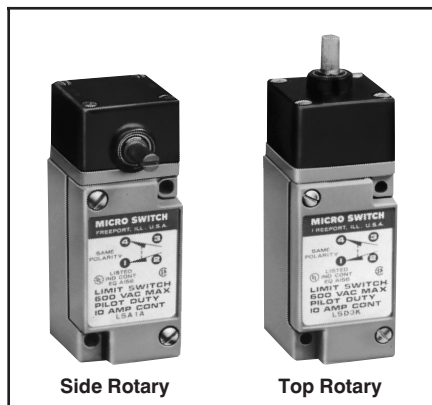


Limit and Enclosed Switches

Rotary Actuated Switches

HDLS Series



Order guides below and on page A35 provide specification and pricing information for side and top rotary switches.

Plug-in body style catalog listings consist of the complete plug-in base receptacle.

Levers are ordered separately. See pages A37-A39 for lever selection.

For rapid response – off the shelf service, all **bold face** listings are normally stocked items.

For low temperature, high temperature or preleading see page A42.

ASSEMBLED CONDITIONS

Catalog listings in order guide below are factory assembled with:

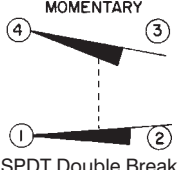
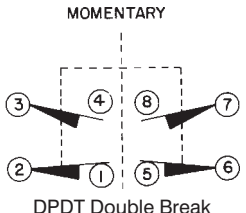
- Shaft of side rotary heads facing front of switch (label side).
- Head adjusted for both clockwise and counterclockwise operation.
- Light on indicator versions wired to N.O. circuit.

Refer to facing page to specify modifications to these assembled conditions.

PRELEADED OR CONNECTORIZED VERSIONS

Refer to page A42.

ORDER GUIDE (Momentary action. UL listed, CSA certified, CE approved. Levers not included. Order separately pages A37-A39.)

Circuitry	Electrical Rating	Body** Style	Catalog Listings					
			Standard	Low Differential	5° Pretravel	Low Torque	Low Differential Low Torque	Top Rotary High Overtravel
Silver contacts	A	Plug-in 1/2" Conduit	LSA1A	LSP1A	LSU1A	LSR1A	LSH1A	LSB1A
Gold cross point contacts	C	Plug-in 1/2" Conduit	LSA1J		LSU1J	—	—	LSB1J
Gold plated contacts	C		LSA1E	LSP1E	—	LSR1E	LSH1E	—
Silver contacts	A*	120 V Ind. lite Plug-In* 1/2" Conduit	LSA5A	LSP5A	LSU5A	LSR5A	LSH5A	LSB5A
	A*	240 V Ind. lite Plug-In 1/2" Conduit	LSA8A	LSP8A	LSU8A	LSR8A	LSH8A	LSB8A
	A*	24 V LED lite 1.5mA max. Auto polarity Plug-in 1/2" Conduit	LSA9A	LSP9A	LSU9A	LSR9A	LSH9A	LSB9A
 SPDT Double Break	A	Non plug-in 1/2" Conduit	LSA3K	LSP3K	LSU3K	LSR3K	LSH3K	LSB3K
Silver contacts	B	Plug-in 3/4" Conduit	LSA2B	LSP2B	LSU2B	LSR2B	LSH2B	LSB2B
 DPDT Double Break	B	Plug-in 1/2" Conduit	LSA6B	LSP6B	LSU6B	LSR6B	LSH6B	LSB6B
	B	120 V Ind. lite Plug-in 3/4" Conduit	LSA2R	LSP2R	LSU2R	LSR2R	LSH2R	LSB2R
	B	Non plug-in 3/4" Conduit	LSA4L	LSP4L	LSU4L	LSR4L	LSH4L	LSB4L
	B	Non plug-in 1/2" Conduit	LSA7L	LSP7L	LSU7L	LSR7L	LSH7L	LSB7L
 SPNC Direct Acting	D	Non plug-in 1/2" Conduit	LSA3N			LSR3N		LSB3N

*Use at voltage indicated for light. Wired to N.O. circuit.

Upper temperature limit for lighted units is 200°F (93°C).

**Plug-in listings include base receptacle.

OPERATING CHARACTERISTICS

Pretravel (degrees max.)		15	9	5	15	9	25
Differential Travel (degrees max.)	SPDT	5	3	3	5	3	10
	DPDT	7	4	4	7	4	12
Overtravel (degrees min.)		60	66	70	60	66	110
Operating Torque (max.)	NM = Newton meters	0,45 Nm 4 in. lbs.	0,45 Nm 4 in. lbs.	0,45 Nm 4 in. lbs.	0,19 Nm 1.7 in. lbs.	0,19 Nm 1.7 in. lbs.	0,28 Nm 2.5 in. lbs.
Operating Temperature Range***		10°F to 250°F -12° to 121°C			30°F to 250°F -1° to 121°C		

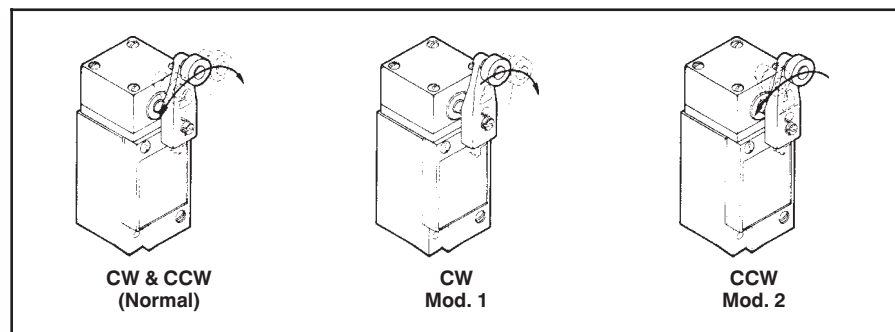
***Completely fluorocarbon-sealed switches are preferred for use in temperatures above 200°F (93°C). Refer to page A42.

Limit/Enclosed

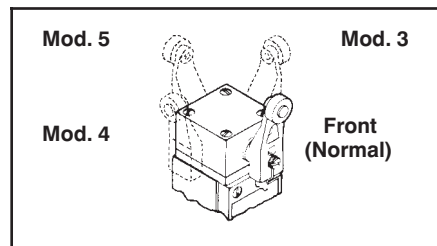
Rotary Actuated Switches

ACTUATION DIRECTION

(Drawings apply to listings on facing page only).



HEAD ORIENTATION



ASSEMBLY MODIFICATIONS

How to order

Momentary action rotary switches can be furnished in other than the normal assembled conditions described on the facing page. To specify modifications, add the number(s) shown below to the catalog listings. Prices are the same as their counterparts shown in the order guide.

Modification number suffixes are:

- 1 Clockwise operation only
- 2 Counterclockwise operation only
- 3 Shaft to right of switch front
- 4 Shaft to left of switch front
- 5 Shaft to back of switch
- 7 Indicator light wired to N.C. circuit

Examples:

Catalog Listing LSA1A23 is an LSA1A switch adjusted for counterclockwise operation only. The operating shaft is to the right side of the switch when viewing it from the front (label side). No lever.

Catalog Listing LSA8A7 is an LSA8A switch with the 240 volt indicator light wired to the N.C. circuit. No lever.

Switches with assembly modifications are not normally stocked and may extend delivery leadtimes.

LEVERS

Levers for rotary actuated switches are normally ordered as separate catalog listings. They also may be ordered by including a suffix to the switch catalog listing and adding the lever price. See pages A34-A39.

SWITCHES FOR SPECIAL APPLICATIONS

HDLS limit switches for special application needs are described on pages A42 and A43. They include: manifold mount, low temperature, complete fluorocarbon-sealed, gravity return, extra low torque and 20 Amp switches.

Adapter plates for interchanging HDLS with LS/200LS limit switches are described on page A49.

