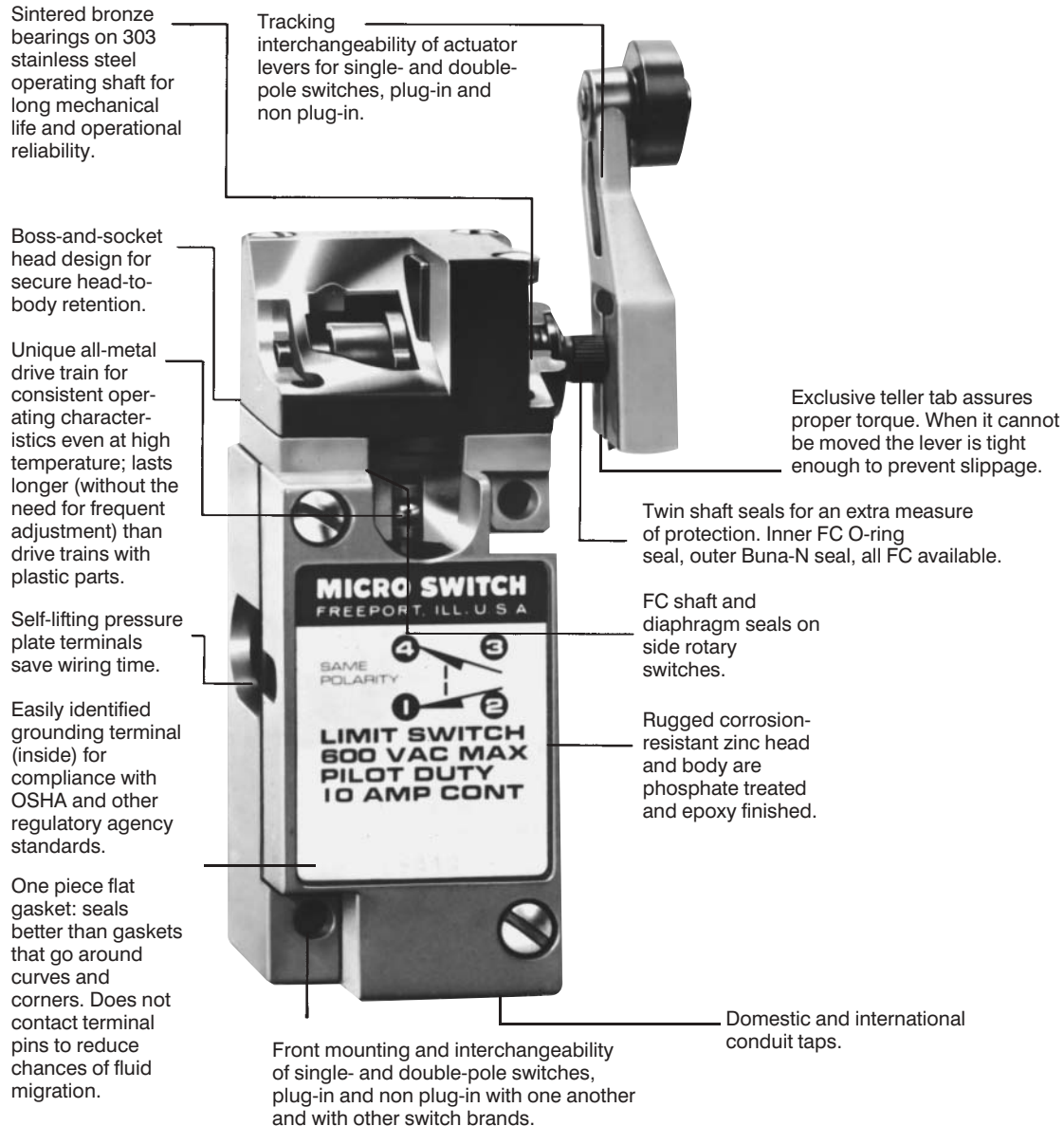


Heavy Duty Limit Switches

ADDITIONAL FEATURES AND OPTIONS

- Wide variety of operating heads
- Field adjustable operating modes, for reduced inventory
- Convenience of on-the-spot adjustment instructions
- Complete choice of circuitry and electrical rating options, including solid state switching
- Plug-in and non plug-in versions have identical operating characteristics and are dimensionally interchangeable
- Manifold (rear-wire) version
- NEMA 1, 3, 4, 4X, 6, 6P, and 13*
- UL Listed, file #E37138
- CSA Certified, file #LR57326
- Explosion-proof version page A113
- Low temperature versions to -40°F (-40°C) page A42
- Captive head and body screws
- Designed to withstand seismic shock
- Stainless steel (NEMA 4X) version page A47
- Prelead cable or prewired connector types page A42
- Epoxy filled wash down (NEMA 6P) types page A44
- Completely fluorocarbon (FC) sealed versions page A42

* Depending on operating head, prewired connector or cable, enclosure ratings may vary. For enclosure rating information on specific catalog listings, contact the 800 number.



Heavy Duty Limit Switches

ROTARY OPERATING HEADS

The head type is designated by the first three letters in the catalog listing, i.e., **LSA1A-1A** has an **LSA** standard side rotary head. See order guides for details. All are momentary action, except the maintained contact LSN head.



Side rotary



Top rotary

SIDE ROTARY

LSA — Standard

Overtravel 60° minimum, pretravel 15° maximum, differential travel 5° (single-pole) and 7° (double-pole) maximum.

LSP — Low Differential Travel

Overtravel 68° minimum, pretravel 9° maximum, differential travel 3° (single-pole) and 4° (double-pole) maximum.

LSR — Low Operating Torque

Overtravel 60° minimum, pretravel 15° maximum, operating torque 1.7 in. lbs. (0,19 Nm) maximum.

LSH — Low Torque, Low Differential Travel

Overtravel 68° minimum, operating torque 1.7 in. lbs. (0,19 Nm) maximum, differential travel 3° (single-pole) and 4° (double-pole) maximum.

LSS — Gravity Return

Operating torque 5 in.-oz.

LST — Extra Low Torque

Operating torque 12 in.-oz.

LSL — Sequence Action

Delayed action between operation of two poles, in each direction. Overtravel 48° minimum.

LSM — Center Neutral

One set of contacts operates on clockwise rotation, another set on counterclockwise rotation. Overtravel 53° minimum.

LSN — Maintained Contact

Operation is maintained on counterclockwise rotation, reset on clockwise rotation, and vice versa. Overtravel 20° minimum.

TOP ROTARY

LSB — High Overtravel

Top rotary actuation is ideal when increased overtravel is required (100° minimum.) Uses same levers as side rotary switches.

ROTARY LEVERS

Shown below are typical lever series for side and top rotary switches. Additional versions are described in the lever order guides.

LSZ51 — Standard Roller Lever (1.5")

LSZ55 — Offset Roller Lever

LSZ53 — Yoke Roller Lever

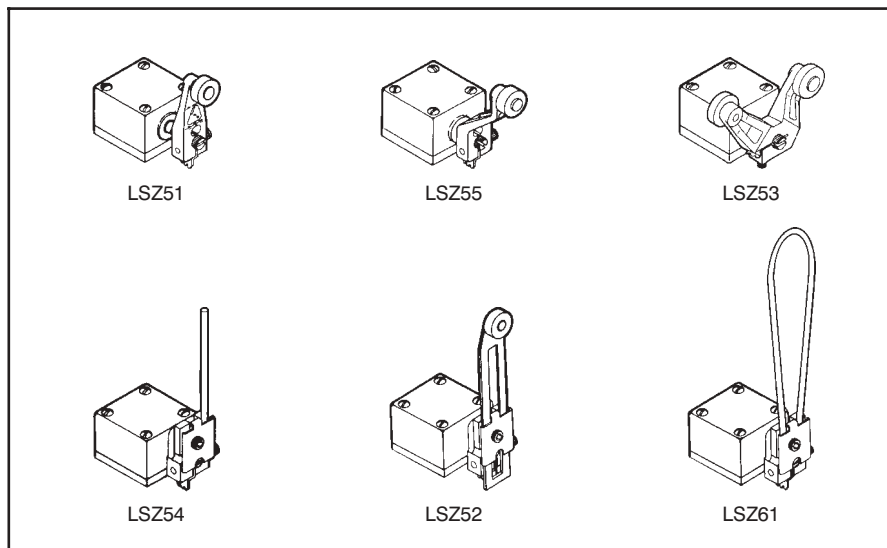
For use with LSN maintained contact switches.

LSZ52 — Adjustable Length Roller Lever

LSZ54 — Rod Lever

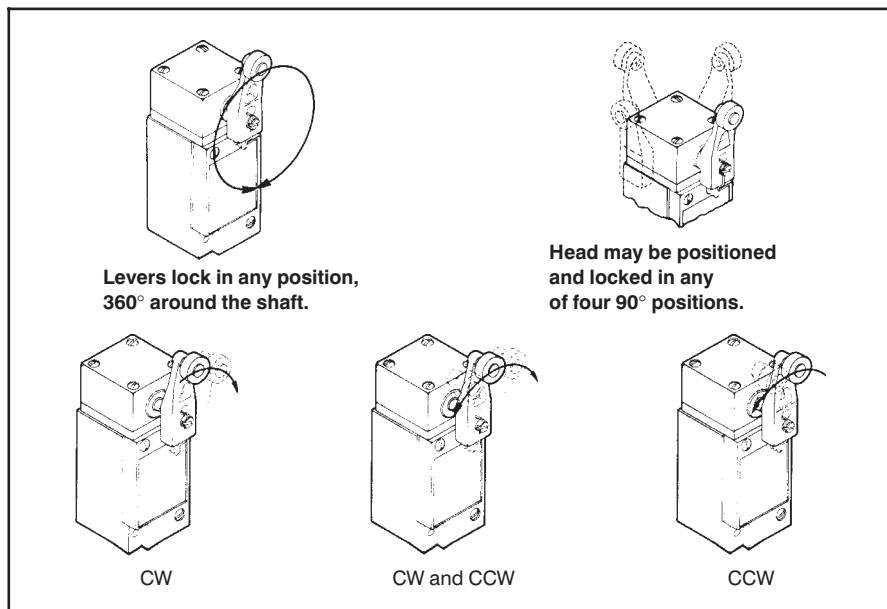
May be cut or formed by user. Available in flexible versions.

LSZ61 — Adjustable Loop Lever



Field adjustable to match application needs

Actuation is adjustable for operation clockwise, counterclockwise, or in both directions. Adjusting instructions are cast into the internal lid of side rotary heads for convenient reference.



Limit/Enclosed

Heavy Duty Limit Switches

PLUNGER OPERATING HEADS

All plungers are momentary action, except the LSG maintained contact version. Over-travel is .190 inch (4.83 mm) minimum. The plungers are sealed with an oiltight boot. A gasket seal is between the head and housing. Plungers are corrosion resistant steel.

