947-5-1 and EN 50041).

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.

Components

40mm, IP66, UL Type 4X

- Bodies with contact blocks
- Angular motion heads (without actuator)
- Separate actuators
- Separate contact blocks



LSA40X44 ⊗



LSA40X43 ⊕



LSA40X42 ⊕



LSA40X41 ⊕



LSA40X54 ⊗



LSA40X53 ⊗



LSA40X51 ⊗



LSA40X52 ⊗



LSA40X61 ⊗



LSA40X62 ⊗



LSA40X71 ⊗



LSA40X72 ⊗



LSTE40 ⊕

Roller levers



LSTE50 ⊗

Adjustable or flexible levers

LSTE50 angular motion head

For flexible or adjustable levers LSA40X51 ... LSA40X54, LSA40X61, LSA40X62, LSA40X71 and LSA40X72.

LSTE40 angular motion head

For roller levers (non-adjustable) LSA40X41 ... LSA40X44



Bodies with contact block

⊕ LS45M00B11, LS45M00D11, LS45M00C11, LS45M00L02, LS45M00B02

⊗ LS45M00L20



Contact blocks

⊕ LSC40XB11, LSC40XD11, LSC40XC11, LSC40XL02, LSC40XB02

⊗ LSC40XL20

⊕ : Suitable for positive opening operation (IEC 60947-5-1)

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.

Components

40mm, IP66, UL Type 4X

Metal
Limit switches

⊖ "N.C." contact with positive opening operation or element (sub-assembly, head, lever) suitable for positive opening operation.

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊖ are fitted.



LS40M00B11



LSTE11



LSTE21



LSTE13

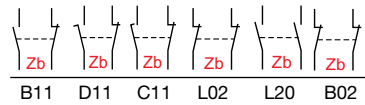


LSTE22



LSTE32

Contact blocks



Positive opening operation

Actuation speed max. m/s

Unit weight kg (1 pc)

Catalog number

List price

Bodies with contact block for rectilinear or angular motion heads

	B11	D11	C11	L02	L20	B02	Positive opening operation	Actuation speed max. m/s	Unit weight kg (1 pc)	Catalog number	List price
1							⊖	—	0.168	LS45M00B11	\$ 28
	1						⊖	—	0.168	LS45M00D11	29
		1					⊖	—	0.168	LS45M00C11	30
			1				⊖	—	0.168	LS45M00L02	30
				1			⊗	—	0.168	LS45M00L20	30
					1		⊖	—	0.168	LS45M00B02	30

Rectilinear motion heads with actuator

To be actuated from end

Stainless steel plain plunger	⊖	0.5	0.077	LSTE11	14
Stainless steel ball plunger	⊖	0.5	0.076	LSTE12	17
Stainless steel lateral plain plunger	⊖	0.5	0.093	LSTE21	17

To be actuated by 30° cam

Stainless steel roller plunger	⊖	0.5	0.084	LSTE13	20
Stainless steel lateral plunger with vertical roller	⊖	0.5	0.098	LSTE22	21
Stainless steel lateral plunger with horizontal roller	⊖	0.5	0.098	LSTE23	21

To be actuated unidirectionally by 30° cam

∅ 22mm polyamide roller lever on stainless steel plunger	⊖	1.5	0.111	LSTE31	19
∅ 22mm stainless steel roller lever on stainless steel plunger	⊖	1.5	0.121	LSTE32	26
∅ 22mm steel ball-bearing roller lever on stainless steel plunger	⊖	1.5	0.122	LSTE33	21

9

Components

40mm, IP66, UL Type 4X

⊕ "N.C." contact with positive opening operation or element (sub-assembly, head, lever) suitable for positive opening operation.

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.



LSTE41



LSTE52



LSTE72 LSTE91



LSTE40



LSA40X41

	Positive opening operation	Actuation speed max. m/s	Unit weight kg (1 pc)	Catalog number	List price
Angular motion heads with actuator					
To be actuated by 30° cam					
⊕ 22mm polyamide roller lever ①	⊕	1.5	0.134	LSTE41	\$ 26
⊕ 22mm stainless steel roller lever ①	⊕	1.5	0.142	LSTE42	34
⊕ 22mm steel ball-bearing roller lever ①	⊕	1.5	0.145	LSTE43	29
⊕ 45mm rubber roller lever ①	⊗	1.5	0.162	LSTE44	28
⊕ 22mm adjustable polyamide roller lever ①	⊗	1.5	0.152	LSTE51	27
⊕ 22mm adjustable stainless steel roller lever ①	⊗	1.5	0.161	LSTE52	35
⊕ 22mm adjustable steel ball-bearing roller lever ①	⊗	1.5	0.163	LSTE53	31
⊕ 45mm adjustable rubber roller lever ①	⊗	1.5	0.168	LSTE54	29
To be actuated by fully directional translation movement					
⊕ Stainless steel flexible lever with insulated end ①	⊗	1	0.145	LSTE61	29
⊕ Stainless steel coil spring lever ①	⊗	1	0.152	LSTE62	29
⊕ 3mm stainless steel rod lever, 195mm ①	⊗	1	0.150	LSTE71	26
⊕ 6mm polyamide rod lever, 195mm ①	⊗	1	0.145	LSTE72	26
⊕ 6mm fiberglass rod lever, 195mm ①	⊗	1	0.149	LSTE73	27
Multidirectional angular motion heads (to be actuated by fully directional translation movement)					
⊗ Stainless steel spring rod	⊗	1	0.066	LSTE91	17
⊗ Stainless steel flexible rod with insulated end	⊗	1	0.068	LSTE92	19
⊗ Stainless steel coil spring rod	⊗	1	0.075	LSTE93	18
Angular motion head without actuator, for non-adjustable roller levers (delivered with M5 nylon stop nut)					
⊕	⊕	1.5	0.102	LSTE40	20
Actuators for angular motion head LSTE40					
⊕ 22mm polyamide roller lever ①	⊕	—	0.032	LSA40X41	6
⊕ 22mm stainless steel roller lever ①	⊕	—	0.042	LSA40X42	14
⊕ 22mm steel ball-bearing roller lever ①	⊕	—	0.044	LSA40X43	9
⊕ 45mm rubber roller lever ①	⊗	—	0.050	LSA40X44	8

① Free position adjustment of lever 9° by 9° over 360°

Components

40mm, IP66, UL Type 4X

Metal
Limit switches

⊖ "N.C." contact with positive opening operation or element (sub-assembly, head, lever) suitable for positive opening operation.