ELECTRICAL RATINGS

10 amps continuous carry (except for electrical rating "C"). Circuits on any one pole must be the same polarity.

AC Volts

Pilot duty: 600 VAC, 720VA

Electrical Rating	Circuitry	VAC	Amps at 0.35 Power Factor	
			Make	Break
A*	Single-Pole Double-Throw	120	60	6
		240	30	3
		480	15	1.5
		600	12	1.2
B	Double-Pole Double-Throw	120	30	3
		240	15	1.5
		480	7.5	0.75
		600	6	0.60
D	Single-Pole Single-Throw Normally Closed	120	60	6
		240	30	3
		480	15	1.5
		600	12	1.2
C**	Single-Pole Double-Throw	250 VAC or 60 VDC, .050 amp max.		

DC Volts

Pilot duty: 240 VDC, 30 watts

Electrical Rating	Circuitry	VDC	Make and Break Amps	
			Inductive	Resistive
A*	Single-Pole Double-Throw	120	0.25	0.8
		240	0.15	0.4
B	Double-Pole Double-Throw	120	0.25	0.8
		240	0.15	0.4
D	Single-Pole Single-Throw Normally Closed	30	4.3	4.3
		120	1.1	1.1
C**	Single-Pole Double-Throw	250 VAC or 60 VDC, .050 amp max.		

*For switches with indicator light, use only at voltage stated for indicator light.

**These switches have either gold plated or gold cross point contacts. Cross point contacts improve high reliability of contact make when particle contamination is a problem or low energy loads must be carried.

Limit and Enclosed Switches

Rotary Actuated Switches

HDLS Series

ADDITIONAL CIRCUITRY/ACTION OPTIONS

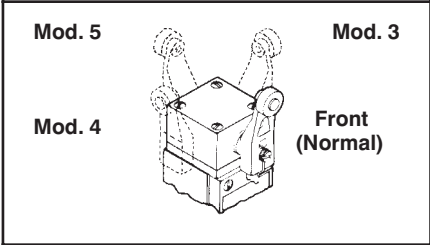


ASSEMBLY MODIFICATIONS
Switches in the order guide, below, have the operating shaft facing front. If another orientation is desired, add a number from the drawing to the catalog listing.

To specify the indicator light wired to the N.C. circuit, add **7** to the catalog listing.

Example:
Catalog Listing **LSN5A37** is an LSN5A switch with the shaft facing right and the indicator light wired to the N.C. circuit.

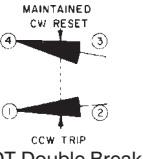
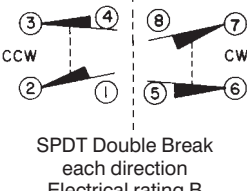
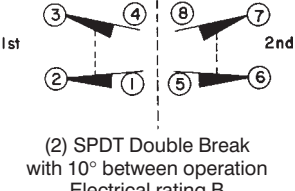
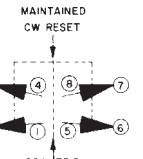
HEAD ORIENTATION
(Drawing applies to this page only.)



Lever ordering information is shown on pages A36-A39.

ORDER GUIDE
Maintained, center neutral, or sequential action. UL listed, CSA certified. Levers not included (see pages A36-A39).

For low temperature, all Viton or preleaded versions see page A42.

Circuitry	Elec. Rating Page A23	Body** Style	Maintained† 360° Alternate Action	2 Position Standard	Center Neutral (Pole 1 operates CCW Pole 2 operates CW)	Sequential (Pole 1 operates before Pole 2, either CW or CCW or both)
 SPDT Double Break Maintained	A	Plug-in 1/2" Conduit	LSQ300	LSN1A	 CENTER NEUTRAL (Momentary) SPDT Double Break each direction Electrical rating B	 SEQUENCE (Momentary) (2) SPDT Double Break with 10° between operation Electrical rating B
	A*	120V Ind. Lite Plug-in 1/2" Conduit		LSN5A		
	A*	240V Ind. Lite Plug-in 1/2" Conduit		LSN8A		
	A	Non plug-in 1/2" Conduit	LSQ310	LSN3K		
 DPDT Double Break Maintained	B	Plug-in 3/4" Conduit		LSN2B	LSM2D	LSL2C
	B	Plug-in 1/2" Conduit		LSN6B	LSM6D	LSL6C
	B	Non plug-in 3/4" Conduit	LSQ320	LSN4L	LSM4N	LSL4M
	B	Non plug-in 1/2" Conduit		LSN7L	LSM7N	LSL7M
 SP Normally Closed Direct Acting	D	Non plug-in 1/2" Conduit		LSN3N		

* Use at voltage indicated for light. Wired to N.O. circuit.
Upper temperature for lighted units is 200°F (93°C).

** Plug-in listings include base receptacle.

† Total travel is approximately 80° max. Maintained contact switch normally used with LSZ53 yoke actuator.

OPERATING CHARACTERISTICS

Pretravel (degrees max.)	SPDT	65	Not Applicable	Not Applicable
Note: Mechanical trip before electrical trip	DPDT	65	18	1st Pole 15 2nd Pole 10 additional (max.)
Differential Travel (degrees max.)	SPDT	40	Not Applicable	Not Applicable
	DPDT	40	10	For each pole — 5 degrees
Overtravel (degrees min.)		20	57	48
Operating Torque (max.)	Nm = Newton meters	0,45 Nm 4 in. lbs.	0,45 4 in. lbs.	0,45 4 in. lbs.
Operating Temperature Range***		30°F to 250°F -1 to 121°C		10°F to 250°F -12 to 121°C

*** Completely fluorocarbon-sealed switches are preferred for temperatures above 200°F (93°C). Refer to page A42.

Limit/Enclosed

Levers for Rotary Actuated Switches

Levers for use with side or top rotary actuated switches are available in a wide choice of sizes and materials, as shown in the order guides on the following pages. Rollers may be on either side of the lever to best match the external actuating mechanism. They permit a wide range of cam tracking possibilities (see drawings below).

LSZ51 standard rollers and **LSZ55** offset roller levers have a fixed 1.5 inch (38,1 mm) radius.