TOP PLUNGERS

LSC — Top Plain Plunger

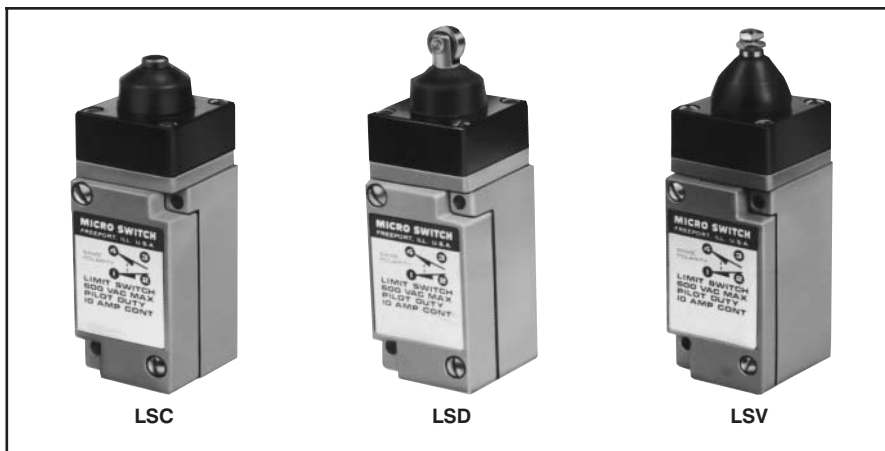
For in-line operating motion.

LSD — Top Roller Plunger

Can be set at 90° increments to accept cam or slide actuation.

LSV — Adjustable Top Plain Plunger

Simplifies installation, since switch operating point can be adjusted from 2.085 to 2.335 inch.



SIDE PLUNGERS

Side plungers fit in close quarters. The heads may be positioned to accept actuation from any of four directions, 90° apart.

LSE — Side Plain Plunger

For in-line actuating motion

LSF — Side Roller Plunger

Roller may be set in vertical or horizontal position for cam or slide actuation.

LSW — Adjustable Side Plain Plunger

Adjustable operating point, 1.615 to 1.865 inch.

LSG — Maintained Contact Side Plain Plunger

Transfer of switch contacts is maintained after either of the two plungers is operated. Operation of other plunger resets switch for next cycle.



WOBBLE LEVER OPERATING HEAD

Switches with wobble lever heads are operated by any movement, except direct pull.

LSJ1A-7M — Spring Wire Lever

May be formed by user to meet special needs.

LSJ1A-7A — Plastic Rod Lever

Use to avoid scratching or marring by actuator.

LSJ1A-7N — Flexible Cable Lever

LSK1A-8C — Stainless Steel Coil Spring Lever

LSK1A-8A — Cat Whisker

For low operating force applications

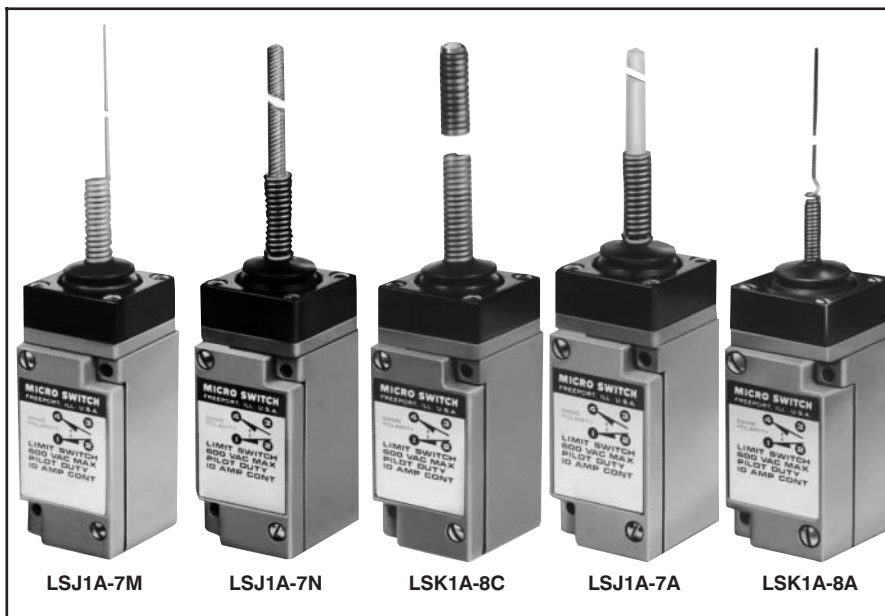
CONDUIT OPENINGS

For conduit openings other than 1/2-NPT and 3/4-NPT, substitute the following for LS in the catalog listing:

PG13,5 — LS3

2mm — LS4

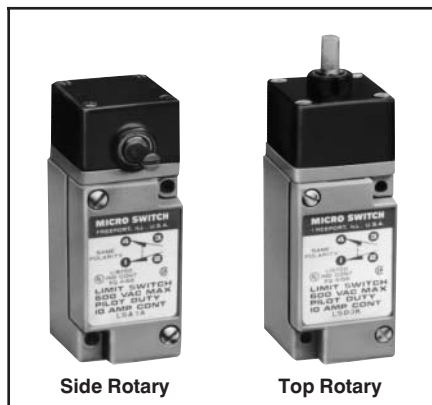
PF1/2 — LS5



Limit and Enclosed Switches

Rotary Actuated Switches

HDLS Series



Side Rotary

Top Rotary

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:

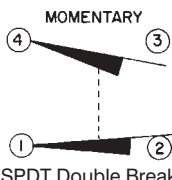
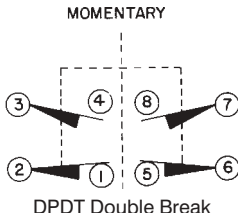
- Shaft of side rotary heads facing front of switch (label side).
- Head adjusted for both clockwise and counterclockwise operation.
- Light on indicator versions wired to N.O. circuit.

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					
			Side Rotary			Top Rotary		
			Standard	Low Differential	5° Pretravel	Low Torque	Low Differential Low Torque	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		

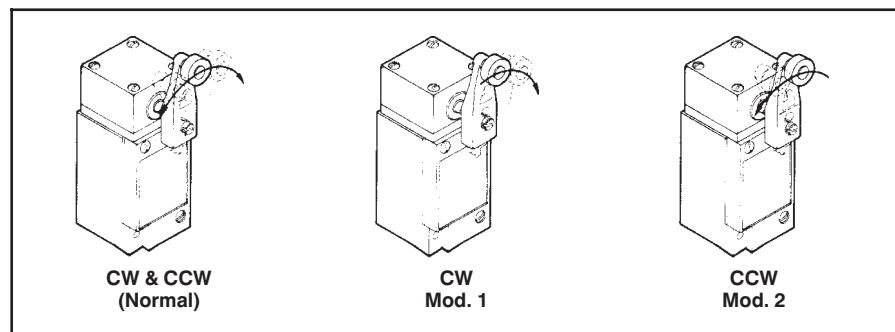
*** Completely fluorocarbon-sealed switches are preferred for use in temperatures above 200°F (93°C). Refer to page A42.

Limit/Enclosed

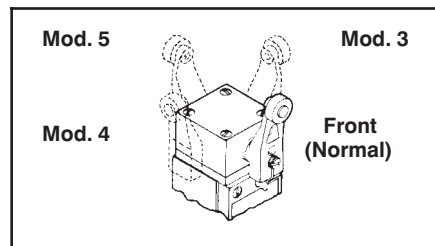
Rotary Actuated Switches

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

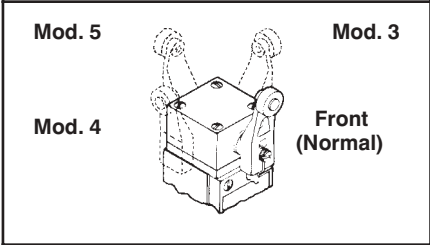


ASSEMBLY MODIFICATIONS
Switches in the order guide, below, have the operating shaft facing front. If another orientation is desired, add a number from the drawing to the catalog listing.

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 preloaded 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

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Limit and Enclosed Switches

Levers for Rotary Actuated Switches

HDLS Series

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.