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊖ are fitted.



LSTE41



LSTE52



LSTE72 LSTE91



LSTE40



LSA40X41

	Positive opening operation	Actuation speed max. m/s	Unit weight kg (1 pc)	Catalog number	List price
Angular motion heads with actuator					
To be actuated by 30° cam					
⊖ ⌀ 22mm polyamide roller lever ①	⊖	1.5	0.134	LSTE41	\$ 26
⊖ ⌀ 22mm stainless steel roller lever ①	⊖	1.5	0.142	LSTE42	34
⊖ ⌀ 22mm steel ball-bearing roller lever ①	⊖	1.5	0.145	LSTE43	29
⊖ ⌀ 45mm rubber roller lever ①	⊗	1.5	0.162	LSTE44	28
⊖ ⌀ 22mm adjustable polyamide roller lever ①	⊗	1.5	0.152	LSTE51	27
⊖ ⌀ 22mm adjustable stainless steel roller lever ①	⊗	1.5	0.161	LSTE52	35
⊖ ⌀ 22mm adjustable steel ball-bearing roller lever ①	⊗	1.5	0.163	LSTE53	31
⊖ ⌀ 45mm adjustable rubber roller lever ①	⊗	1.5	0.168	LSTE54	29
To be actuated by fully directional translation movement					
⊖ Stainless steel flexible lever with insulated end ①	⊗	1	0.145	LSTE61	29
⊖ Stainless steel coil spring lever ①	⊗	1	0.152	LSTE62	29
⊖ ⌀ 3mm stainless steel rod lever, 195mm ①	⊗	1	0.150	LSTE71	26
⊖ ⌀ 6mm polyamide rod lever, 195mm ①	⊗	1	0.145	LSTE72	26
⊖ ⌀ 6mm fiberglass rod lever, 195mm ①	⊗	1	0.149	LSTE73	27
Multidirectional angular motion heads (to be actuated by fully directional translation movement)					
⊖ Stainless steel spring rod	⊗	1	0.066	LSTE91	17
⊖ Stainless steel flexible rod with insulated end	⊗	1	0.068	LSTE92	19
⊖ Stainless steel coil spring rod	⊗	1	0.075	LSTE93	18
Angular motion head without actuator, for non-adjustable roller levers (delivered with M5 nylon stop nut)					
⊖	⊖	1.5	0.102	LSTE40	20
Actuators for angular motion head LSTE40					
⊖ ⌀ 22mm polyamide roller lever ①	⊖	—	0.032	LSA40X41	6
⊖ ⌀ 22mm stainless steel roller lever ①	⊖	—	0.042	LSA40X42	14
⊖ ⌀ 22mm steel ball-bearing roller lever ①	⊖	—	0.044	LSA40X43	9
⊖ ⌀ 45mm rubber roller lever ①	⊗	—	0.050	LSA40X44	8

① Free position adjustment of lever 9° by 9° over 360°

9

Components

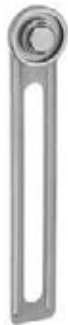
40mm, IP66, UL Type 4X

⊕ "N.C." contact with positive opening operation or element (sub-assembly, head, lever) suitable for positive opening operation.

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.



LSTE50



LSA40X52



LSA40X71



LSA40X61



LSC40XB11

	Positive opening operation	Actuation speed max. m/s	Unit weight kg (1 pc)	Catalog number	List price
Angular motion head without actuator, for flexible or adjustable levers (delivered with M5 nylon nut & adaptation parts)					
	⊗	1 - 1.5 ②	0.121	LSTE50	\$ 22
Actuators for angular motion head LSTE50					
∅ 22mm adjustable polyamide roller lever ①	⊗	—	0.023	LSA40X51	5
∅ 22mm adjustable stainless steel roller lever ①	⊗	—	0.032	LSA40X52	13
∅ 22mm adjustable steel ball-bearing roller lever ①	⊗	—	0.034	LSA40X53	9
∅ 45mm adjustable rubber roller lever ①	⊗	—	0.039	LSA40X54	7
Stainless steel flexible lever with insulated end ①	⊗	—	0.017	LSA40X61	7
Stainless steel coil spring lever ①	⊗	—	0.023	LSA40X62	7
∅ 3mm adjustable stainless steel rod lever, 195mm ①	⊗	—	0.014	LSA40X71	4
∅ 6mm adjustable polyamide rod lever, 195mm ①	⊗	—	0.010	LSA40X72	4
∅ 6mm adjustable fiberglass rod lever, 195mm ①	⊗	—	0.014	LSA40X73	5
Contact blocks (with adaptor)					
1 NC & 1 NO 2-pole snap action	⊕	—	0.032	LSC40XB11	15
1 NC & 1 NO 2-pole non-overlapping slow action	⊕	—	0.032	LSC40XD11	15
1 NO & 1 NC 2-pole overlapping slow action	⊕	—	0.032	LSC40XC11	17
2 NC 2-pole simultaneous slow action	⊕	—	0.032	LSC40XL02	17
2 NO 2-pole simultaneous slow action	⊗	—	0.032	LSC40XL20	17
Bipolar 2 NC 2-pole snap action	⊕	—	0.032	LSC40XB02	17

① Free position adjustment of lever 9° by 9° over 360°
 ② According to lever.