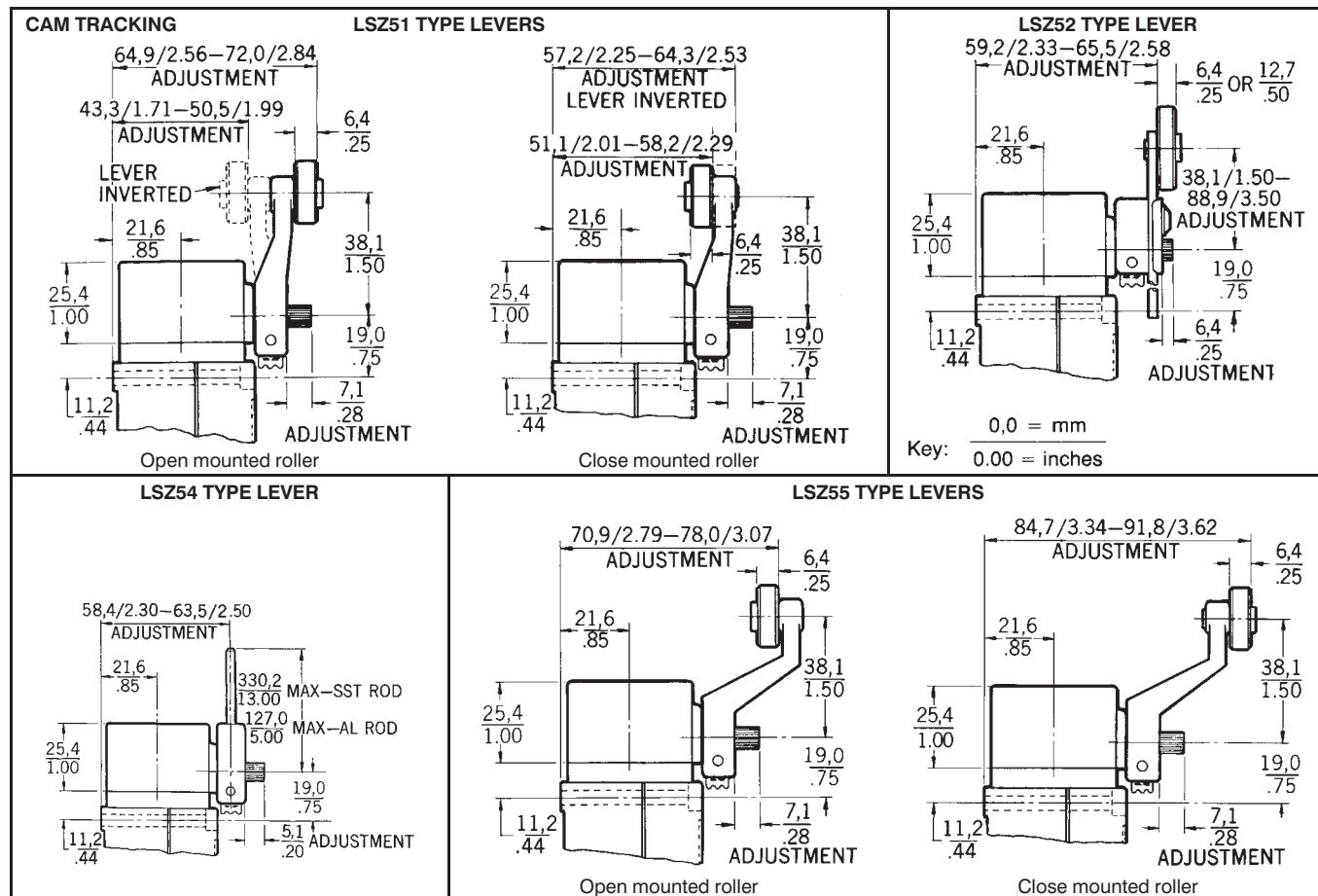
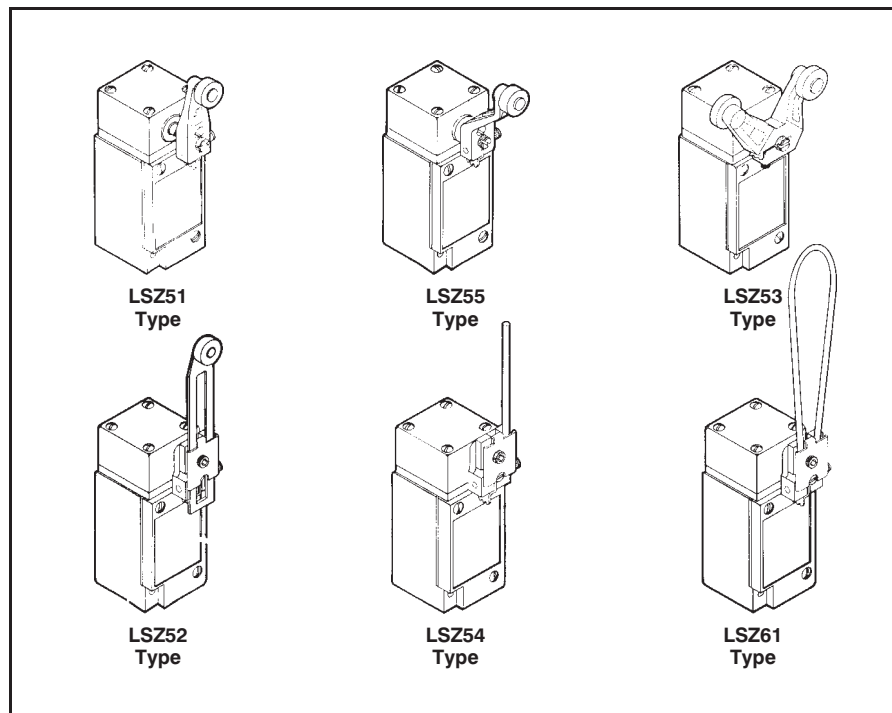
LSZ53 yoke roller levers are used with side rotary maintained switches, where a reciprocating actuator operates the switch in one direction and reverses it when moving in the other direction.

LSZ52 adjustable length roller levers are universally adaptable to many application needs.

LSZ54 rod levers may be formed by the user. The hub permits adjusting of lever length. Also available in flexible versions.

LSZ61 is an adjustable loop lever.

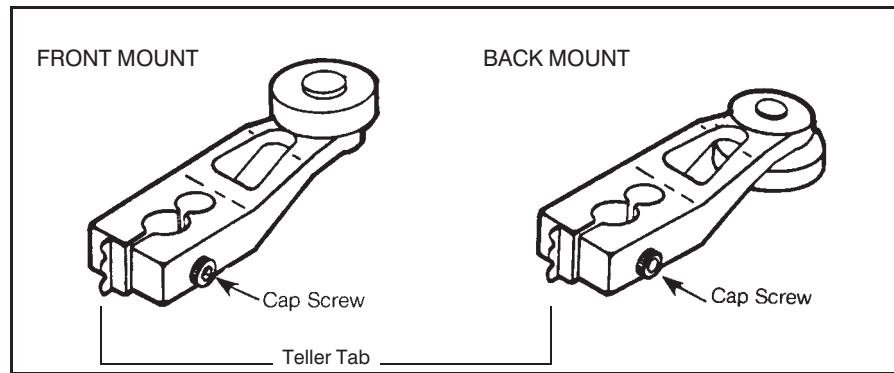
For lever order guides, refer to the following pages.



NOTE: Shaft dia. is .29 in.

Levers for Rotary Actuated Switches

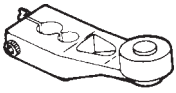
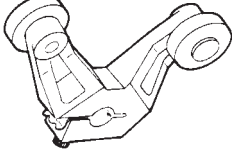
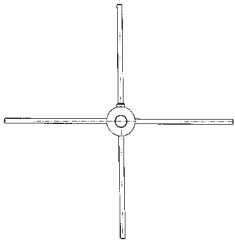
Rollers may be mounted on the front or back side of the lever. (See below).



Levers shown in the order guides are furnished with cap screws which accommodate a $\frac{9}{64}$ -inch allen wrench.

Teller tab assures proper torque. When it cannot be moved, the lever is tight enough to prevent slippage.

ORDER GUIDE

Type	Radius (in.)	Roller Mounted On This Side Of Lever	Dia. in.	Width in.	Material	Catalog Listings
 LSZ51 Series Std. Roller Lever	1.5	Front	.75	.25	Nylon	LSZ51A
	1.5	Front	.75	.25	Steel	LSZ51B
	1.5	Back	.75	.25	Nylon	LSZ51C
	1.5	Back	.75	.25	Steel	LSZ51D
	1.5	Front	1.0	.50	Nylon	LSZ51F
	1.5	Front	1.5	.25	Nylon	LSZ51G
	1.5	Back	1.0	.50	Nylon	LSZ51J
	1.5	Back	.75	.25	Ball Bearing	LSZ51L
	1.5	Back	.75	1.30	Nylon	LSZ51M
	1.5	Back	.75	.375	Stainless	LSZ51T
	1.5	Front	.75	.50	Nylon	LSZ51P
	1.5	Front	1.59	.25	Nylon	LSZ51R
	1.5	—	—	—	Less Roller	LSZ51
 LSZ53 Series Yoke Back view of LSZ53E	1.5	Front-Back	.75	.25	Nylon	LSZ53A
	1.5	Front-Back	.75	.25	Steel	LSZ53B
	1.5	Front-Front	.75	.25	Steel	LSZ53D
	1.5	Back-Front	.75	.25	Nylon	LSZ53E
	1.5	Back-Back	.75	.25	Nylon	LSZ53S
	1.5	Back-Back	.75	.25	Steel	LSZ53P
	1.5	Back-Front	.75	.25	Steel	LSZ53U
	1.5	Back-Front	.75	1.25	Nylon	LSZ53M
	1.5	—	—	—	Less Rollers	LSZ53
	1.5	—	—	—	Less Roller	LSZ55
 LSZ55 Series Offset	1.5	Back	.75	.25	Nylon	LSZ55A
	1.5	Back	.75	.25	Steel	LSZ55B
	1.5	Front	.75	.25	Nylon	LSZ55C
	1.5	Front	.75	.25	Steel	LSZ55D
	1.5	Front	.75	.50	Nylon	LSZ55E
	1.5	Front	1.5	.25	Nylon	LSZ55K
	1.5	Front	1.0	.50	Nylon	LSZ55F
LSZ69 Series* 		—	6.0	—	Stainless (spokes replaceable)	LSZ69CA

*For use with LSQ300 Series. Hub is aluminum. See page A59 for dimensions.