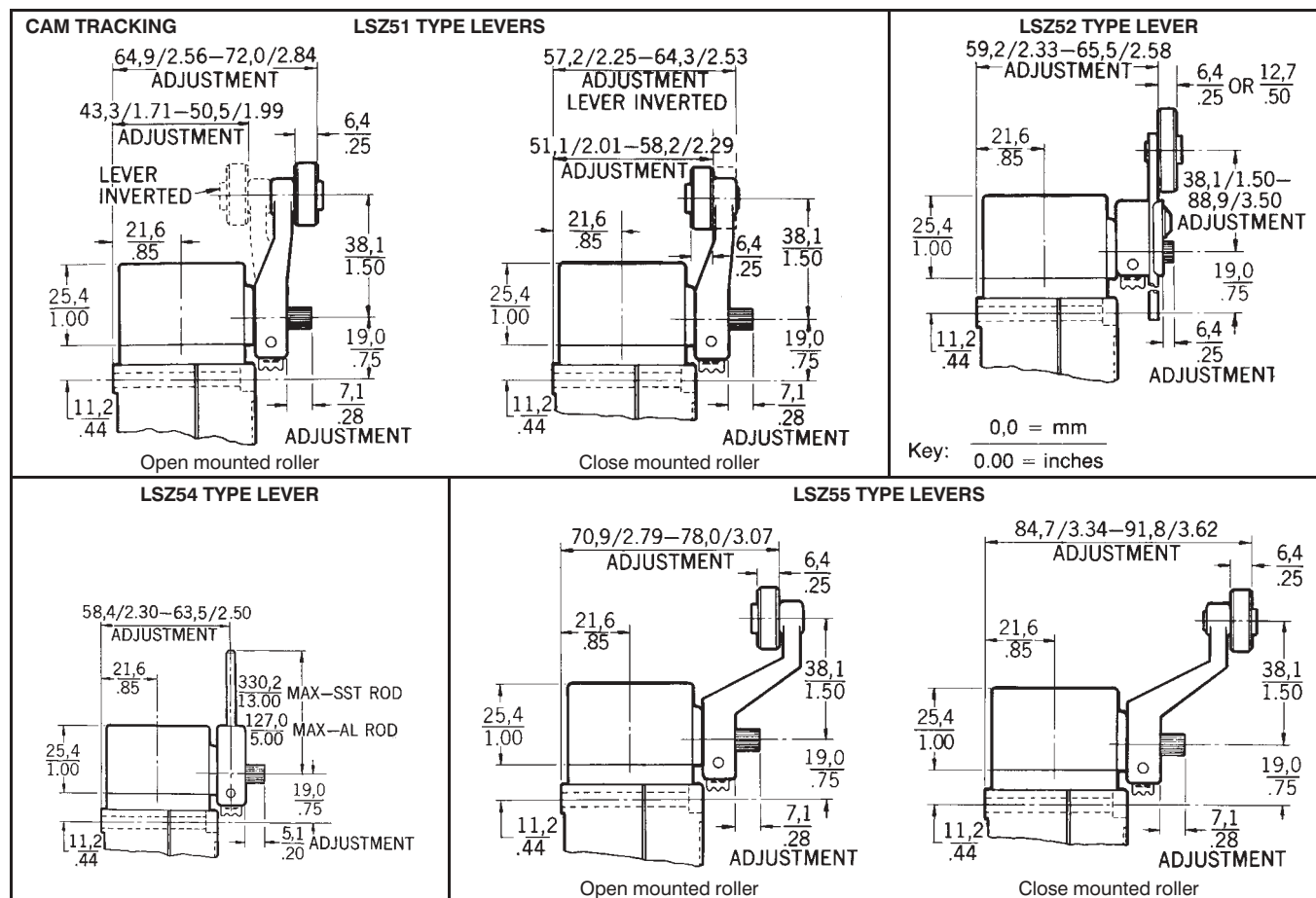
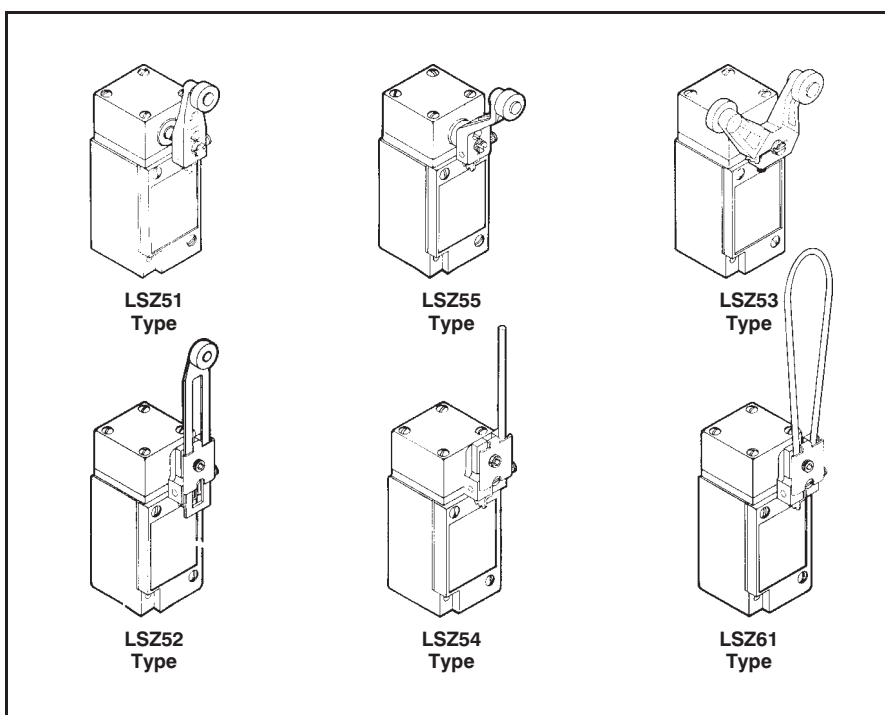
LSZ53 yoke roller levers are used with side rotary maintained switches, where a reciprocating actuator operates the switch in one direction and reverses it when moving in the other direction.

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.

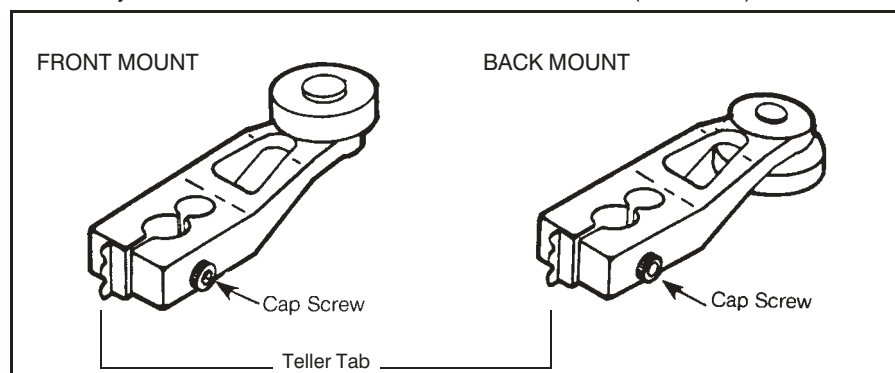


NOTE: Shaft dia. is .29 in.

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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 5/64-inch allen wrench.

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

TO ORDER LEVERS SEPARATELY

Catalog listings in the shaded column of the order guides are used when ordering levers as separate items, i.e., LSZ51A, LSZ53B, etc.

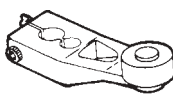
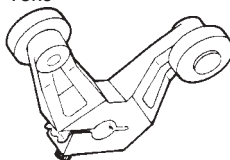
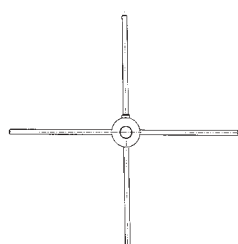
TO ORDER LEVERS WITH SWITCHES

Refer to the lefthand shaded column with dash-number suffixes to order lever and switches together. Add the appropriate suffix to the switch catalog listing.

Example:

Catalog Listing LSA1A-1B is an LSA1A switch with a standard lever which has the steel roller mounted on the front side.

ORDER GUIDE

Type	Radius (in.)	Roller Mounted On This Side Of Lever	Dia. in.	Width in.	Material	To Order Lever With Switch, Add Suffix To Switch Catalog Listing	Use These Catalog Listings To Order Levers Separately
LSZ51 Series Std. Roller Lever 	1.5	Front	.75	.25	Nylon	-1A	LSZ51A
	1.5	Front	.75	.25	Steel	-1B	LSZ51B
	1.5	Back	.75	.25	Nylon	-1C	LSZ51C
	1.5	Back	.75	.25	Steel	-1D	LSZ51D
	1.5	Front	1.0	.50	Nylon	-1F	LSZ51F
	1.5	Front	1.5	.25	Nylon	-1G	LSZ51G
	1.5	Back	1.0	.50	Nylon	-1J	LSZ51J
	1.5	Back	.75	.25	Ball Bearing	-1L	LSZ51L
	1.5	Back	.75	1.30	Nylon	-1M	LSZ51M
	1.5	Back	.75	.375	Stainless	-1T	LSZ51T
	1.5	Front	.75	.50	Nylon	-1P	LSZ51P
	1.5	Front	1.59	.25	Nylon	-1R	LSZ51R
	1.5	—	—	—	Less Roller	—	LSZ51
LSZ53 Series Yoke  Back view of LSZ53E	1.5	Front-Back	.75	.25	Nylon	-3A	LSZ53A
	1.5	Front-Back	.75	.25	Steel	-3B	LSZ53B
	1.5	Front-Front	.75	.25	Steel	-3D	LSZ53D
	1.5	Back-Front	.75	.25	Nylon	-3E	LSZ53E
	1.5	Back-Back	.75	.25	Nylon	-3S	LSZ53S
	1.5	Back-Back	.75	.25	Steel	-3P	LSZ53P
	1.5	Back-Front	.75	.25	Steel	-3U	LSZ53U
	1.5	Back-Front	.75	1.25	Nylon	-3M	LSZ53M
	1.5	—	—	—	Less Rollers	—	LSZ53
	1.5	—	—	—	Less Roller	—	LSZ55
LSZ55 Series Offset 	1.5	Back	.75	.25	Nylon	-5A	LSZ55A
	1.5	Back	.75	.25	Steel	-5B	LSZ55B
	1.5	Front	.75	.25	Nylon	-5C	LSZ55C
	1.5	Front	.75	.25	Steel	-5D	LSZ55D
	1.5	Front	.75	.50	Nylon	-5E	LSZ55E
	1.5	Front	1.5	.25	Nylon	-5K	LSZ55K
	1.5	Front	1.0	.50	Nylon	-5F	LSZ55F
LSZ69 Series* Spoke 	—	—	6.0	—	Stainless (fixed)	—	LSZ69AA
	—	—	6.0	—	Stainless (spokes replaceable)	—	LSZ69BA

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

Limit/Enclosed

Levers for Rotary Actuated Switches

METRIC CONVERSION

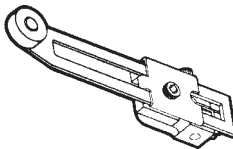
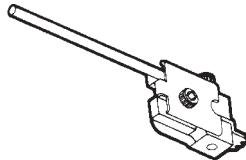
.25 in.	=	6,35 mm
.5 in.	=	12,7 mm
.625 in.	=	15,9 mm
.75 in.	=	19,1 mm
1.0 in.	=	25,4 mm
1.5 in.	=	38,1 mm
2.0 in.	=	50,8 mm
2.5 in.	=	63,5 mm
3.0 in.	=	76,2 mm
4.8 in.	=	122 mm
5.0 in.	=	127 mm
6.0 in.	=	152 mm
12.0 in.	=	305 mm

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

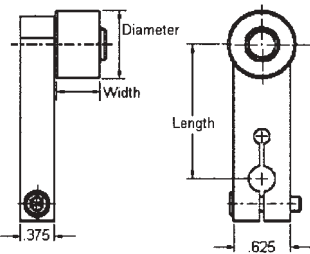
Type	Radius (in.)	Roller Mounted On This Side Of Lever	Dia. in.	Width in.	Material	To Order Lever With Switch, Add Suffix To Switch Catalog Listing	Use These Catalog Listings To Order Levers Separately	
	LSZ52 Series	1.5-3.5	Back	.75	.25	Nylon	-2A	LSZ52A
	Adjustable	1.5-3.5	Back	.75	.25	Steel	-2B	LSZ52B
	Radius	1.5-3.5	Front	.75	.25	Nylon	-2C	LSZ52C
		1.5-3.5	Front	.75	.25	Steel	-2D	LSZ52D
		1.5-3.5	Front	.75	1.30	Nylon	-2E	LSZ52E
		1.5-3.5	Front	1.0	.5	Nylon	-2J	LSZ52J
		1.5-3.5	Front	1.5	.25	Nylon	-2K	LSZ52K
		1.5-3.5	Front	.75	.25	Ball Bearing	-2L	LSZ52L
		1.5-3.5	Front	2.0	.25	Nylon	-2M	LSZ52M
		1.5-3.5	Front	.75	.5	Nylon	-2N	LSZ52N
					Less Roller Hub Only	—	LSZ52	
						—	LSZ54	
LSZ68 Series	12.0	—	.25	—	Delrin Rod w/Spring	—	LSZ68	
Spring/Rod	16.0	—	.25	—	Delrin Rod w/Spring	—	LSZ617	
	LSZ54 Series	5.5	—	—	Aluminum	-4M	LSZ54M	
	Rod	13.0	—	—	Stainless Steel	-4N	LSZ54N	
		20.0	—	—	Delrin Rod	-4P	LSZ54P	
		12.0	—	—	Spring Wire	-4R	LSZ54R	
		4.8	—	—	Flexible Cable Hub Only	-4V	LSZ54V*	
						—	LSZ54	
	LSZ61 Series	6" Flexible Loop/Cap Screw			Nylatron	—	LSZ61	
	Flexible Loop	9.5" Flexible Loop/Cap Screw			Hub Only	—	LSZ618	
		(measured from center line of shaft hole to tip of actuator)				—	LSZ54	
	LSZ60 Series	Front	.75	.25	Nylon	—	LSZ60A	
	One Way Roller Lever	Front	.75	.25	Steel	—	LSZ60B	

See page A60 for dimensions.