Assembled 60mm, IP66, UL Type 4X

Metal
Limit switches

Movement to be detected

On end



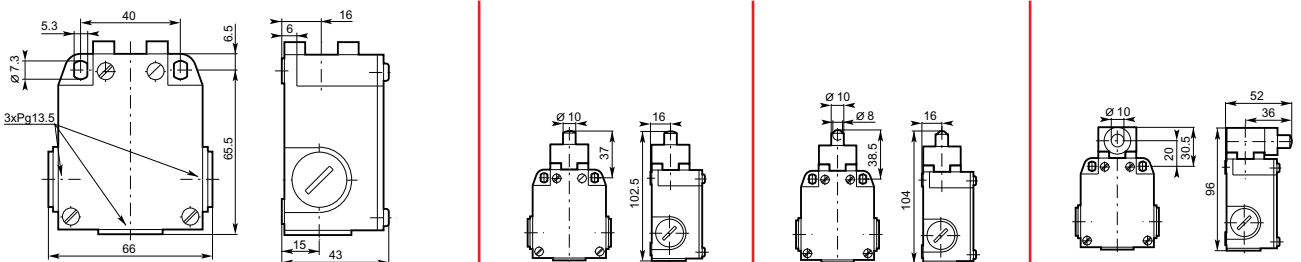
Operating head type

	Stainless steel plain plunger	Stainless steel ball plunger	Stainless steel lateral plain plunger
Conformity / \ominus (N.C. contact with positive opening operation)			
Maximum actuation speed m/s	0.5	0.5	0.5
Min. force: - actuation	22 N	22 N	30 N
- positive opening operation	66 N	66 N	70 N

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Operating head type	Catalog number List price	LS65M11B11 \$ 40	LS65M12B11 \$ 42	LS65M21B11 \$ 42
Snap action contacts 	Catalog number List price	LS65M11D11 43	LS65M12D11 45	LS65M21D11 45
Non-overlapping Slow action contacts 	Catalog number List price	LS65M11C11 44	LS65M12C11 47	LS65M21C11 47
Overlapping Slow action contacts 	Catalog number List price	LS65M11L02 44	LS65M12L02 47	LS65M21L02 47
Slow action contacts 	Catalog number List price	LS65M11L20 44	LS65M12L20 47	LS65M21L20 47
Slow action contacts 	Catalog number List price	LS65M11B02 44	LS65M12B02 47	LS65M21B02 47
Snap action contacts 	Catalog number List price			
Weight (packing per unit)	kg	0.265	0.265	0.280

Dimensions (mm)



**Assembled
60mm, IP66, UL Type 4X**

30° Cam translation movement

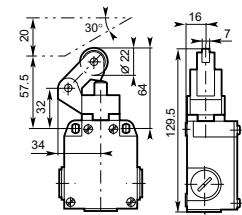
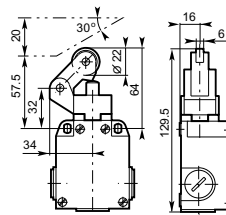
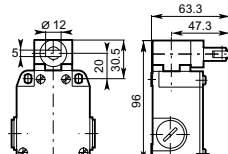
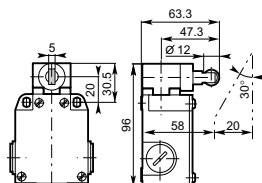
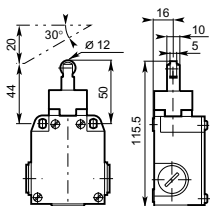


Stainless steel roller plunger	Lateral plunger with vertical roller	Lateral plunger with horizontal roller	ø 22 Polyamide roller lever	ø 22 Stainless steel roller lever
0.5 16 48	0.5 30 70	0.5 30 70	1.5 12 40	1.5 12 40

9

LS65M13B11 \$ 46 0 1.5 3.5 8.4 12.1 mm 21-22 13-14 21-22 13-14	LS65M22B11 \$ 47 0 1.6 3.8 9.0 13.0 mm 21-22 13-14 21-22 13-14	LS65M23B11 \$ 47 0 1.6 3.8 9.0 13.0 mm 21-22 13-14 21-22 13-14	LS65M31B11 \$ 44 0 1.9 4.6 10.9 15.8 mm 21-22 13-14 21-22 13-14	LS65M32B11 \$ 51 0 1.9 4.6 10.9 15.8 mm 21-22 13-14 21-22 13-14
LS65M13D11 49 0 3.5 6.8 15.2 mm 21-22 13-14 6.3	LS65M22D11 50 0 4.2 8.1 18.1 mm 21-22 13-14 7.5	LS65M23D11 50 0 4.2 8.1 18.1 mm 21-22 13-14 7.5	LS65M31D11 47 0 3.0 5.8 13.0 mm 21-22 13-14 5.4	LS65M32D11 55 0 3.0 5.8 13.0 mm 21-22 13-14 5.4
LS65M13C11 51 0 6.1 9.3 15.2 mm 21-22 13-14 3.5	LS65M22C11 52 0 7.2 11.1 18.1 mm 21-22 13-14 4.2	LS65M23C11 52 0 7.2 11.1 18.1 mm 21-22 13-14 4.2	LS65M31C11 49 0 5.2 8.0 13.0 mm 21-22 13-14 3.0	LS65M32C11 57 0 5.2 8.0 13.0 mm 21-22 13-14 3.0
LS65M13L02 51 0 3.0 6.3 15.2 mm 11-12 21-22	LS65M22L02 52 0 3.6 7.5 18.1 mm 11-12 21-22	LS65M23L02 52 0 3.6 7.5 18.1 mm 11-12 21-22	LS65M31L02 49 0 2.6 5.4 13.0 mm 11-12 21-22	LS65M32L02 57 0 2.6 5.4 13.0 mm 11-12 21-22
LS65M13L20 51 0 3.0 15.2 mm 13-14 23-24	LS65M22L20 52 0 3.6 18.1 mm 13-14 23-24	LS65M23L20 52 0 3.6 18.1 mm 13-14 23-24	LS65M31L20 49 0 2.6 13.0 mm 13-14 23-24	LS65M32L20 57 0 2.6 13.0 mm 13-14 23-24
LS65M13B02 51 0 1.5 3.5 8.4 12.1 mm 11-12 21-22 11-12 21-22	LS65M22B02 52 0 1.6 3.8 9.0 13.0 mm 11-12 21-22 11-12 21-22	LS65M23B02 52 0 1.6 3.8 9.0 13.0 mm 11-12 21-22 11-12 21-22	LS65M31B02 49 0 1.9 4.6 10.9 15.8 mm 11-12 21-22 11-12 21-22	LS65M32B02 57 0 1.9 4.6 10.9 15.8 mm 11-12 21-22 11-12 21-22
0.270	0.280	0.280	0.290	0.300