Levers for Rotary Actuated Switches

METRIC CONVERSION

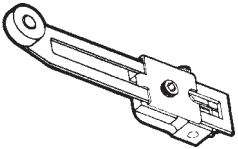
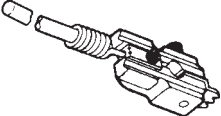
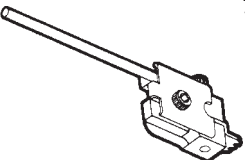
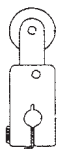
.25 in.	=	6,35 mm
.5 in.	=	12,7 mm
.625 in.	=	15,9 mm
.75 in.	=	19,1 mm
1.0 in.	=	25,4 mm
1.5 in.	=	38,1 mm
2.0 in.	=	50,8 mm
2.5 in.	=	63,5 mm
3.0 in.	=	76,2 mm
4.8 in.	=	122 mm
5.0 in.	=	127 mm
6.0 in.	=	152 mm
12.0 in.	=	305 mm

LOW TORQUE APPLICATION CONSIDERATION

When heavier levers (such as LSZ52 series and LSZ54 series, below), are used with low torque LSH, LSR, LSS and LST switches, it is desirable to mount the switch with the lever down. In this way, gravity will assist in restoring levers to the free position.

Conversely, when these switches are mounted with the lever upright, gravity tends to work to prevent lever return after switching actuation. By counterbalancing the lever or adding an auxiliary extension spring, this problem may be overcome. Contact the 800 number for application assistance.

ORDER GUIDE

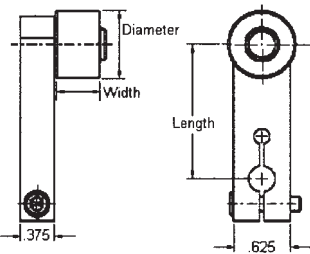
Type	Radius (in.)	Roller Mounted On This Side Of Lever	Dia. in.	Width in.	Material	Catalog Listings
 LSZ52 Series Adjustable Radius	1.5-3.5	Back	.75	.25	Nylon	LSZ52A
	1.5-3.5	Back	.75	.25	Steel	LSZ52B
	1.5-3.5	Front	.75	.25	Nylon	LSZ52C
	1.5-3.5	Front	.75	.25	Steel	LSZ52D
	1.5-3.5	Front	.75	1.30	Nylon	LSZ52E
	1.5-3.5	Front	1.0	.5	Nylon	LSZ52J
	1.5-3.5	Front	1.5	.25	Nylon	LSZ52K
	1.5-3.5	Front	.75	.25	Ball Bearing	LSZ52L
	1.5-3.5	Front	2.0	.25	Nylon	LSZ52M
	1.5-3.5	Front	.75	.5	Nylon Less Roller Hub Only	LSZ52N LSZ52 LSZ54
 LSZ68 Series Spring/Rod	12.0	—	.25	—	Delrin Rod w/Spring	LSZ68
	16.0	—	.25	—	Delrin Rod w/Spring	LSZ617
 LSZ54 Series Rod	5.5	—	—	—	Aluminum	LSZ54M
	13.0	—	—	—	Stainless Steel	LSZ54N
	20.0	—	—	—	Delrin Rod	LSZ54P
	12.0	—	—	—	Spring Wire	LSZ54R
	4.8	—	—	—	Flexible Cable Hub Only	LSZ54V* LSZ54
 LSZ61 Series Flexible Loop		6" Flexible Loop/Cap Screw 9.5" Flexible Loop/Cap Screw (measured from center line of shaft hole to tip of actuator)			Nylatron Hub Only	LSZ61 LSZ618 LSZ54
 LSZ60 Series One Way Roller Lever		Front	.75	.25	Nylon	LSZ60A
		Front	.75	.25	Steel	LSZ60B

See page A60 for dimensions

*Hub not available separately.

Levers for Rotary Actuated Switches

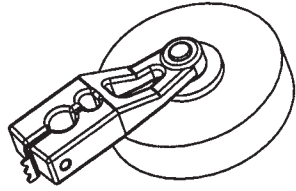
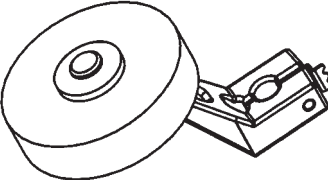
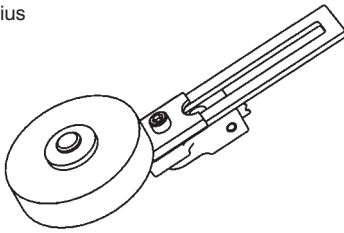
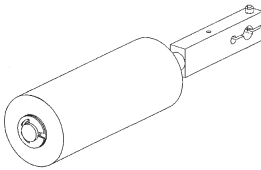
FIXED LENGTH LEVERS ORDER GUIDE

Fixed Length Levers LSZ65 Series	Lever Length (in.)	Lever Listing	For a complete listing add your choice of roller suffix			
			Roller Suffix	Dia. in.	Width in.	Material
	.88	LSZ65A	A	.75	.25	Nylon
	1.38	LSZ65B	B	.75	.25	Steel
	1.25	LSZ65L				
	1.50	LSZ65C	C	.75	.50	Nylon
	1.75	LSZ65D	D	.75	1.30	Nylon
	2.00	LSZ65E	E	1.00	.50	Nylon
	2.50	LSZ65F	F	1.50	.25	Nylon
	3.00	LSZ65G				
	4.00	LSZ65H				
	5.00	LSZ65J				
	6.00	LSZ65K				
	Example: LSZ65AB is a .88" long lever with a steel .75" diameter, .25" wide roller.					

RUBBER ROLLER LEVERS

Ideal for elevator or conveyor applications requiring quiet operation or protection of delicate surfaces.

ORDER GUIDE

Type	Radius (in.)	Roller Mounted On This Side Of Lever	Dia. in.	Width in.	Material	Catalog Listing
LSZ51 Series Std. Roller Lever 	1.5 1.5	Front Front	1.6 2.0	.5 .5	Rubber Rubber	LSZ51W LSZ51Y
LSZ55 Series Offset 	1.5 1.5	Front Front	1.6 2.0	.50 .50	Rubber Rubber	LSZ55W LSZ55Y
LSZ52 Series Adjustable Radius 	1.5 to 3.5 1.5 to 3.5	Front Front	1.6 2.0	.50 .50	Rubber Rubber	LSZ52W LSZ52Y
LSZ67 Series Conveyor Roller 	—	—	1.5	3.8	Plastic	LSZ67AA

Limit/Enclosed

Plunger Actuated Switches

ASSEMBLED CONDITIONS

Catalog listings in order guide below are factory assembled with:

- Side plungers facing front (label side) of switch. Rollers on side plungers are in horizontal position.