* Hub not available separately.

Levers for Rotary Actuated Switches

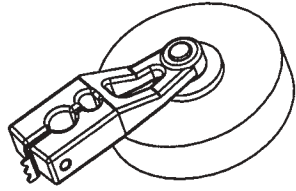
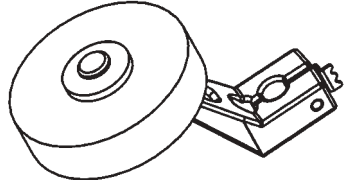
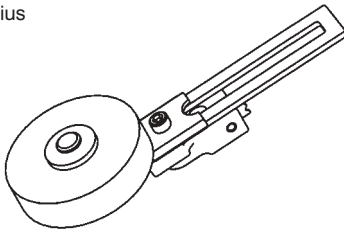
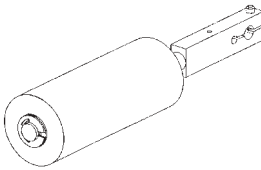
FIXED LENGTH LEVERS ORDER GUIDE

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.

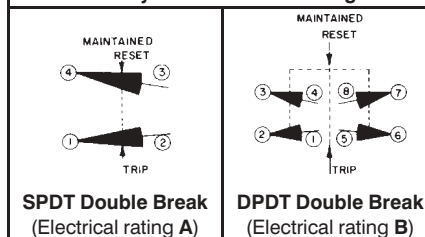
Refer to facing page to specify modifications to these assembled conditions.

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.

Circuitry For Maintained Plunger



SPDT Double Break
(Electrical rating A)

DPDT Double Break
(Electrical rating B)

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	Plug-in 1/2" Conduit	—	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.

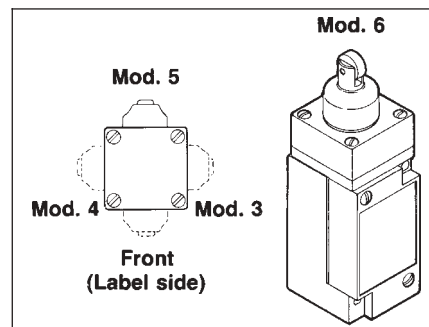
Mod.

- 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.

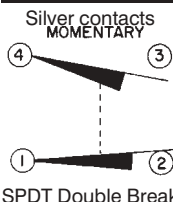
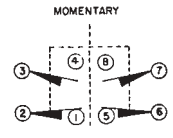


Wobble Actuated Switches

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	—	—	—
 SPDT Double Break	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
	A	Non plug-in 1/2" Conduit	LSJ3K-7A	LSJ3K-7M	LSK3K-8A	LSJ3K-7N	LSK3K-8C
 DPDT Double Break	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

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

Switches for Special Applications

HDLS Series



NOTE: LSS1H and LST1H switches are usually mounted with the lever down. Heavier levers, such as the LSZ54N (shown) and LSZ52D, should be used to enable gravity to help restore them to the free position. These levers are described on page A38.

GRAVITY RETURN SIDE ROTARY SWITCHES

LSS1H gravity return side rotary limit switches have no return spring mechanism. The weight of the actuating lever must provide the force to restore it to the free position.

The extremely light 5 in. oz. max. operating torque is useful in conveyor applications, since it enables operation by small

or lightweight objects. Because the head is unsealed, the LSS1H is classed as NEMA 1. However, the switch cavity is sealed to protect the contacts.

The LSS1H has the plug-in body style, with a ½ in. conduit opening.

Circuitry is SPDT double break. Refer to electrical rating **B**, page A34.

ORDER GUIDE (Momentary action)

Operating Torque Max.	Differential Travel Max.	Total Travel No Stop	Catalog Listing
0,035 Nm 5 in. oz.	12°	360°	LSS1H

Nm = Newton meters

EXTRA LOW TORQUE SIDE ROTARY SWITCHES

LST1H extra low torque side rotary limit switches have a low force return spring and a maximum operating torque of 12 in. oz. It is NEMA 1, because of an unsealed head. But, as with the LSS1H, the switch cavity is sealed.

The LST1H has a plug-in body style, with a ½ in. conduit opening.

Circuitry is SPDT double break. Refer to electrical rating **B**, page A34.

ORDER GUIDE (Momentary action)

Operating Torque max.	Pre-Travel max.	Over-Travel min.	Differential Travel max.	Total Travel ref.	Catalog Listing
0,085 Nm 12 in. oz.	15°	60°	5°	85° nom.	LST1H

Nm = Newton meters

SPECIFYING GUIDE FOR:

HIGH TEMPERATURE-CHEMICAL RESISTANT SWITCHES

Completely fluorocarbon (FC)-sealed HDLS limit switches have a full FC body gasket covering the switch cavity. Rotary types have an extra FC seal on the operating shaft, while plunger versions have FC boot seals.

They are for use in applications where the environment includes fire-resistant synthetic fluids. In addition to most all fluids, the FC sealed switches may be used with such industrial fluids as Cellulube, Fyrquell, Houghto-Safe, Pydraul, and other special cutting and hydraulic oils. **For seal performance chart see page A56.** The additional FC seals also promote longer operating life for rotary actuated HDLS switches in applications where the temperatures are normally 10° to 250°F (–12 to 121°C). If prewired with cable, then temperature limits are 221°F (105°C) dry and 140°F (60°C) wet.

How to order

Insert the additional letters **Y** and **C** in the appropriate places in the standard catalog listing as shown in the example below.

Example:
LSA1A — standard side rotary plug-in switch
LSYAC1A — Completely FC-sealed version of LSA1A

LOW TEMPERATURE SWITCHES

All forms of HDLS limit switches are also available in low temperature construction.

Design changes include fluorosilicone diaphragm, shaft seals, and external boot seal (where applicable) plus a low temperature lubricant. If prewired with cable, temperature limits are 14°F (–10°C) flex and 22°F (–30°C) no flex. **The temperature ranges for specific switches see page A56.**

How to order

A low temperature version of any HDLS limit switch shown in the order guide can be specified by inserting the additional letters **Y** and **B** into the appropriate place in the standard switch listing as shown in the example below.

Example:
LSA1A — standard side rotary plug-in switch
LSYAB1A — low temperature version of LSA1A

FACTORY SEALED PRE-WIRED LIMIT SWITCHES

FEATURES

- Prewired with 6 ft STOOW-A cable or 4, 5 or 9-pin connectors (other lengths available)
- Wire entry area completely factory sealed
- (Cable version) NEMA 1, 6, 6P, 12
- (Connector version) NEMA 1, 6, 6P, 12 13

How to order

To order factory sealed switches, add the modification codes shown below to standard HDLS listings:

Circuitry	Cable	½" Connector
SPDT	C	A (4 pin mini) B (5 pin mini) DD (4 pin micro)
DPDT	M	R (9 pin)

Example: LSA1AC — LSA1A with 6 ft of 5 conductor STOOW-A cable.
LSJ2BM-7N — LSJ2B-7N with 6 ft of 9 conductor STOOW-A cable.
LSA1AB — LSA1A with 5 pin receptacle.
LSA1ADD — 4 pin micro-change connector.

NOTE: Connector versions available with ½ in. conduit tap only. Refer to page A46 for pin-out and mating connector. Refer to page A58 for dimensions.

Limit and Enclosed Switches

Switches for Special Applications

HIGH CAPACITY LIMIT SWITCH



This series has a wide gap contact block that handles a higher make/break DC load. In addition, a special lever arm has a serrated shaft hole and a capscrew with locking nut for attaching the lever to the rotary shaft. (See inset.) This assures a firm grip on the operating shaft and positive retention of the lever adjustment.

FEATURES

- High DC current ratings
- 20 amp rating at 120 VAC (single pole)
- Plug in or non-plug in
- Positive retention lever arm

The need for precise operation, coupled with severe environmental conditions places rigid demands on any control. MICRO SWITCH satisfies these demands with its high capacity Heavy Duty Limit Switch, which is designed to perform reliably under these conditions.

ELECTRICAL RATINGS

Circuitry	Voltage	Single Pole		Double Pole	
 DPDT Double Break		Resistive Load	Inductive Load	Resistive Load	Inductive Load
	125 VDC	2.0A	1.0A	1.0A	0.4A
	250 VDC	0.7A	0.4A	0.4A	0.2A
	120 VAC	20A	20A	10A	10A
 SPDT Double Break	240 VAC	15A	15A	7.5A	7.5A
	480 VAC	10A	10A	5A	5A
	600 VAC	5A	5A	2.5A	2.5A

Maximum operating rate - 15 operations per minute

ORDER GUIDE INCLUDING LEVER

Catalog Listing	Description
LSQ051	Double pole, non-plug-in 3/4" Conduit opening
LSQ052	Double pole, plug-in 3/4" Conduit opening
LSQ053	Single pole, non-plug-in 1/2" Conduit opening
LSQ054	Single pole, plug-in 1/2" Conduit opening
LSZ616	Replacement lever for above listings

Limit/Enclosed

MANIFOLD MOUNT SWITCHES



Manifold mount HDLS limit switches have an opening for the lead wires through the gasketed mounting base. The gasket maintains the oil tightness when the switch is surface mounted.

The manifold mount switches are available in either single-pole or double-pole forms of the plug-in types only. Mounting and wiring of the single-pole and double-pole forms is completely interchangeable. Any operating head type can be provided.

Catalog listings of plug-in HDLS switches in the order guides can be converted to specify manifold mount versions.

SINGLE-POLE CATALOG LISTINGS

Convert a single-pole, standard duty rated switch listing to specify manifold mount by changing the fifth character in the catalog listing to **F**.