Dimensions (mm)



Assembled 60mm, IP66, UL Type 4X

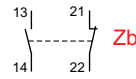
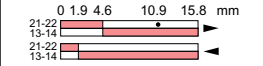
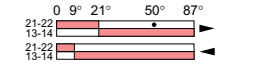
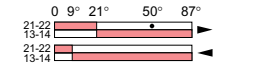
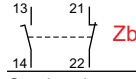
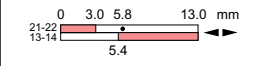
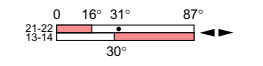
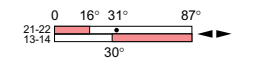
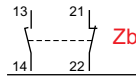
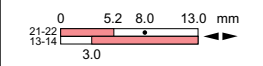
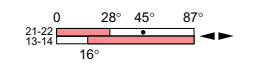
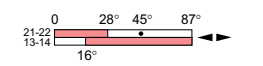
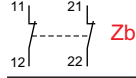
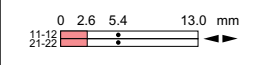


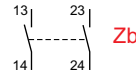
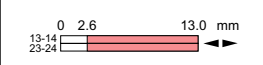
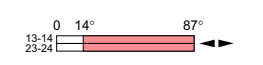
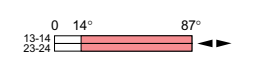
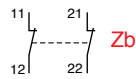
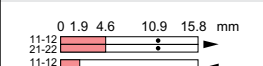
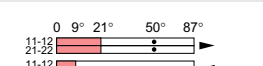

Metal
Limit switches

Movement to be detected

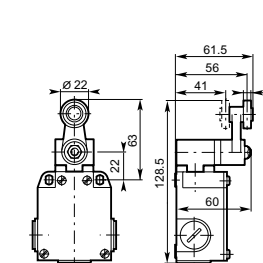
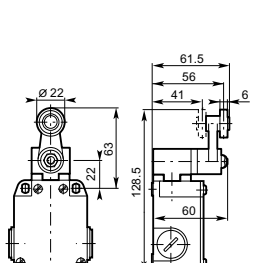
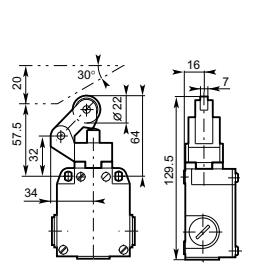
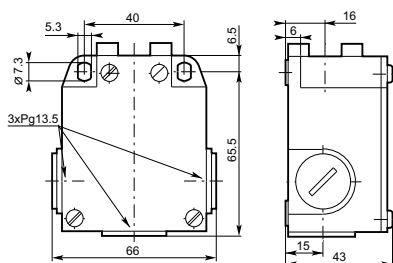


Operating head type

	Ball-bearing roller lever	ø 22 Polyamide roller lever	ø 22 Stainless steel roller lever
Conformity / ⊕ (N.C. contact with positive opening operation)			
Maximum actuation speed m/s	1.5	1.5	1.5
Min. force/torque:	12 N	0.15 N.m	0.15 N.m
- actuation	40 N	0.44 N.m	0.44 N.m
- positive opening operation			

		LS65M33B11 \$ 47	LS65M41B11 \$ 51	LS65M42B11 \$ 58
Snap action contacts	Catalog number	LS65M33B11	LS65M41B11	LS65M42B11
	List price	\$ 47	\$ 51	\$ 58
	Operation diagram			
Non-overlapping Slow action contacts	Catalog number	LS65M33D11	LS65M41D11	LS65M42D11
	List price	51	55	63
	Operation diagram			
Overlapping Slow action contacts	Catalog number	LS65M33C11	LS65M41C11	LS65M42C11
	List price	52	57	65
	Operation diagram			
Slow action contacts	Catalog number	LS65M33L02	LS65M41L02	LS65M42L02
	List price	52	57	65
	Operation diagram			
Slow action contacts	Catalog number	LS65M33L20	LS65M41L20	LS65M42L20
	List price	52	57	65
	Operation diagram			
Snap action contacts	Catalog number	LS65M33B02	LS65M41B02	LS65M42B02
	List price	52	57	65
	Operation diagram			
Weight (packing per unit)	kg	0.300	0.300	0.305

Dimensions (mm)



Assembled
60mm, IP66, UL Type 4X

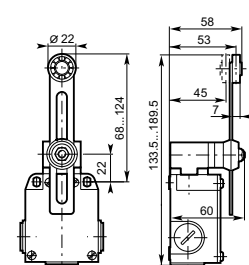
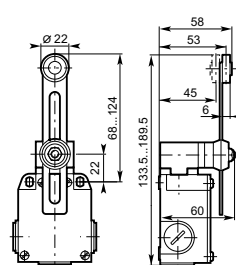
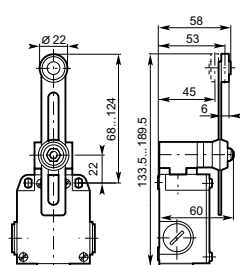
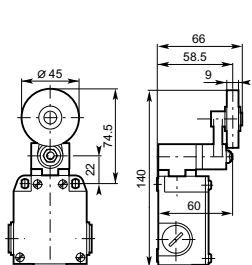
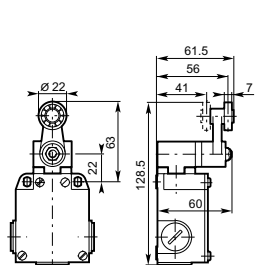
30° Cam translation movement