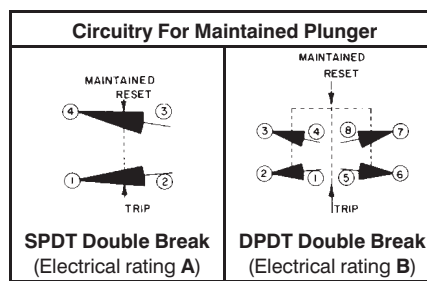
- Roller on top plungers are parallel to mounting surface.
- Lights on indicator versions are wired to N.O. circuit.

Refer to facing page to specify modifications to these assembled conditions.

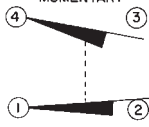
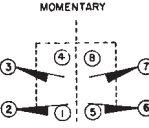
For low temperature, high temperature or preleaded versions see page A42.

ORDER GUIDE

Momentary action, except for maintained contact LSG version. UL listed, CSA certified.



Circuits on any one pole must be the same polarity.

Catalog listings in this chart are complete switches.			Catalog Listings						
			Top Plungers			Side Plungers			Maintained (Circuitry Shown Above)
Circuitry	Elec. Rating Page A34	Body** Style	Plain	Roller	Adjustable	Plain	Roller	Adjustable	
Silver contacts	A	Plug-in 1/2" Conduit	LSC1A	LSD1A	LSV1A	LSE1A	LSF1A	LSW1A	LSG1A
Gold cross pt.	C	Plug-in 1/2" Conduit	LSC1J	LSD1J	LSV1J	LSE1J	LSF1J	LSW1J	—
Gold plated	C		—	LSD1E	—	—	LSF1E	LSW1E	—
 SPDT Double Break	A*	120 V. Ind. Lite Plug-in 1/2" Conduit*	LSC5A	LSD5A	LSV5A	LSE5A	LSF5A	LSW5A	LSG5A
	A*	240 V. Ind. Lite Plug-in 1/2" Conduit*	LSC8A	LSD8A	LSV8A	LSE8A	LSF8A	LSW8A	LSG8A
	A	Non plug-in 1/2" Conduit	LSC3K	LSD3K	LSV3K	LSE3K	LSF3K	LSW3K	LSG3K
 DPDT Double Break	B	Plug-in 3/4" Conduit	LSC2B	LSD2B	LSV2B	LSE2B	LSF2B	LSW2B	LSG2B
	B	120 V Ind. Lite Plug-in 3/4" Conduit	LSC2R	LSD2R	LSV2R	LSE2R	LSF2R	LSW2R	LSG2R
	B	Plug-in 1/2" Conduit	LSC6B	LSD6B	LSV6B	LSE6B	LSF6B	LSW6B	LSG6B
	B	Non plug-in 3/4" Conduit	LSC4L	LSD4L	LSV4L	LSE4L	LSF4L	LSW4L	LSG4L
	B	Non plug-in 1/2" Conduit	LSC7L	LSD7L	LSV7L	LSE7L	LSF7L	LSW7L	LSG7L
 SPNC Direct Acting	D	Non plug-in 1/2" Conduit	—	—	—	LSE3N	LSF3N	LSW3N	LSG3N

*Use at voltage indicated for light. Upper operating temperature limit for lighted units is 200°F. Wired to N.O. circuit.

** Plug-in listings include base receptacle.

OPERATING CHARACTERISTICS

mm Pretravel (in. max.)	1,78 .070	1,78 .070	1,78 .070	2,54 .100	2,54 .100	2,54 .100	4,32 .170
Differential mm Travel (in. max.)	0,38 .015	0,38 .015	0,38 .015	0,64 .025	0,64 .025	0,64 .025	2,29 .090
	0,51 .020	0,51 .020	0,51 .020	0,89 .035	0,89 .035	0,89 .035	2,29 .090
mm Overtravel (in. min.)	4,83 .190	4,83 .190	4,83 .190	4,83 .190	4,83 .190	4,83 .190	2,0 .080
Newton Operating Force (lb. max.)	17,8 4	17,8 4	17,8 4	26,7 6	26,7 6	26,7 6	44,5 10
Operating Point mm (in.)	45,8 ±0,76 1.805 ±.030	55,9 ±1,02 2.200 ±.040	53,0 to 59,3 2.085 to 2.335	33,0 ±0,76 1.300 ±.030	44,1 ±1,02 1.735 ±.040	41,0 to 47,4 1.615 to 1.865	37,6 ±0,76 1.480 ±.030
Operating Temperature Range	10°F to 200°F -12 to 93°C		10°F to 200°F -12 to 93°C		10°F to 200°F -12 to 93°C		30°F to 200°F -1 to 93°C

Plunger Actuated Switches/Assembly Modifications

ASSEMBLY MODIFICATIONS

How to order

To specify other than the normal assembled conditions described on facing page, add the following modification numbers to the catalog listing in the plunger switch order guide.

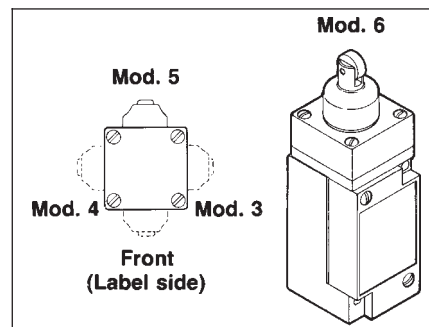
Mod.

- 3 Side plunger to right of switch front
- 4 Side plunger to left of switch front

- 5 Side plunger to back of switch
- 6 Roller on top plungers perpendicular to mounting surface
- 7 Light on indicator versions wired to N.C. circuit
- 8 Roller on side plungers in vertical position.

Example:

LSF1A3 is an LSF1A with the side roller plunger to the right side.



Wobble Actuated Switches

Wobble actuated switches have flexible levers which may be operated with any movement, except direct pull.

ORDER GUIDE

Momentary action. UL listed, CSA certified

			Catalog Listings				
Catalog listings in this chart are complete switches.							
Lever lengths measured from top mounting hole			5.5"	13"	5.5"	5.5"	5.5"
Circuitry	Elec. Rating Page A34	Body** Style	Delrin Rod	Spring Wire	Cat*** Whisker	Cable	Coil Spring
Silver contacts	A	Plug-in 1/2" Conduit	LSJ1A-7A	LSJ1A-7M	LSK1A-8A	LSJ1A-7N	LSK1A-8C
Gold cross point	C	Plug-in 1/2" Conduit	LSJ1J-7A	LSJ1J-7M	LSK1J-8A	LSJ1J-7N	LSK1J-8C
Gold plated contacts	C		—	LSJ1E-7M	—	—	—
Silver contacts MOMENTARY	A*	120 V. Ind. Lite Plug-in 1/2" Conduit*	LSJ5A-7A	LSJ5A-7M	LSK5A-8A	LSJ5A-7N	LSK5A-8C
	A*	240 V. Ind. Lite Plug-in 1/2" Conduit*	LSJ8A-7A	LSJ8A-7M	LSK8A-8A	LSJ8A-7N	LSK8A-8C
SPDT Double Break	A	Non plug-in 1/2" Conduit	LSJ3K-7A	LSJ3K-7M	LSK3K-8A	LSJ3K-7N	LSK3K-8C
Silver contacts MOMENTARY	B	Plug-in 3/4" Conduit	LSJ2B-7A	LSJ2B-7M	LSK2B-8A	LSJ2B-7N	LSK2B-8C
	B	120 V Ind. Lite Plug-In 3/4" Conduit	LSJ2R-7A	LSJ2R-7M	LSK2R-8A	LSJ2R-7N	LSK2R-8C
	B	Plug-in 1/2" Conduit	LSJ6B-7A	LSJ6B-7M	LSK6B-8A	LSJ6B-7N	LSK6B-8C
	B	Non plug-in 3/4" Conduit	LSJ4L-7A	LSJ4L-7M	LSK4L-8A	LSJ4L-7N	LSK4L-8C
	B	Non plug-in 1/2" Conduit	LSJ7L-7A	LSJ7L-7M	LSK7L-8A	LSJ7L-7N	LSK7L-8C
DPDT Double Break							

OPERATING CHARACTERISTICS

mm Pretravel (approx. in. radius)	25,4 1	102 4	51 2	38 1.5	51 2
Newton Operating Force (oz. max.)	2,78 10	1,39 5	1,39 5	1,95 7	1,95 7
Operating Temperature Range	10°F to 200°F 12 to 93°C				

* Use at voltage indicated for light. Upper operating temperature limit for lighted units is 200°F.