Example:

LSA1A — standard side rotary plug-in switch

LSA1F — above switch in manifold mount

Convert a single-pole, electronic duty switch listing by changing the fifth character in the catalog listing to **G**.

Example:

LSA1J — standard side rotary plug-in switch

LSA1G — above switch in manifold mount

LSZ4015 — plug-in base only.

DOUBLE-POLE CATALOG LISTINGS

Convert double-pole catalog listings (except LSL sequential action and LSM center neutral types) to specify manifold mount by changing the fourth and fifth characters in the catalog listing to **2F**.

Example:

LSA2B — standard side rotary plug-in switch

LSA2F — above switch in manifold mount

Change the fourth and fifth characters of LSM listings to **2H**.

Example:

LSM2D — center neutral switch

LSM2H — above switch in manifold mount

Change the fourth and fifth characters of LSL listings to **2G**.

Example:

LSL2C — sequential action switch

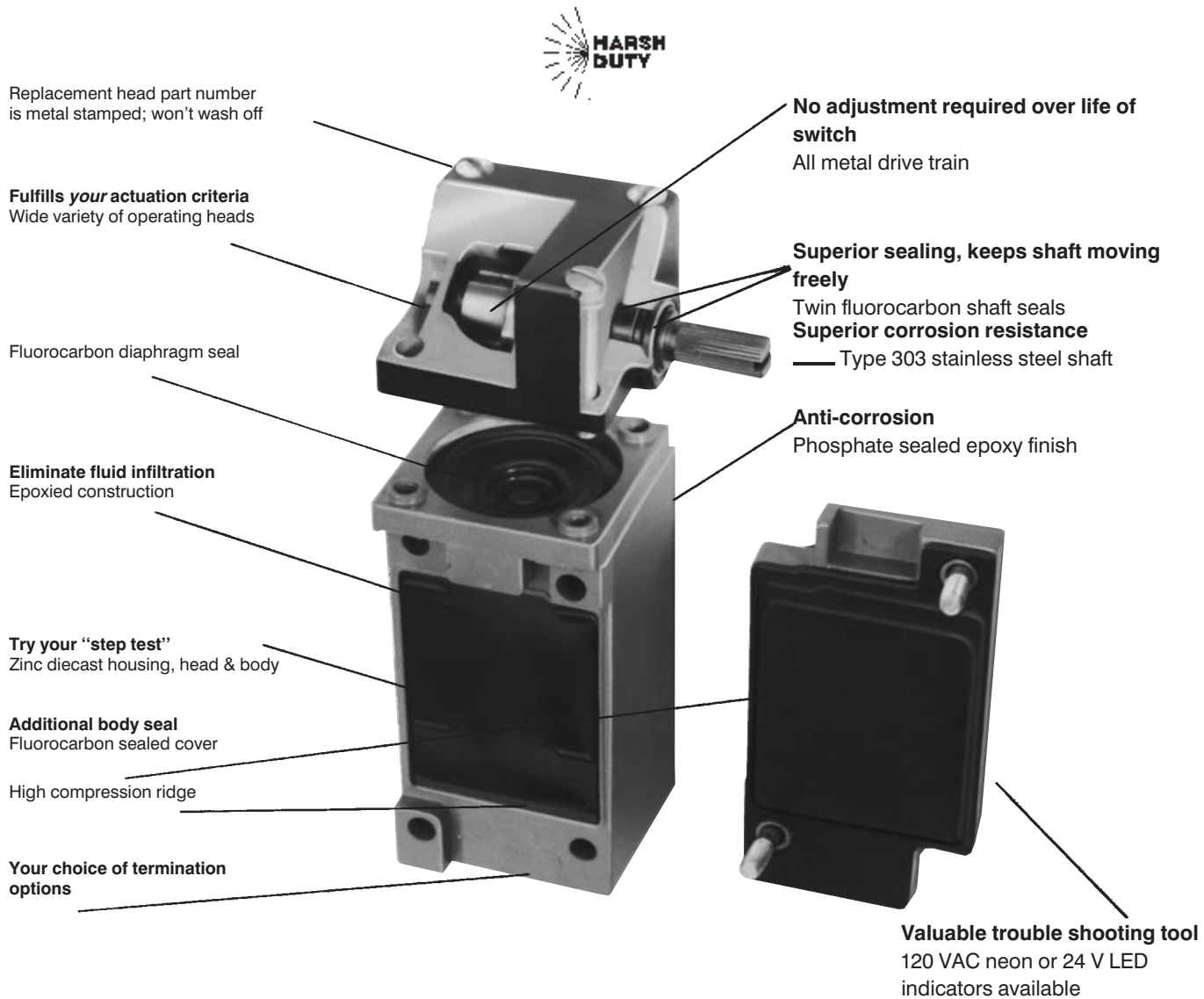
LSL2G — above switch in manifold mount

LSZ4016 — plug-in base only.

Limit and Enclosed Switches

Harsh Duty Epoxied Limit Switch

HDLS Series



Exceeds NEMA 6P

Machine processes and their associated fluids demand **more** than the standard NEMA 6P switch provides.

The Harsh Duty Limit Switch meets the environmental challenges found in actual automotive production facilities and food and beverage lines.

The MICRO SWITCH Harsh Duty Limit Switch is **made** for environments that surpass NEMA 6P test criteria.

Limit and Enclosed Switches

Fully Potted Limit Switches

HDLS Series



FEATURES

- Excellent sealing capability for withstanding Harsh Duty food and beverage wash downs and severe machine tool environments.
- Switch cavity epoxy filled
- Extra diaphragm sealing
- 12' STOOW-A cable or connector version (other lengths available)
- (Cable versions) NEMA 1, 6, 6P, 12
- (Connector versions) NEMA 1, 6, 6P, 12, 13
- All fluorocarbon seals (low temp. available)
- Exceeds NEMA 6P
- UL Listed, file #E37138
- CSA Certified, file #LR57326

The Totally Potted HDLS provides an extra degree of protection in harsh environments by sealing the basic switch cavity with epoxy. These switches are the same as the non plug-in HDLS except that the entire switch cavity is filled with epoxy in addition to the conduit entrance, and the switches are preleaded, either with cable or connectors.

HOW TO ORDER

Only the non plug-in HDLS switches can be converted to a Fully-Potted HDLS.

All indicators are wired to the N.O. terminals. (N.C. indicator available page A34.)

Limit/Enclosed

ORDER GUIDE – ROTARY ACTUATED SWITCHES

Circuitry	Body Style	Catalog Listing						
		Side Rotary						
		Standard	Low D.T.	5° P.T.	Low Torque	Low D.T. Low Torque	Maintained	Top Rotary High O.T. (1)
SPDT Double-Break Elect. Rating: A	Preleaded w/cable	LSYAC3KP-FP	LSYPC3KP-FP	LSYUC3KP-FP	LSYRC3KP-FP	LSYHC3KP-FP	LSYNC3KP-FP	LSYBC3KP-FP
	Pre-wired w/connector	LSYAC3KQ-FP	LSYPC3KQ-FP	LSYUC3KQ-FP	LSYRC3KQ-FP	LSYHC3KQ-FP	LSYNC3KQ-FP	LSYBC3KQ-FP
	Preleaded w/cable 120 VAC Neon	LSYAC5KP-FP	LSYPC5KP-FP	LSYUC5KP-FP	LSYRC5KP-FP	LSYHC5KP-FP	LSYNC5KP-FP	LSYBC5KP-FP
	Pre-wired w/connector 120 VAC Neon	LSYAC5KQ-FP	LSYPC5KQ-FP	LSYUC5KQ-FP	LSYRC5KQ-FP	LSYHC5KQ-FP	LSYNC5KQ-FP	LSYBC5KQ-FP
DPDT Double-Break Elect. Rating: B	Preleaded w/cable	LSYAC4LX-FP	LSYPC4LX-FP	LSYUC4LX-FP	LSYRC4LX-FP	LSYHC4LX-FP	LSYNC4LX-FP	LSYBC4LX-FP
	Pre-wired w/connector	LSYAC7LR-FP	LSYPC7LR-FP	LSYUC7LR-FP	LSYRC7LR-FP	LSYHC7LR-FP	LSYNC7LR-FP	LSYBC7LR-FP

(1) Top rotary version

ORDER GUIDE – SIDE ROTARY (Continued)

Circuitry	Body Style	Catalog Listing
CENTER NEUTRAL (Momentary) SPDT Double Break each direction Electrical Rating: B	Preleaded w/cable	LSYMC4NX-FP
	Pre-wired w/connector	LSYMC7NR-FP

ORDER GUIDE – SIDE ROTARY (Continued)

Circuitry	Body Style	Catalog Listing
SEQUENCE (Momentary) (2) SPDT Double Break with 10° between operation Electrical Rating: B	Preleaded w/cable	LSYLC4MX-FP
	Pre-wired w/connector	LSYLC7MR-FP

For low temperature applications, substitute “Y_B” for the “Y_C”.

See page A42 for temperature ratings.

See pages A57-A63 for drawings.

See pages A33 and A35 for operating characteristics.

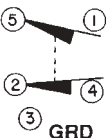
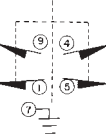
Other styles of fully potted limit switches are available than shown in this catalog. Consult the 800 number for further information.

Limit and Enclosed Switches

HDLS Series

Fully Potted Limit Switches

ORDER GUIDE – TOP PLUNGERS AND WOBBLE ACTUATORS

Circuitry	Body Style	Catalog Listing			
		Top Plungers			Wobble Actuators
		Plain	Roller	Adjustable	
 GRD SPDT Double-Break Elect. Rating: A	Preleaded w/cable	LSYCC3KP-FP	LSYDC3KP-FP	LSYVC3KP-FP	LSYJC3KP-**FP
	Pre-wired w/connector	LSYCC3KQ-FP	LSYDC3KQ-FP	LSYVC3KQ-FP	LSYJC3KQ-**FP
	Preleaded w/cable 120 VAC Neon	LSYCC5KP-FP	LSYDC5KP-FP	LSYVC5KP-FP	LSYJC5KP-**FP
	Pre-wired w/connector 120 VAC Neon	LSYCC5KQ-FP	LSYDC5KQ-FP	LSYVC5KQ-FP	LSYJC5KQ-**FP
 DPDT Double-Break Elect. Rating: B	Preleaded w/cable	LSYCC4LX-FP	LSYDC4LX-FP	LSYVC4LX-FP	LSYJC4LX-**FP
	Pre-wired w/connector	LSYCC7LR-FP	LSYDC7LR-FP	LSYVC7LR-FP	LSYJC7LR-**FP

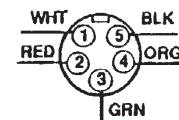
**WOBBLE ACTUATOR CODE:

		Head Style
7A	Delrin Rod	J
7M	Spring Wire	J
8A	Cat Whisker	K
7N	Cable	J
8C	Coil Spring	K

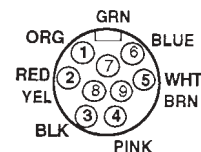
WIRING DIAGRAMS

Connectors = Numbers
Cables = Colors

Single-Pole



Double-Pole



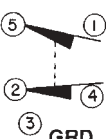
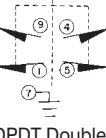
Pin numbers in wiring diagrams correspond to terminal numbers in circuitry diagrams on pages A45 and A46 only.