ø 22 Ball-bearing roller lever 1.5 0.15 N.m 0.44 N.m	ø 45 Rubber roller lever 1.5 0.15 N.m -	Adjustable ø 22 polyamide roller lever 1.5 0.15 N.m -	Adjustable ø 22 stainless steel roller lever 1.5 0.15 N.m -	Adjustable ø 22 stainless steel ball-bearing roller lever 1.5 0.15 N.m -
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9

LS65M43B11 \$ 54 	LS65M44B11 \$ 53 	LS65M51B11 \$ 53 	LS65M52B11 \$ 60 	LS65M53B11 \$ 56
LS65M43D11 58 	LS65M44D11 56 	LS65M51D11 57 	LS65M52D11 65 	LS65M53D11 60
LS65M43C11 60 	LS65M44C11 58 	LS65M51C11 59 	LS65M52C11 67 	LS65M53C11 62
LS65M43L02 60 	LS65M44L02 58 	LS65M51L02 59 	LS65M52L02 67 	LS65M53L02 62
LS65M43L20 60 	LS65M44L20 58 	LS65M51L20 59 	LS65M52L20 67 	LS65M53L20 62
LS65M43B02 60 	LS65M44B02 58 	LS65M51B02 59 	LS65M52B02 67 	LS65M53B02 62
0.305	0.330	0.315	0.325	0.325



Assembled 60mm, IP66, UL Type 4X

Metal
Limit switches

Movement to be detected

30° Cam (cont.)



Fully directional translation movement

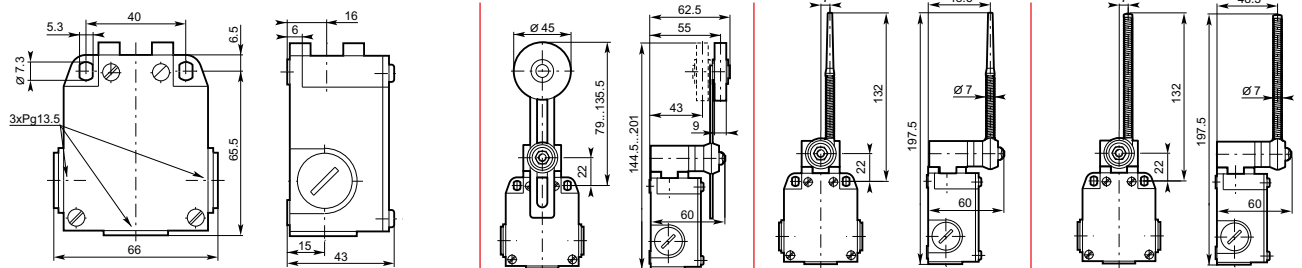


Operating head type

		Adjustable \varnothing 45 rubber roller lever	Flexible lever with insulated end	Coil spring lever
Conformity / \ominus (N.C. contact with positive opening operation)				
Maximum actuation speed	m/s	1.5	1.5	1.5
Min. torque: - actuation	N.m	0.15	0.15	0.15
- positive opening operation	N.m	-	-	-

		LS65M54B11	LS65M61B11	LS65M62B11
Snap action contacts	Catalog number	LS65M54B11	LS65M61B11	LS65M62B11
	List price	\$ 54	\$ 52	\$ 51
	Operation diagram			
Non-overlapping Slow action contacts	Catalog number	LS65M54D11	LS65M61D11	LS65M62D11
	List price	58	55	55
	Operation diagram			
Overlapping Slow action contacts	Catalog number	LS65M54C11	LS65M61C11	LS65M62C11
	List price	60	57	57
	Operation diagram			
Slow action contacts	Catalog number	LS65M54L02	LS65M61L02	LS65M62L02
	List price	60	57	57
	Operation diagram			
Slow action contacts	Catalog number	LS65M54L20	LS65M61L20	LS65M62L20
	List price	60	57	57
	Operation diagram			
Snap action contacts	Catalog number	LS65M54B02	LS65M61B02	LS65M62B02
	List price	60	57	57
	Operation diagram			
Weight (packing per unit)	kg	0.335	0.320	0.325

Dimensions (mm)



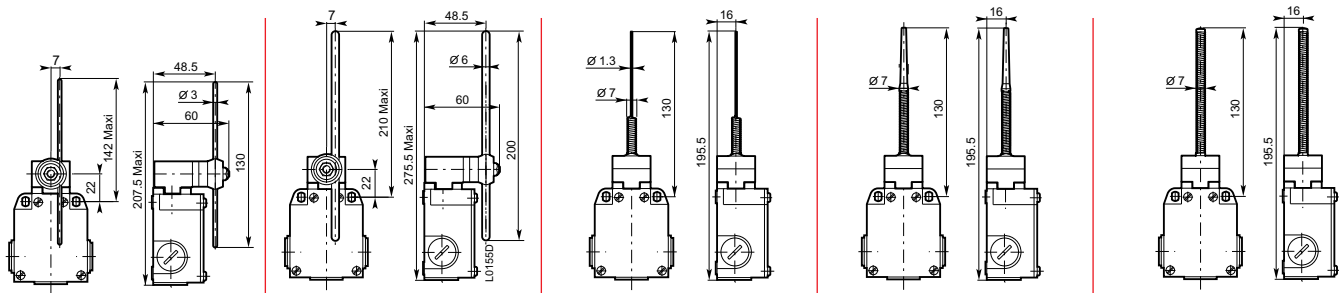
**Assembled
60mm, IP66, UL Type 4X**

Fully directional translation movement

Multidirectional



Adjustable \varnothing 3 stainless steel rod lever	Adjustable \varnothing 6 polyamide rod lever	Spring rod	Flexible rod with insulated end	Coil spring rod
1.5 0.15 -	1 0.15 -	1 0.18 -	1 0.18 -	1 0.18 -
LS65M71B11 \$ 49	LS65M72B11 \$ 49	LS65M91B11 \$ 42	LS65M92B11 \$ 44	LS65M93B11 \$ 44
LS65M71D11 53	LS65M72D11 52	LS65M91D11 45	LS65M92D11 47	LS65M93D11 47
LS65M71C11 54	LS65M72C11 54	LS65M91C11 47	LS65M92C11 49	LS65M93C11 48
LS65M71L02 54	LS65M72L02 54	LS65M91L02 47	LS65M92L02 49	LS65M93L02 48
LS65M71L20 54	LS65M72L20 54	LS65M91L20 47	LS65M92L20 49	LS65M93L20 48
LS65M71B02 54	LS65M72B02 54	LS65M91B02 47	LS65M92B02 49	LS65M93B02 48
0.315	0.315	0.255	0.260	0.255