** Plug-in listings include base receptacle.

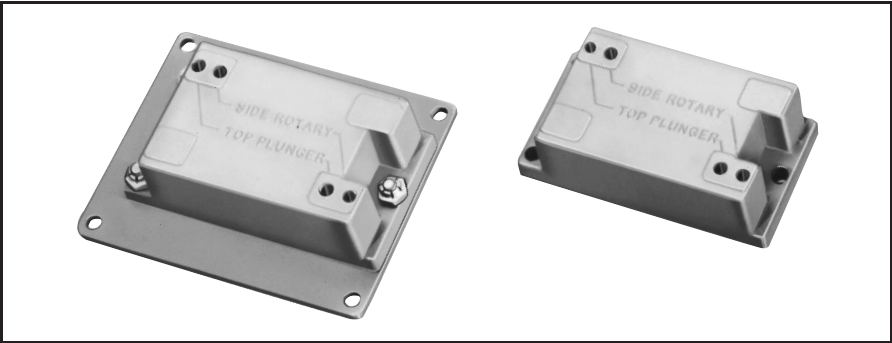
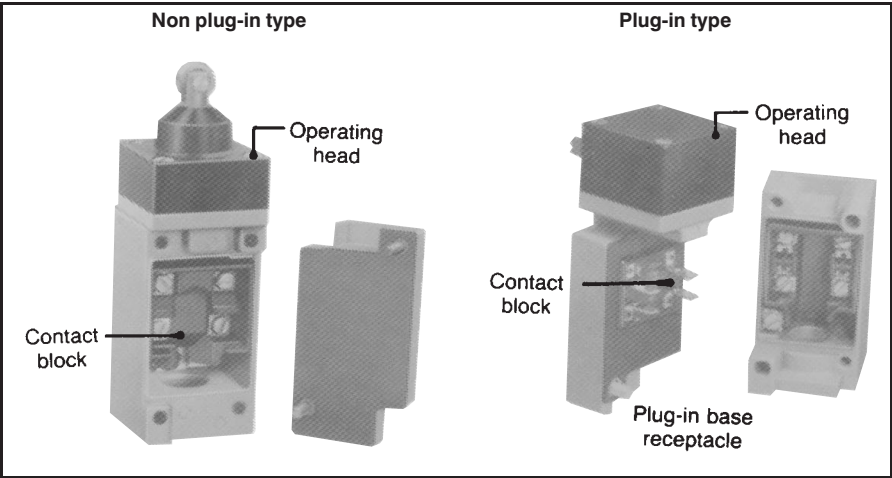
*** These cat whiskers have 5 1/2 inch long levers. To specify 7 1/2 inch length, substitute -8B for -8A.

Limit/Enclosed

Limit and Enclosed Switches

Modification and Replacement Parts

HDLS Series



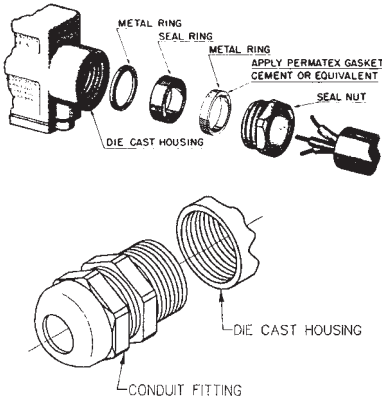
REPLACEMENT WOBBLE ACTUATORS

Catalog Listing				
				
Delrin Rod	Spring Wire	Cable	Cat Whisker	Coil Spring
LSZ4009	LSZ4010	LSZ4011	LSZ4012*	LSZ4014

*5½ inch long. For 7½" length, order LSZ4013.

MICRO SWITCH conduit sealing packets can be used with limit or enclosed switches. This includes the HDLS, Compact LS, ML, E6, V6, BAF1 or OP series switches.

The conduit sealing packets are not suitable for use with explosion-proof switches.



PLUG IN RECEPTACLES

Type	Catalog Listing
Single-Pole	LSZ4001
Double-Pole ¾ in. Conduit	LSZ4002
Double-Pole ½ in. Conduit	LSZ4006
Single-Pole Manifold Mount	LSZ4015
Double-Pole Manifold Mount	LSZ4016

ADAPTER PLATES

These adapter plates enable HDLS plug-in switches to retrofit 200LS series (single-pole) and 300LS series (double-pole) plug-in switches.

Type	Catalog Listing
Adapts 200LS series mounting to accept HDLS	LSZ4003
Adapts 300LS series mounting to accept HDLS	LSZ4004

INDICATOR LIGHTS/SEAL RING

Type	Catalog Listing
120V	LSZ4007
240V	LSZ4008

ADJUSTING TOOL KIT

This tool kit is used if readjustment of switches is necessary when heads and/or contact blocks are replaced.

Catalog Listing
LSZ4005

REPLACEMENT LEVERS

To order replacement levers, specify the same part number that is metal stamped on either the lever or lever hub.

For a complete list of HDLS replacement parts, refer to the charts on the following pages.

CONDUIT SEALING PACKETS

Catalog Listing Packet	Cable O.D. Inches
2PA6	.400" - .435"
2PA16	.435" - .470"
2PA1	.530" - .570"

LIQUID TIGHT CONDUIT FITTING

2PA17	.170" - .470" ½ NPT
2PA19	.450" - .709" ¾ NPT

Limit/Enclosed

Limit and Enclosed Switches

HDLS Series

Replacement Parts

For low temperature or high temperature options, refer to example in LSA1A block.

PLUG-IN TYPE	1	2	3	4	5
Catalog Listing* On Switch Nameplate	Complete Plug-in Unit Less Base Receptacle	Plug-in Base Receptacle Only	Operating Head Only†	Contact Block Only	Actuator Only
Std. LSA1A Low Temp. LSYAB1A High Temp. LSYAC1A	LSZ7A1A LSZ7YAB1A LSZ7YAC1A	LSZ4001 LSZ4001 LSZ4001	LSZ1A LSZ1AB LSZ1AC	LSZ3A LSZ3A LSZ3A	
LSA5A	LSZ7A5A	LSZ4001	LSZ1A	LSZ3A	
LSA8A	LSZ7A8A	LSZ4001	LSZ1A	LSZ3A	
LSA1J	LSZ7A1J	LSZ4001	LSZ1A	LSZ3J	
LSA2B	LSZ7A2B	LSZ4002	LSZ1A	LSZ3B	
LSA6B	LSZ7A6B	LSZ4006	LSZ1A	LSZ3B	
LSB1A	LSZ7B1A	LSZ4001	LSZ1B	LSZ3A	
LSB1J	LSZ7B1J	LSZ4001	LSZ1B	LSZ3J	
LSB5A	LSZ7B5A	LSZ4001	LSZ1B	LSZ3A	
LSB8A	LSZ7B8A	LSZ4001	LSZ1B	LSZ3A	
LSB2B	LSZ7B2B	LSZ4002	LSZ1B	LSZ3B	
LSB6B	LSZ7B6B	LSZ4006	LSZ1B	LSZ3B	
LSC1A	LSZ7C1A	LSZ4001	LSZ1C	LSZ3A	
LSC1J	LSZ7C3J	LSZ4001	LSZ1C	LSZ3J	
LSC5A	LSZ7C5A	LSZ4001	LSZ1C	LSZ3A	
LSC8A	LSZ7C8A	LSZ4001	LSZ1C	LSZ3A	
LSC2B	LSZ7C2B	LSZ4002	LSZ1C	LSZ3B	
LSC6B	LSZ7C6B	LSZ4006	LSZ1C	LSZ3B	
LSD1A	LSZ7D1A	LSZ4001	LSZ1D	LSZ3A	
LSD1J	LSZ7D1J	LSZ4001	LSZ1D	LSZ3J	
LSD2B	LSZ7D2B	LSZ4002	LSZ1D	LSZ3B	
LSD5A	LSZ7D5A	LSZ4001	LSZ1D	LSZ3A	
LSD8A	LSZ7D8A	LSZ4001	LSZ1D	LSZ3A	
LSD6B	LSZ7D6B	LSZ4006	LSZ1D	LSZ3B	
LSE1A	LSZ7E1A	LSZ4001	LSZ1E	LSZ3A	

*Only partial listings are shown and necessary to determine replacement parts catalog listing. The listings with -7A, -7M, -7N, -8A, -8B and -8C are complete catalog listings.