Electrical Ratings: Connector Versions

Mini	600 VAC, 7A
Micro	300 VAC, 3A

For cable versions see page A34.

ORDER GUIDE – SIDE PLUNGERS

Circuitry	Body Style	Catalog Listing			
		Side Plungers			Maintained
		Plain	Roller	Adjustable	
 GRD SPDT Double-Break Elect. Rating: A	Preleaded w/cable	LSYEC3KP-FP	LSYFC3KP-FP	LSYWC3KP-FP	LSYGC3KP-FP
	Pre-wired w/connector	LSYEC3KQ-FP	LSYFC3KQ-FP	LSYWC3KQ-FP	LSYGC3KQ-FP
	Preleaded w/cable 120 VAC Neon	LSYEC5KP-FP	LSYFC5KP-FP	LSYWC5KP-FP	LSYGC5KP-FP
	Pre-wired w/connector 120 VAC Neon	LSYEC5KQ-FP	LSYFC5KQ-FP	LSYWC5KQ-FP	LSYGC5KQ-FP
 DPDT Double-Break Elect. Rating: B	Preleaded w/cable	LSYEC4LX-FP	LSYFC4LX-FP	LSYWC4LX-FP	LSYGC4LX-FP
	Pre-wired w/connector	LSYEC7LR-FP	LSYFC7LR-FP	LSYWC7LR-FP	LSYGC7LR-FP

MOUNTING DIMENSIONS (For reference only) see page A58

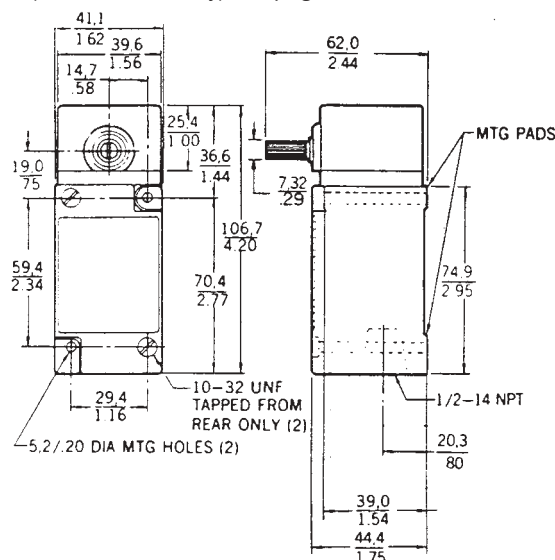
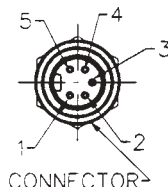
(2) All indicators wired to N.O. terminals.

Temperature Ratings:

	Dry	Wet
Connector version:	250° F (121° C)	212° F (100° C)
Cable version:	221° F (105° C)	140° F (60° C)

Mating Female Connectors

5 Pin		9 Pin
41306	3' cable	47001
41307	6' cable	47002
41308	12' cable	47003



Limit and Enclosed Switches

Stainless Steel

HDLS Series



FEATURES

- Corrosion-resistant stainless steel non-plug in body, head and rotary shaft
- Stainless steel levers
- Fluorocarbon seals
- -12°C to +121°C (10°F to +250°F)
- UL Listed, file #E37138
- CSA Certified, file #LR57326
- NEMA 1, 3, 3R, 4 4X, 6, 6P, and 13

The HDLS is available in all stainless steel versions. These switches are designed for use in highly corrosive environments such as petrochemical plants, food processing plants, shipboard, and dockside locations. The type 316 cast stainless steel body is designed to minimize crevices where food particles could become trapped. The actuator, operating head, and screws are also stainless steel. All seals are fluorocarbon to provide excellent chemical resistance and to withstand operating temperatures up to 121°C (250°F) and pressurized steam cleaning. Preleaded and epoxy filled versions are also available. Contact Freeport or nearest branch office for details. Interchangeable with standard HDLS mounting.

Limit/Enclosed

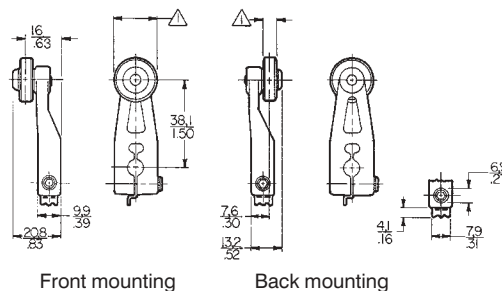
ORDER GUIDE STAINLESS STEEL SWITCHES

Head Type	Action	Circuitry	Catalog Listing*
Side rotary standard	Momentary	SPDT (1 N.O.-1 N.C.)	LS2A4K
Side rotary standard	Momentary	SPDT (1 N.O.-1 N.C.)	LS2YAB4K (Low Temp)
Side rotary low torque	Momentary	SPDT (1 N.O.-1 N.C.)	LS2H4K
Side rotary standard	Momentary	DPDT (2 N.O.-2 N.C.)	LS2A4L
Side rotary low torque	Momentary	DPDT (2 N.O.-2 N.C.)	LS2H4L
Side rotary standard	Momentary	SPNC (1 N.C. Direct Acting)	LS2A3N
Side rotary low torque	Momentary	SPNC (1 N.C. Direct Acting)	LS2H3N
Side rotary Center neutral standard	Momentary	SPDT each dir. (1 N.O.-1 N.C.) CW (1 N.O.-1 N.C.) CCW	LS2M4N
Side rotary	Maintained	SPDT (1 N.O.-1 N.C.)	LS2N3K (½" conduit)
Side plunger	Momentary	SPDT (1 N.O.-1 N.C.)	LS2E4K
Side plunger	Momentary	DPDT (2 N.O.-2 N.C.)	LS2E4L
Side roller plunger	Momentary	SPDT (1 N.O.-1 N.C.)	LS2F4K
Side roller plunger	Momentary	DPDT (2 N.O.-2 N.C.)	LS2F4L
Top roller plunger	Momentary	SPNC (1 N.C. Direct Acting)	LS2D3N
Top roller plunger	Momentary	SPDT (1 N.O.-1 N.C.)	LS2D4K
Top roller plunger	Momentary	DPDT (2 N.O.-2 N.C.)	LS2D4L

*SPDT 6 foot preleaded versions: add a **C** to the catalog listing. DPDT 6 foot preleaded versions: add **M** to the catalog listing. Example: LS2A4KC. For custom lead lengths, contact the 800 number.

ORDER GUIDE STAINLESS STEEL LEVERS

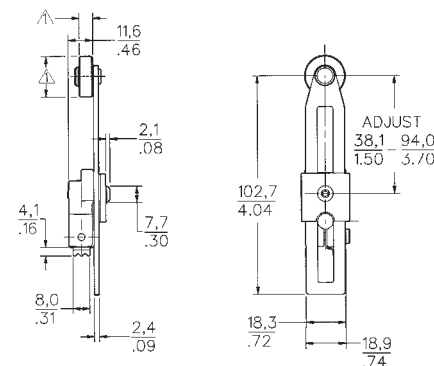
	Radius (In.)	Dia. (In.)	Width (In.)	Catalog Listing
Std. Roller Lever	1.5	.75	.25	LS2Z51B
Adjustable Radius	1.5-3.5	.75	.25	LS2Z52B
Rod	13.0	—	—	LS2Z54N



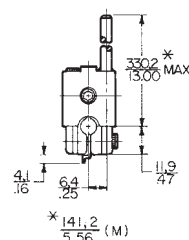
Front mounting

Back mounting

LS2Z52B



LS2Z54N



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

Stainless Steel

OPERATING CHARACTERISTICS

	Head Type				
	Side Rotary Standard	Low Torque	Side Plunger Plain	Roller	Top Roller Plunger
Pretravel (max.)	15°	—	2,54 mm 1.00 in.	2,54 mm 1.00 in.	1,78 mm 0.70 in.
Differential Travel (max.)	SPDT 5° DPDT 7°	SPDT 3° DPDT 4°	0,64 mm .025 in.	0,64 mm .025 in.	0,38 mm .015 in.
Overtravel (min.)	60°	68°	4,83 mm .190 in.	4,83 mm .190 in.	4,83 mm .190 in.
Operating Force (max.)	—	—	26,7 Nm 6.0 lb.	26,7 Nm 6.0 lb.	17,8 Nm 4.0 lb.
Operating Torque (max.)	,45 Nm 4 in.lb.	,19 Nm 1.7 in.lb.	—	—	—
Operating Point	—	—	33 ± 76 mm 1.3 ± .03 in.	44,1 ± 1,02 mm 1.73 ± .04 in.	55,9 ± 1,02 mm 2.20 ± .04 in.

ELECTRICAL RATINGS

10 amps continuous carry

AC Volts

Pilot duty: 600 VAC, 720 VA

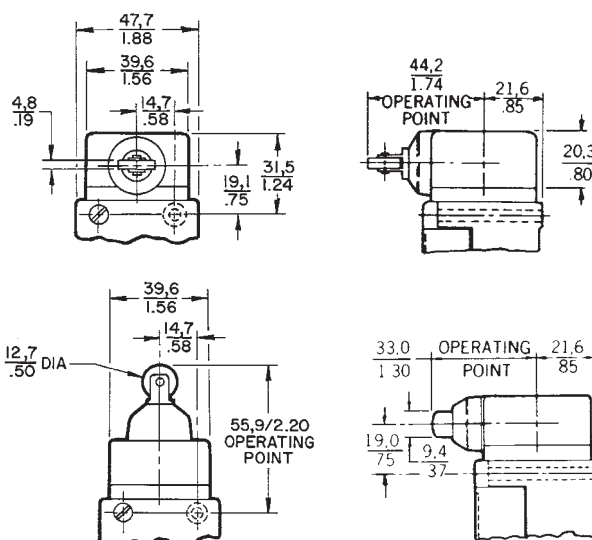
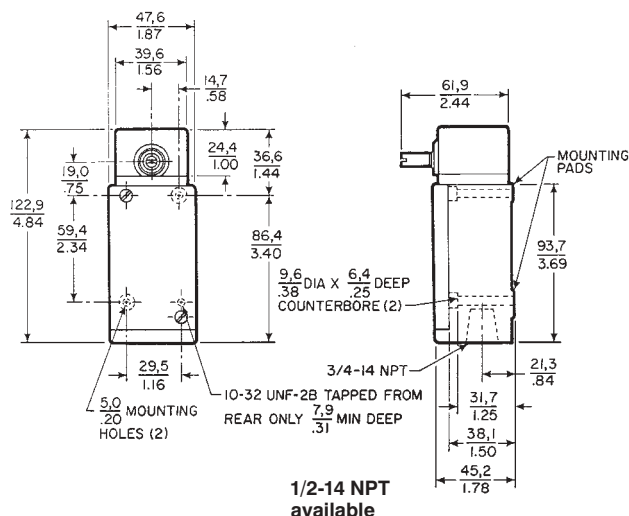
Electrical Rating	Circuitry	VAC	Amps at 0.35 Power Factor	
			Make	Break
A	Single-Pole Double-Throw	120	60	6
		240	30	3
		480	15	1.5
		600	12	1.2
B	Double-Pole Double-Throw	120	30	3
		240	15	1.5
		480	7.5	0.75
		600	6	0.60
D	Single-Pole Single-Throw Normally Closed	120	60	6
		240	30	3
		480	15	1.5
		600	12	1.2