Assembled 60mm, IP66, UL Type 4X



LS65M00B11

Bodies with contact block for rectilinear or angular motion heads

	LS	65	M	00	B11	
Limit Switch.....	LS					Contacts
Casing width: 60 mm		6				11 1 N.O. + 1 N.C. contacts
Cable inlet:						02 2 N.C. contacts
3 cable inlets for Pg 13.5 cable gland				0		20 2 N.O. contacts
3 cable inlets M20 x 1.5 for ISO 20 cable gland.....				3		
3 cable inlets for 1/2" NPT.....				5		
Metal casing			M			Snap action:
Without operating head				00		BZb Snap
						Dependent (slow) action:
						LZb Slow / Simultaneous
						DZb Non-overlapping late make
						CZb Overlapping early make



LSTE41

Operating heads

	LS	T	E	41	
Limit Switch.....	LS				References of heads:
Operating head		T			11 ... 13with rectilinear movement (plain plunger, steel
For Metal casing: 40 mm or 60 mm width			E	ball plunger and roller plunger
					21 ... 23with rectilinear movement (with lateral plain or
				roller plunger)
					31 ... 33with rectilinear movement (with roller lever on steel
				plunger)
					40with angular movement (without actuator) actuator
				to be ordered separately
					41 ... 44with angular movement (roller lever)
					50with angular movement (without actuator)
					51 ... 54with angular movement (adjustable roller lever)
					61, 62flexible lever (spring)
					71, 72, 73adjustable lever (rod)
					91 ... 93multidirectional angular movement (spring rod)



LSA40X51

Separate actuators (Roller lever, adjustable roller or rod levers, etc.)

	LS	A	40	X	51	
Limit Switch.....	LS					Reference of actuators:
Actuator (roller)		A				41 ... 44non-adjustable roller lever
Casing width: 40 mm			40			51 ... 54adjustable roller lever
The reference 40 is common to all casings (LS40P, LS40M and LS60M)						61, 62flexible lever (spring)
						71, 72, 73adjustable lever (rod)
						For casing:
						M Metal
						P Plastic
						X Plastic or metal

Separate contact blocks

	LS	C	40	X	D	11	
Limit Switch.....	LS						Contacts
Contact blocks		C					11 1 N.O. + 1 N.C. contacts
Casing width: 40 mm			40				02 2 N.C. contacts
The reference 40 is common to all casings (LS40P, LS40M and LS60M)							20 2 N.O. contacts
For casing:							Snap action:
Metal				M			BZb Snap
Plastic					P		Dependent (slow) action:
Plastic or metal					X		LZb Slow / Simultaneous
							DZb Non-overlapping late make
							CZb Overlapping early make



LSC40XD11

Components

60mm, IP66, UL Type 4X

- Bodies with contact block
- Operating heads with actuator

9



LSTE23 ⊕



LSTE21 ⊕



LSTE33 ⊕



LSTE43 ⊕



LSTE22 ⊕



LSTE12 ⊕



LSTE32 ⊕



LSTE42 ⊕



LSTE13 ⊕



LSTE11 ⊕



LSTE31 ⊕



LSTE41 ⊕



LSTE54 ⊗



LSTE44 ⊗



LSTE53 ⊗



LSTE93 ⊗



LSTE72 ⊗



LSTE71 ⊗



LSTE92 ⊗



LSTE52 ⊗



LSTE62 ⊗



LSTE51 ⊗



LSTE91 ⊗



LSTE61 ⊗

Rectilinear motion

Angular motion

LSTE... rectilinear motion heads

- To be actuated from end. With plunger (plain, lateral plain or ball): LSTE11, LSTE12 and LSTE21.
- To be actuated by 30° cam translation. With roller plunger: LSTE13, LSTE22 and LSTE23.
- To be actuated unidirectionally by 30° cam translation. With roller lever on stainless steel plunger: LSTE31 ... LSTE33.

LSTE... angular motion heads

- To be actuated by 30° cam translation. With roller lever: LSTE41 ... LSTE54.
- To be actuated by fully directional translation movement. With rod or spring lever: LSTE61 ... LSTE72.
- To be actuated multidirectionally. With spring rod: LSTE91 ... LSTE93.



Bodies with contact block

- ⊕ LS65M00B11, LS65M00D11, LS65M00C11, LS65M00L02, LS65M00B02
- ⊗ LS65M00L20

⊕: Suitable for positive opening operation (IEC 60947-5-1).

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.

Components

60mm, IP66, UL Type 4X

Metal
Limit switches

- Bodies with contact blocks
- Angular motion heads (without actuator)
- Separate actuators
- Separate contact blocks



LSA40X44 ⊗



LSA40X43 ⊕



LSA40X42 ⊕



LSA40X41 ⊕

Roller levers



LSTE40 ⊕



LSTE50 ⊗

Adjustable or flexible levers

LSTE50 angular motion head
For flexible or adjustable levers LSA40X51 ... LSA40X54, LSA40X61, LSA40X62, LSA40X71 and LSA40X72.



LSA40X54 ⊗



LSA40X53 ⊗



LSA40X51 ⊗



LSA40X61 ⊗



LSA40X62 ⊗



LSA40X71 ⊗



LSA40X72 ⊗

LSTE40 angular motion head
For roller levers (non-adjustable)
LSA40X41 ... LSA40X44



Bodies with contact block

- ⊕ LS65M00B11, LS65M00D11, LS65M00C11, LS65M00L02, LS65M00B02
- ⊗ LS65M00L20

Contact blocks



- ⊕ LSC40XB11, LSC40XD11, LSC40XC11, LSC40XL02, LSC40XB02
- ⊗ LSC40XL20

⊕ : Suitable for positive opening operation (IEC 60947-5-1)

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.