Note: Complete units consist of Columns 1 and 2.

†For low temperature replacement heads add B. Example LSZ1AB. For fluorocarbon seal replacement heads add C. Example LSZ1AC.

PLUG-IN TYPE (Continued)					
Catalog Listing* On Switch Nameplate	Complete Plug-in Unit Less Base Receptacle	Plug-in Base Receptacle Only	Operating Head Only†	Contact Block Only	Actuator Only
LSE1J	LSZ7E1J	LSZ4001	LSZ1E	LSZ3J	
LSE2B	LSZ7E2B	LSZ4002	LSZ1E	LSZ3B	
LSE5A	LSZ7E5A	LSZ4001	LSZ1E	LSZ3A	
LSE8A	LSZ7E8A	LSZ4001	LSZ1E	LSZ3A	
LSE6B	LSZ7E6B	LSZ4006	LSZ1E	LSZ3B	
LSF1A	LSZ7F1A	LSZ4001	LSZ1F	LSZ3A	
LSF1J	LSZ7F1J	LSZ4001	LSZ1F	LSZ3J	
LSF2B	LSZ7F2B	LSZ4002	LSZ1F	LSZ3B	
LSF5A	LSZ7F5A	LSZ4001	LSZ1F	LSZ3A	
LSF8A	LSZ7F8A	LSZ4001	LSZ1F	LSZ3A	
LSF6B	LSZ7F6B	LSZ4006	LSZ1F	LSZ3B	
LSG1A	LSZ7G1A	LSZ4001	LSZ1G		
LSG5A	LSZ7G5A	LSZ4001	LSZ1G		
LSG8A	LSZ7G8A	LSZ4001	LSZ1G		
LSG2B	LSZ7G2B	LSZ4002	LSZ1G		
LSG6B	LSZ7G6B	LSZ4006	LSZ1G		
LSH1A	LSZ7H1A	LSZ4001	LSZ1H	LSZ3A	
LSH2B	LSZ7H2B	LSZ4002	LSZ1H	LSZ3B	
LSH6B	LSZ7H6B	LSZ4006	LSZ1H	LSZ3B	
LSH5A	LSZ7H5A	LSZ4001	LSZ1H	LSZ3A	
LSH8A	LSZ7H8A	LSZ4001	LSZ1H	LSZ3A	
LSJ1A-7A	LSZ7J1A-7A	LSZ4001	LSZ1JGA**	LSZ3A	LSZ4009
LSJ1A-7M	LSZ7J1A-7M	LSZ4001	LSZ1JGM**	LSZ3A	LSZ4010

*Only partial listings are shown and necessary to determine replacement parts catalog listing. The listings with -7A, -7M, -7N, -8A, -8B and -8C are complete catalog listings.

**Includes actuator

Note: Complete units consist of Columns 1 and 2.

† For low temperature replacement heads add B. Example LSZ1AB. For fluorocarbon seal replacement heads add C. Example LSZ1AC.

PLUG-IN TYPE (Continued)					
1		2		3	
4		5			
Catalog Listing* On Switch Nameplate	Complete Plug-in Unit Less Base Receptacle	Plug-in Base Receptacle Only	Operating Head and Actuator‡	Contact Block Only	Actuator Only
LSJ5A-7M	LSZ7J5A-7M	LSZ4001	LSZ1JGM	LSZ3A	LSZ4010
LSJ8A-7M	LSZ7J8A-7M	LSZ4001	LSZ1JGM	LSZ3A	LSZ4010
LSJ2B-7A	LSZ7J2B-7A	LSZ4002	LSZ1JGM	LSZ3B	LSZ4009
LSJ2B-7M	LSZ7J2B-7M	LSZ4002	LSZ1JGM	LSZ3B	LSZ4010
LSJ6B-7M	LSZ7J6B-7M	LSZ4006	LSZ1JGM	LSZ3B	LSZ4010
LSJ5A-7A	LSZ7J5A-7A	LSZ4001	LSZ1JGA	LSZ3A	LSZ4009
LSJ8A-7A	LSZ7J8A-7A	LSZ4001	LSZ1JGA	LSZ3A	LSZ4009
LSJ6B-7A	LSZ7J6B-7A	LSZ4006	LSZ1JGA	LSZ3B	LSZ4009
LSJ1A-7N	LSZJ1A-7N	LSZ4001	LSZ1JGN	LSZ3A	LSZ4011
LSJ1J-7N	LSZ7J1J-7N	LSZ4001	LSZ1JGN	LSZ3J	LSZ4011
LSJ5A-7N	LSZ7J5A-7N	LSZ4001	LSZ1JGN	LSZ3A	LSZ4011
LSJ8A-7N	LSZ7J8A-7N	LSZ4001	LSZ1JGN	LSZ3A	LSZ4011
LSJ2B-7N	LSZ7J2B-7N	LSZ4002	LSZ1JGN	LSZ3B	LSZ4011
LSJ6B-7N	LSZ7J6B-7N	LSZ4006	LSZ1JGN	LSZ3B	LSZ4011
LSK1A-8A	LSZ7K1A-8A	LSZ4001	LSZ1KHA	LSZ3A	LSZ4012
LSK1J-8A	LSZ7K1J-8A	LSZ4001	LSZ1KHA	LSZ3J	LSZ4012
LSK2B-8A	LSZ7K2B-8A	LSZ4002	LSZ1KHA	LSZ3B	LSZ4012
LSK5A-8A	LSZ7K5A-8A	LSZ4001	LSZ1KHA	LSZ3A	LSZ4012
LSK8A-8A	LSZ7K8A-8A	LSZ4001	LSZ1KHA	LSZ3A	LSZ4012
LSK6B-8A	LSZ7K6B-8A	LSZ4006	LSZ1KHA	LSZ3B	LSZ4012
LSK1A-8C	LSZ7K1A-8C	LSZ4001	LSZ1KHC	LSZ3A	LSZ4014
LSK1A-8B	LSZ7K1A-8B	LSZ4001	LSZ1KHB	LSZ3A	LSZ4013
LSK5A-8C	LSZ7K5A-8C	LSZ4001	LSZ1KHC	LSZ3A	LSZ4014
LSK8A-8C	LSZ7K8A-8C	LSZ4001	LSZ1KHC	LSZ3A	LSZ4014
LSK2B-8C	LSZ7K2B-8C	LSZ4002	LSZ1KHC	LSZ3B	LSZ4014
LSK6B-8C	LSZ7K6B-8C	LSZ4006	LSZ1KHC	LSZ3B	LSZ4014

*Only partial listings are shown and necessary to determine replacement parts catalog listing. The listings with -7A, -7M, -7N, -8A, -8B and -8C are complete catalog listings.

Note: Complete units consist of Columns 1 and 2.