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

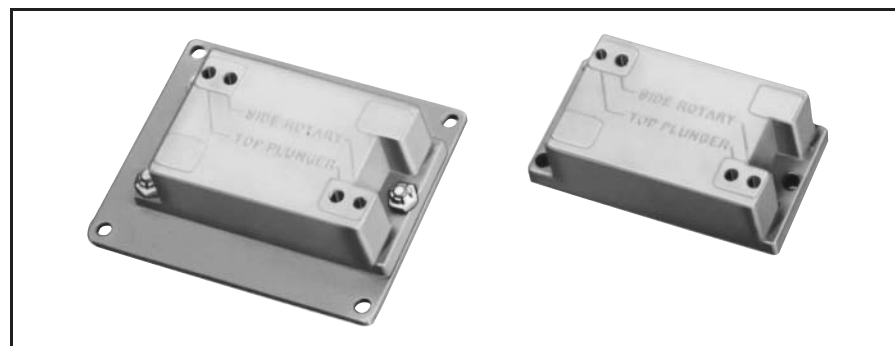
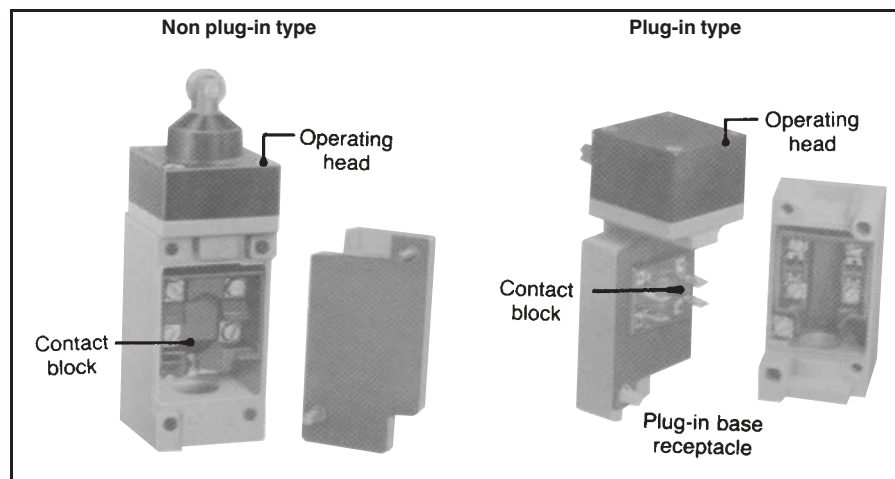
MOUNTING DIMENSIONS (For reference only)



Limit and Enclosed Switches

Modification and Replacement Parts

HDLS Series



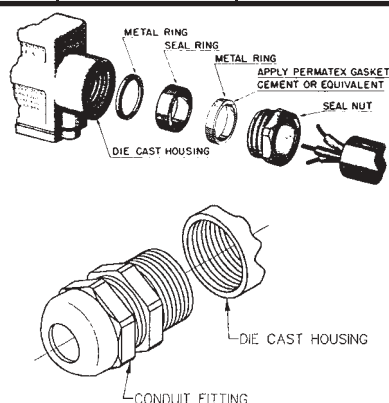
REPLACEMENT WOBBLE ACTUATORS

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	.200" - .345" ½ NPT
2PA18	.270" - .460" ½ NPT
2PA19	.455" - .625" ¾ NPT
2PA20	.545" - .705" 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.

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Replacement Parts

PLUG-IN TYPE (Continued)

5

Limit/Enclosed

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

Replacement Parts

5

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

Honeywell • MICRO SWITCH Sensing and Control • 1-800-537-6945 USA • +1-815-235-6847 International • 1-800-737-3360 Canada

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.

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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

Limit and Enclosed Switches

HDLS Series

Temperature and Performance Data

TABLE 1—TEMPERATURE LIMITS

	Standard HDLS				Low Temperature HDLS				High Temperature HDLS (Fluorocarbon Sealed*)		
	Low Limit		High Limit		Low Limit		High Limit		Low Limit		High Limit
	10°F -12°C	30°F -1°C	200°F 93°C	250°F 121°C	-40°F -40°C	-20°F -29°C	200°F 93°C	250°F 121°C	10°F -12°C	30°F -1°C	250°F 121°C
LSA—Side Rotary Momentary	X			X	X			X	X		X
LSB—Top Rotary		X		X		X		X		X	X
LSC—Top Plain Plunger	X		X			X	X		X		X
LSD—Top Roller Plunger	X		X			X	X		X		X
LSE—Side Plain Plunger	X		X			X	X		X		X
LSF—Side Roller Plunger	X		X			X	X		X		X
LSG—Side Plunger Maintained		X	X			X	X			X	X
LSH—Side Rotary, Low P.T., Low Torque		X		X		X		X		X	X
LSJ—Wobble Stick	X		X		X			X	X		X
LSK—Cat Whisker	X		X			X		X	X		X
LSL—Side Rotary Sequence	X			X	X			X	X		X
LSM—Side Rotary Center Neutral		X		X	X			X		X	X
LSN—Side Rotary Maintained		X		X		X		X		X	X
LSP—Side Rotary, Low Pretravel	X			X	X			X	X		X
LSR—Side Rotary, Low Torque		X		X		X		X		X	X
LSV—Top Adjustable Plunger	X		X			X	X		X		X
LSW—Side Adjustable Plunger	X		X			X	X		X		X

*For HDLS application wherein the upper temperature limit is normally above 200°F (93°C), much longer switch life can be obtained by using completely fluorocarbon-sealed switches rather than the standard HDLS.

TABLE 2—ENVIRONMENTAL SEAL PERFORMANCE

Std. Seals	Cellulube	Detergent	5 Star	ASTM #1	ASTM #2	ASTM #3	ASTM #4	Houghto Safe 260, 271	Houghto Safe 1010, 1055, 1120	Mineral Oil	Petr. Oil Crude	Silicon Gr. & Oil	Sunsafe	Beer	Stoddard Solv.	Chlorinated Solvents	Citric Acids	Di-ester Syn. Lubricant	Ozone	Pydraul	Pyroguard	Petr. Base Hydraulic Oil	Lard Oil	Silicate Esters
LSA	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSB	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSC	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSD	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSE	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSF	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSG	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSH	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSJ	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSK	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSL	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSM	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSN	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSP	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSR	4	1	1	1	1	1	2	1	4	1	1	1	1	1	1	4	1	2	4	4	4	1	1	2
LSV	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2
LSW	4	2	2	1	2	4	4	2	4	2	2	1	2	1	2	4	1	4	3	4	4	2	2	2

All HDLS with seals of:

Fluorisilicone (Low Temp. HDLS)	4	1	1	1	1	1	2	2	4	1	1	1	1	1	1	1	1	2	1	4	4	1	1	1
Fluorocarbon (High Temp. HDLS)	1*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

*Fluorocarbon seals good for all Cellulubes Except A60.CODE:

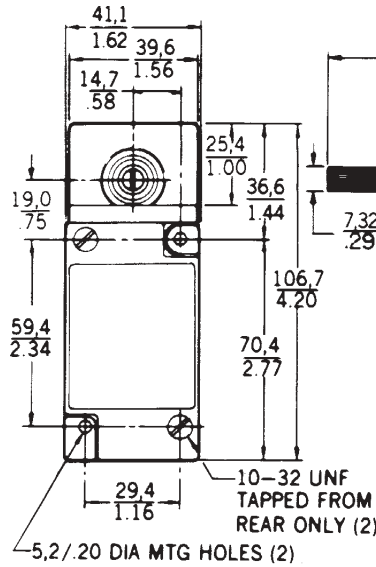
1 = Satisfactory
2 = Fair3 = Doubtful
4 = Unsatisfactory

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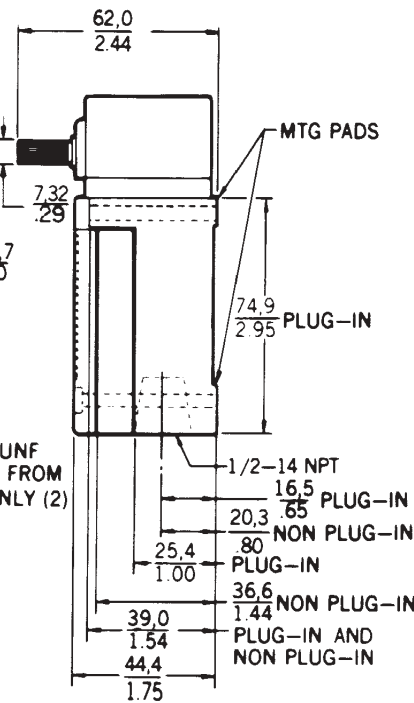
Limit and Enclosed Switches
Mounting Dimensions (For reference only)

HDLS Series

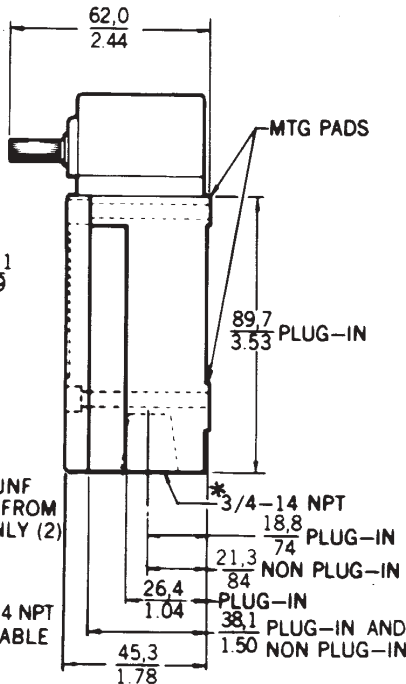
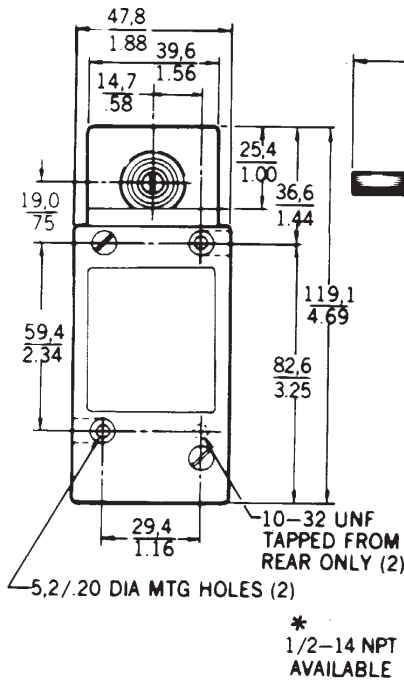
SIDE ROTARY