Components

60mm, IP66, UL Type 4X

⊕ "N.C." contact with positive opening operation or element (subassembly, head, lever) suitable for positive opening operation.

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.



LS60M00B11



LSTE11 LSTE13



LSTE12 LSTE23

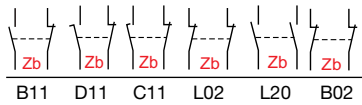


LSTE31 LSTE42



LSTE54 LSTE52

Contact blocks



Bodies with contact block for rectilinear or angular motion heads

	B11	D11	C11	L02	L20	B02	Positive opening operation	Actuation speed max. m/s	Unit weight kg (1 pc)	Catalog number	List price
1							⊕	—	0.198	LS65M00B11	\$ 30
	1						⊕	—	0.198	LS65M00D11	31
		1					⊕	—	0.198	LS65M00C11	32
			1				⊕	—	0.198	LS65M00L02	32
				1			⊗	—	0.198	LS65M00L20	32
					1		⊕	—	0.198	LS65M00B02	32
Rectilinear motion heads											
To be actuated from end											
							⊕	0.5	0.077	LSTE11	14
							⊕	0.5	0.076	LSTE12	17
							⊕	0.5	0.093	LSTE21	17
To be actuated by 30° cam											
							⊕	0.5	0.084	LSTE13	20
							⊕	0.5	0.098	LSTE22	21
							⊕	0.5	0.098	LSTE23	21
To be actuated unidirectionally by 30° cam											
							⊕	1.5	0.111	LSTE31	19
							⊕	1.5	0.121	LSTE32	26
							⊕	1.5	0.122	LSTE33	21
Angular motion heads with actuator											
To be actuated by 30° cam											
							⊕	1.5	0.134	LSTE41	26
							⊕	1.5	0.142	LSTE42	34
							⊕	1.5	0.145	LSTE43	29
							⊗	1.5	0.162	LSTE44	28
							⊗	1.5	0.152	LSTE51	27
							⊗	1.5	0.161	LSTE52	35
							⊗	1.5	0.163	LSTE53	31
							⊗	1.5	0.168	LSTE54	29

⊕ Free position adjustment of lever 9° by 9° over 360°.

Components

60mm, IP66, UL Type 4X

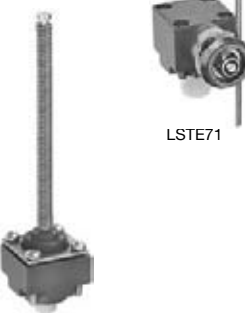
Metal
Limit switches

⊖ "N.C." contact with positive opening operation or element (sub-assembly, head, lever) suitable for positive opening operation.

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.



LSTE61



LSTE71



LSTE93

LSA40X42



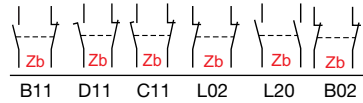
LSTE40



LSA40X53

LSA40X62

Contact blocks



Positive opening operation

Actuation speed max. m/s

Unit weight kg (1 pc)

Catalog number

List price

To be actuated by fully directional translation movement

Stainless steel flexible lever with insulated end ①	⊕	1	0.145	LSTE61	\$ 29
Stainless steel coil spring lever ①	⊕	1	0.152	LSTE62	29
∅ 3mm adjustable stainless steel rod lever, 195mm ①	⊕	1	0.150	LSTE71	26
∅ 3mm adjustable polyamide rod lever, 195mm ①	⊕	1	0.145	LSTE72	26
∅ 6mm adjustable fiberglass rod lever, 195mm ①	⊕	1	0.149	LSTE73	27

Multidirectional angular motion head (to be actuated by fully directional translation movement)

Stainless steel spring rod	⊗	1	0.066	LSTE91	17
Stainless steel flexible rod with insulated end	⊗	1	0.068	LSTE92	19
Stainless steel coil spring rod	⊗	1	0.075	LSTE93	18

Angular motion head without actuator, for non-adjustable roller levers (delivered with M5 nylon stop nut)

	⊕	1.5	0.102	LSTE40	20
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Actuator for angular motion head LSTE40

∅ 22mm polyamide roller lever ①	⊕	—	0.032	LSA40X41	6
∅ 22mm stainless steel roller lever ①	⊕	—	0.042	LSA40X42	14
∅ 22mm steel ball-bearing roller lever ①	⊕	—	0.044	LSA40X43	9
∅ 45mm rubber roller lever ①	⊗	—	0.050	LSA40X44	8

Angular motion head without actuator for flexible or adjustable levers (delivered with M5 nylon stop nut & adaptation parts)

	⊗	1 - 1.5 ②	0.121	LSTE50	22
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Actuators for angular motion head LSTE50

∅ 22mm adjustable polyamide roller lever ①	⊗	—	0.023	LSA40X51	5
∅ 22mm adjustable stainless steel roller lever ①	⊗	—	0.032	LSA40X52	13
∅ 45mm adjustable steel ball-bearing roller lever ①	⊗	—	0.034	LSA40X53	9
∅ 45mm adjustable rubber roller lever ①	⊗	—	0.039	LSA40X54	7
Stainless steel flexible lever with insulated end ①	⊗	—	0.017	LSA40X61	7
Stainless steel coil spring lever ①	⊗	—	0.023	LSA40X62	7
∅ 3mm adjustable stainless steel rod lever, 195mm ①	⊗	—	0.014	LSA40X71	4
∅ 6mm adjustable polyamide rod lever, 195mm ①	⊗	—	0.010	LSA40X72	4
∅ 6mm adjustable fiberglass rod lever, 195mm ①	⊗	—	0.014	LSA40X73	5

① Free position adjustment of lever 9° by 9° over 360°.

② According to lever.

Components

60mm, IP66, UL Type 4X

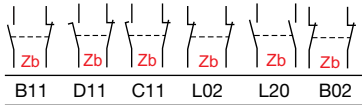
⊕ "N.C." contact with positive opening operation or element (subassembly, head, lever) suitable for positive opening operation.