‡ For low temperature replacement head and actuators add **B** between the fifth and sixth characters. Example: LSZ1KBHA. For fluorocarbon seals add **C**. Example LSZ1KCHA.

Replacement Parts

5

Limit/Enclosed

† For low temperature replacement heads add B. Example LSZ1AB. For fluorocarbon seal replacement heads add C. Example LSZ1AC.

PLUG-IN TYPE (Continued)					
1		2	3	4	5
Catalog Listing* On Switch Nameplate	Complete Plug-in Unit Less Base Receptacle	Plug-in Base Receptacle Only	Operating Head Only†	Contact Block Only	Actuator Only
LSR8A	LSZ7R8A	LSZ4001	LSZ1R	LSZ3A	
LSS1H	LSZ7S1H	LSZ4001	LSZ1S	LSZ3H	
LSU1A	LSZ7U1A	LSZ4001	LSZ1U	LSZ3A	
LST1H	LSZ7T1H	LSZ4001	LSZ1T	LSZ3H	
LSU5A	LSZ7U5A	LSZ4001	LSZ1U	LSZ3A	
LSV1A	LSZ7V1A	LSZ4001	LSZ1V	LSZ3A	
LSV1J	LSZ7V1J	LSZ4001	LSZ1V	LSZ3J	
LSV5A	LSZ7V5A	LSZ4001	LSZ1V	LSZ3A	
LSV8A	LSZ7V8A	LSZ4001	LSZ1V	LSZ3A	
LSV2B	LSZ7V2B	LSZ4002	LSZ1V	LSZ3B	
LSV6B	LSZ7V6B	LSZ4006	LSZ1V	LSZ3B	
LSW1A	LSZ7W1A	LSZ4001	LSZ1W	LSZ3A	
LSW1J	LSZ7W1J	LSZ4001	LSZ1W	LSZ3J	
LSW5A	LSZ7W5A	LSZ4001	LSZ1W	LSZ3A	
LSW8A	LSZ7W8A	LSZ4001	LSZ1W	LSZ3A	
LSW2B	LSZ7W2B	LSZ4002	LSZ1W	LSZ3B	
LSW6B	LSZ7W6B	LSZ4006	LSZ1W	LSZ3B	

NON PLUG-IN TYPE (These parts will not form a complete switch)

Catalog Listing* On Switch Nameplate	Operating Head Only†	Contact Block Only	Actuator Only
LSA3K	LSZ1A	LSZ3K	
LSA4L	LSZ1A	LSZ3L	
LSA7L	LSZ1A	LSZ3L	
LSB3K	LSZ1B	LSZ3K	
LSB4L	LSZ1B	LSZ3L	
LSB7L	LSZ1B	LSZ3L	
LSC3K	LSZ1C	LSZ3K	
LSC4L	LSZ1C	LSZ3L	

Catalog Listing* On Switch Nameplate	Operating Head and Actuator‡	Contact Block Only	Actuator Only
LSJ7L-7A	LSZ1JGA	LSZ3L	LSZ4009
LSJ7L-7M	LSZ1JGM	LSZ3L	LSZ4010
LSJ4L-7N	LSZ1JGN	LSZ3L	LSZ4011
LSJ7L-7N	LSZ1JGN	LSZ3L	LSZ4011
LSK3K-8A	LSZ1KHA	LSZ3K	LSZ4012
LSK4L-8A	LSZ1KHA	LSZ3L	LSZ4012
LSK7L-8A	LSZ1KHA	LSZ3L	LSZ4012
LSK3K-8C	LSZ1KHC	LSZ3K	LSZ4014

*Only partial listings are shown and necessary to determine replacement parts catalog listing. The listings with -7A, -7M, -7N, -8A, -8B and -8C are complete catalog listings.

Note: Complete units consist of Columns 1 and 2.

‡ For low temperature replacement head and actuators add **B** between the fifth and sixth characters. Example LSZ1KBHA. For fluorocarbon seals add **C**. Example LSZ1KCHA.

NON PLUG-IN TYPE

Catalog Listing* On Switch Nameplate	Operating Head Only†	Contact Block Only	Actuator Only
LSC7L	LSZ1C	LSZ3L	
LSD3K	LSZ1D	LSZ3K	
LSD4L	LSZ1D	LSZ3L	
LSD7L	LSZ1D	LSZ3L	
LSE3K	LSZ1E	LSZ3K	
LSE4L	LSZ1E	LSZ3L	
LSE7L	LSZ1E	LSZ3L	
LSF3K	LSZ1F	LSZ3K	
LSF4L	LSZ1F	LSZ3L	
LSF7L	LSZ1F	LSZ3L	
LSG3K	LSZ1G		
LSG4L	LSZ1G		
LSG7L	LSZ1G		
LSH3K	LSZ1H	LSZ3K	
LSH4L	LSZ1H	LSZ3L	
LSH7L	LSZ1H	LSZ3L	

Catalog Listing* On Switch Nameplate	Operating Head and Actuator‡	Contact Block Only	Actuator Only
LSJ3K-7A	LSZ1JGA	LSZ3K	LSZ4009
LSJ3K-7M	LSZ1JGM	LSZ3K	LSZ4010
LSJ3K-7N	LSZ1JGN	LSZ3K	LSZ4011
LSJ4L-7A	LSZ1JGA	LSZ3L	LSZ4009
LSJ4L-7M	LSZ1JGM	LSZ3L	LSZ4010
LSK4L-8C	LSZ1KHC	LSZ3L	LSZ4014
LSK7L-8C	LSZ1KHC	LSZ3L	LSZ4014

‡ For low temperature replacement head and actuators add **B** between the fifth and sixth characters. Example: LSZ1KBHA. For fluorocarbon seals add **C**. Example LSZ1KCHA.

Catalog Listing* On Switch Nameplate	Operating Head Only†	Contact Block Only	Actuator Only
LSL4M	LSZ1L	LSZ3M	
LSL7M	LSZ1L	LSZ3M	
LSM4N	LSZ1M	LSZ3M	
LSM7N	LSZ1M	LSZ3M	
LSN3K	LSZ1N		
LSN4L	LSZ1N		
LSN7L	LSZ1N		
LSP3K	LSZ1P	LSZ3K	
LSP4L	LSZ1P	LSZ3L	
LSP7L	LSZ1P	LSZ3L	
LSR3K	LSZ1R	LSZ3K	
LSR4L	LSZ1R	LSZ3L	
LSR7L	LSZ1R	LSZ3L	
LSV3K	LSZ1V	LSZ3K	
LSV4L	LSZ1V	LSZ3L	
LSV7L	LSZ1V	LSZ3L	
LSW3K	LSZ1W	LSZ3K	
LSW4L	LSZ1W	LSZ3L	
LSW7L	LSZ1W	LSZ3L	

REPLACEMENT PARTS FOR STAINLESS STEEL HDLS

Listing	Operating Head	Contact Block
LS2A3N	LS2Z1A	N/A
LS2A4K	LS2Z1A	LSZ3K
LS2A4L	LS2Z1A	LSZ3L
LS2D4K	LS2Z1D	LSZ3K
LS2D4L	LS2Z1D	LSZ3L
LS2E4K	LS2Z1E	LSZ3K
LS2E4L	LS2Z1E	LSZ3L
LS2F4K	LS2Z1F	LSZ3K
LS2F4L	LS2Z1F	LSZ3L
LS2H3K	LS2Z1H	LSZ3K
LS2H4K	LS2Z1H	LSZ3K
LS2H4L	LS2Z1H	LSZ3L
LS2M4N	LS2Z1M	LSZ3M
LS2N3K	LS2Z1N	LSZ3K

* Only partial listings are shown and necessary to determine replacement parts catalog listing. The listings with -7A, -7M, -7N, -8A, -8B and -8C are complete catalog listings.

† For low temperature replacement heads add B. Example LSZ1AB. For fluorocarbon seal replacement heads add C. Example LSZ1AC.

Limit/Enclosed