Warning! The positive opening operation of limit switch is only guaranteed if the elements noted with ⊕ are fitted.



LSC40XB11

Contact blocks



Contact blocks (with adaptor)

- 1 NC & 1 NO 2-pole snap action ⊕
- 1 NC & 1 NO 2-pole non-overlapping slow action ⊕
- 1 NO & 1 NC 2-pole overlapping slow action ⊕
- 2 NC 2-pole simultaneous slow action ⊕
- 2 NO 2-pole simultaneous slow action ⊗
- 2 NC 2-pole snap action ⊕

Positive opening operation

Actuation speed max. m/s

Unit weight kg (1 pc)

Catalog number

List price

Contact blocks	Positive opening operation	Actuation speed max. m/s	Unit weight kg (1 pc)	Catalog number	List price
B11 D11 C11 L02 L20 B02					
Contact blocks (with adaptor)					
1 NC & 1 NO 2-pole snap action	⊕	—	0.032	LSC40XB11	\$ 15
1 NC & 1 NO 2-pole non-overlapping slow action	⊕	—	0.032	LSC40XD11	15
1 NO & 1 NC 2-pole overlapping slow action	⊕	—	0.032	LSC40XC11	17
2 NC 2-pole simultaneous slow action	⊕	—	0.032	LSC40XL02	17
2 NO 2-pole simultaneous slow action	⊗	—	0.032	LSC40XL20	17
2 NC 2-pole snap action	⊕	—	0.032	LSC40XB02	17

① Free position adjustment of lever 9° by 9° over 360°.

Technical data

IP 65, UL Type 4

Metal
Limit switches

General technical data

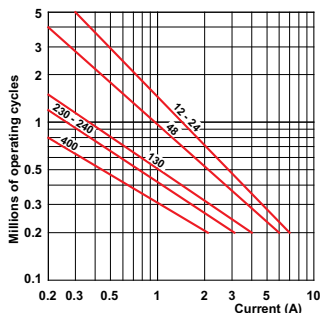
Standards	Devices conform with international IEC 947-5-1 and European EN 60 947-5-1 standards	
Certifications - Approvals	UL & CSA	
Air temperature near the device (IEC)	°C	- 25 ... + 70
- during operation		- 30 ... + 80
- for storage	°C	- 30 ... + 80
Climatic withstand	According to IEC 68-2-3 and salty mist according to IEC 68-2-11	
Mounting positions	All positions are authorized	
Shock withstand (according to IEC 68-2-27 and EN 60 068-2-27)	50g ① (1/2 sinusoidal shock for 11 ms) no change in contact position	
Resistance to vibrations (acc. to IEC 68-2-6 and EN 60 068-2-6)	25g (10 - 500 Hz) no change in position of contacts greater than 100 µs	
Protection against electrical shocks (acc. to IEC 536)	Class I	
Degree of protection	UL Type 4X & IP 66	
Consistency (measured over 1 million operations)	0.05 mm (upon closing point)	
Minimum actuation speed	m/s	Slow action contacts 0.060 / Snap action contacts 0.001

Electrical Data

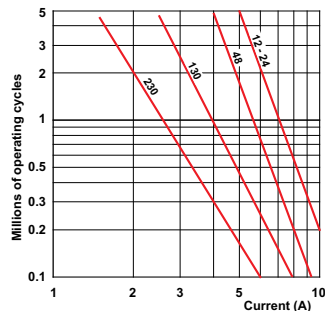
Rated insulation voltage U_i - according to IEC 947-1 and EN 60-947-1 - according to UL 508 and CSA C22-2 n° 34	500 V (degree of pollution 3) A 600, Q 600										
Rated impulse withstand voltage U_{imp} (according to IEC 947-1 and EN 60 947-1)	kV	6									
Conventional free air thermal current I_{th} (according to IEC 947-5-1) $q \leq 40$ °C	A	10									
Short-circuit protection $U_g \leq 500$ V a.c. - gG (gl) type fuses	A	10									
Rated operational current I_o / AC-15 (according to IEC 947-5-1)	24 V - 50/60 Hz A 130 V - 50/60 Hz A 230 V - 50/60 Hz A 240 V - 50/60 Hz A 400 V - 50/60 Hz A	10 5.5 3.1 3 1.8									
I_o / DC-13 (according to IEC 947-5-1)	24 V - d.c. A 110 V - d.c. A 250 V - d.c. A	2.8 0.6 0.27									
Switching frequency	Cycles/h	3600									
Load factor		0.5									
Resistance between contacts	mW	25									
Connecting terminals	M3.5 (+, -) pozidriv 2 screw with cable clamp										
Terminal for protective conductor	M3.5 (+, -) pozidriv 2 screw with cable clamp										
Connecting capacity	1 or 2 x mm ²	0.5 ... 2.5									
Terminal marking	According to EN 50 013										
Mechanical durability	Millions of operations	<table border="0"> <tr> <td>30</td> <td rowspan="3">LS</td> <td>40</td> <td rowspan="3">M</td> <td rowspan="3"> { 11 - 13; 21 - 23; 31 - 33 41 - 44; 51 - 54; 61 - 72 91 - 93 </td> </tr> <tr> <td>25</td> <td>60</td> </tr> <tr> <td>10</td> <td></td> </tr> </table>	30	LS	40	M	{ 11 - 13; 21 - 23; 31 - 33 41 - 44; 51 - 54; 61 - 72 91 - 93	25	60	10	
30	LS	40	M		{ 11 - 13; 21 - 23; 31 - 33 41 - 44; 51 - 54; 61 - 72 91 - 93						
25		60									
10											
Electrical durability (according to IEC 947-5-1)	Utilization categories AC-15 and DC-13 (Load factor of 0.5 according to curves below)										

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AC-15 – Snap action



AC-15 – Slow action



DC-13	Snap action	Slow action
	Power breaking for a durability of 5 million operating cycles	
Voltage 24 V	9.5 W	12 W
Voltage 48 V	6.8 W	9 W
Voltage 110 V	3.6 W	6 W

① except for LS30/31/35 (P42): 25g