Single-pole



Double-pole



Limit/Enclosed

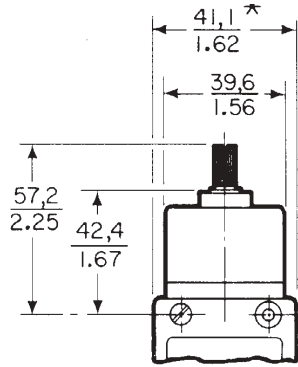
Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

Limit and Enclosed Switches

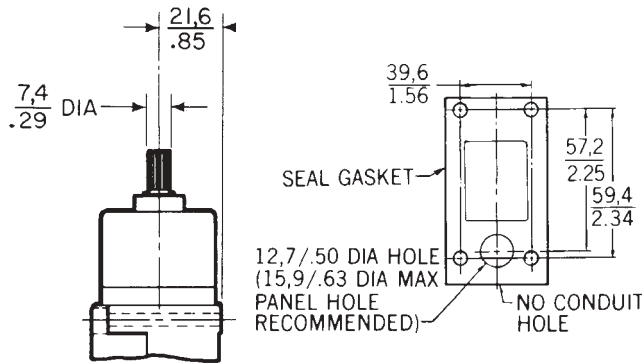
Mounting Dimensions (For reference only)

HDLS Series

TOP ROTARY Single-pole



MANIFOLD MOUNT (Plug-in only) Single-pole and double-pole



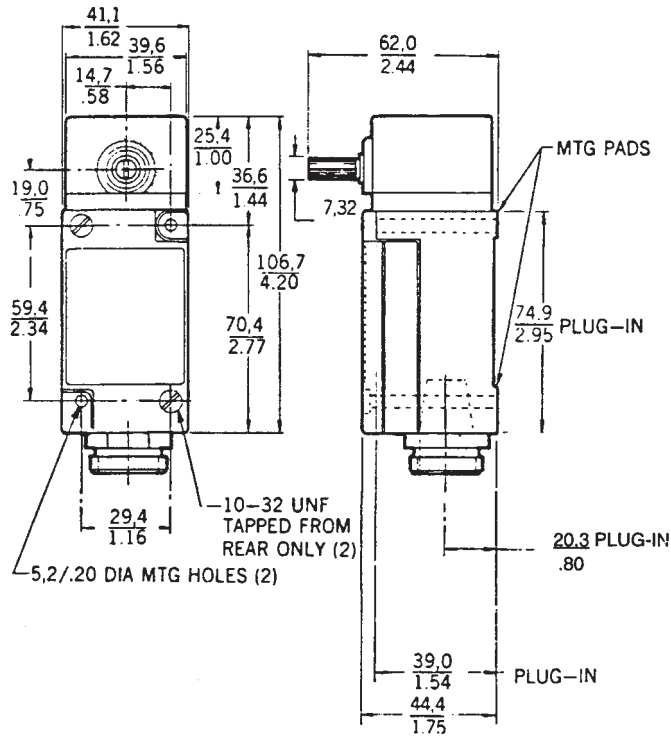
* 47.5
1.87

Single-Pole

Double-Pole Dimension

NEMA 6P PRE-WIRED SIDE ROTARY

Single-pole



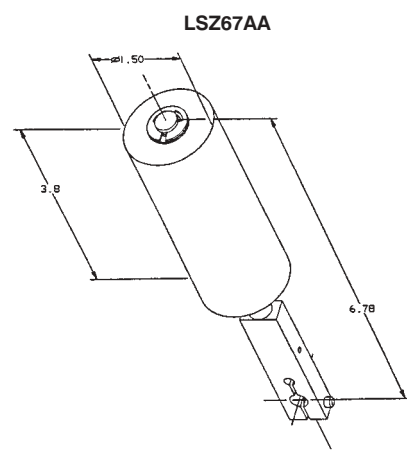
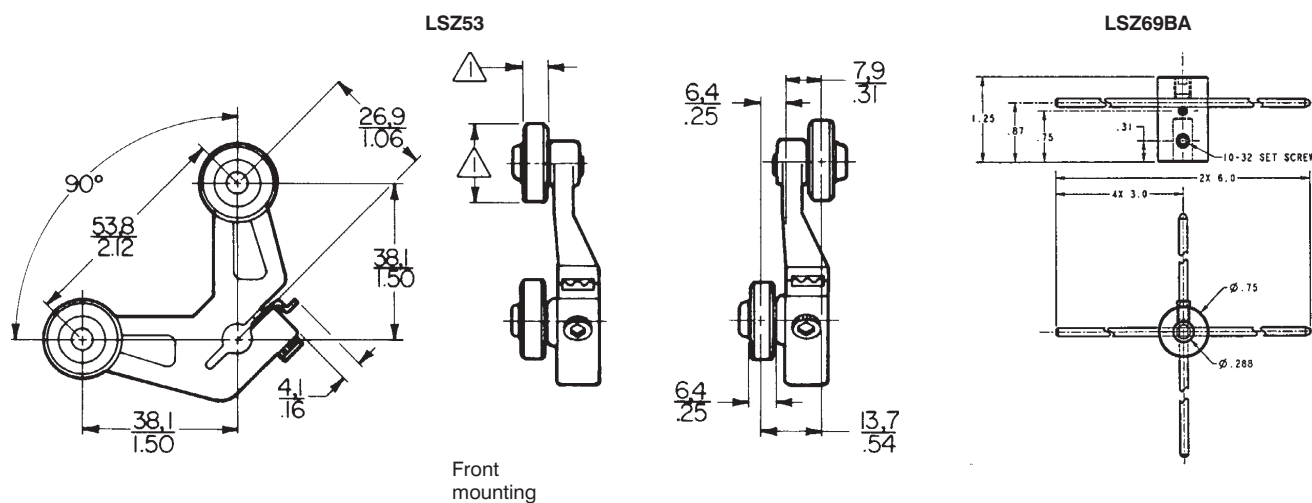
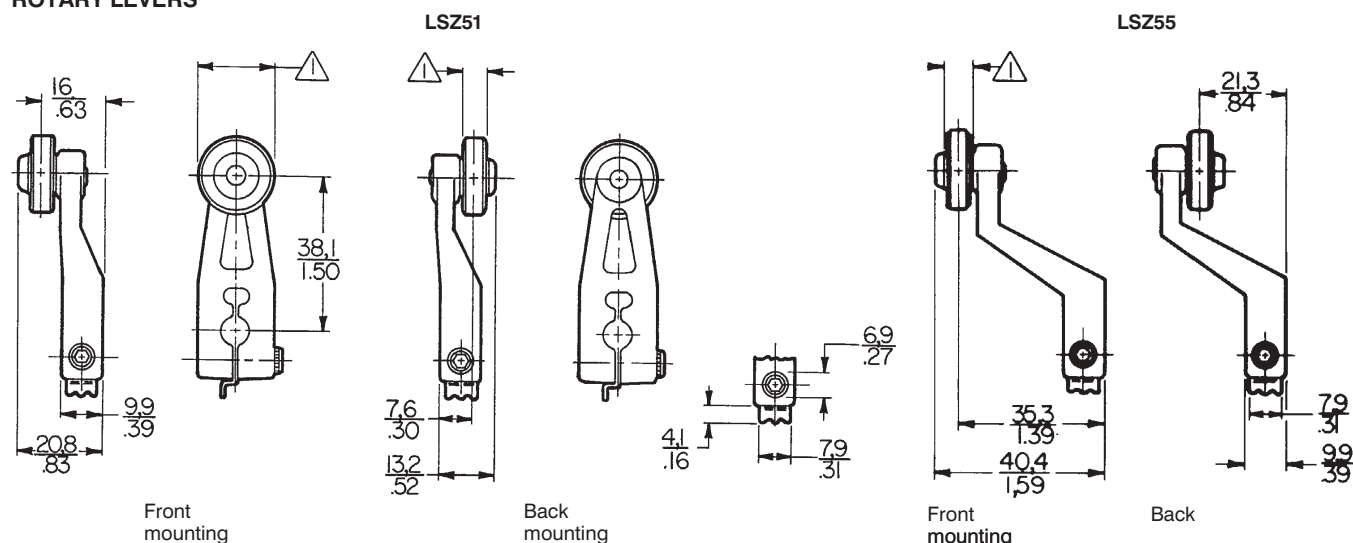
Mounting Dimensions (For reference only)

ROTARY LEVERS

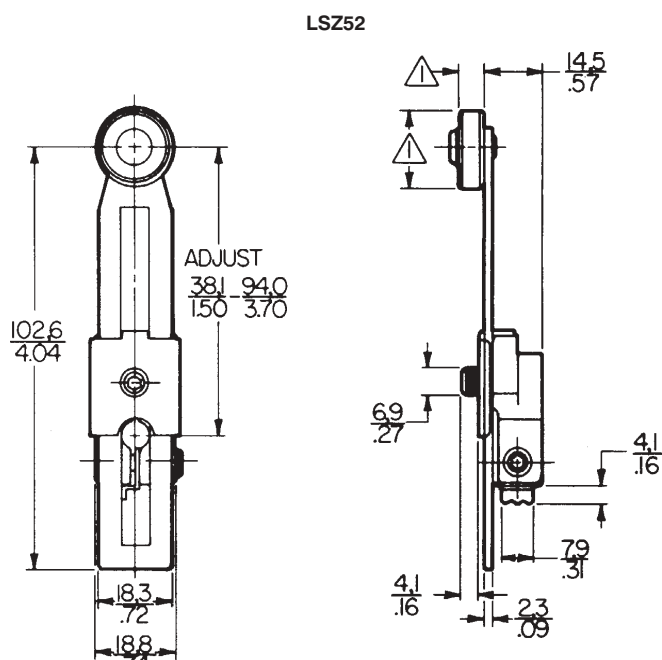
HDLS Series

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Limit/Enclosed



 See order guides for roller dimensions.

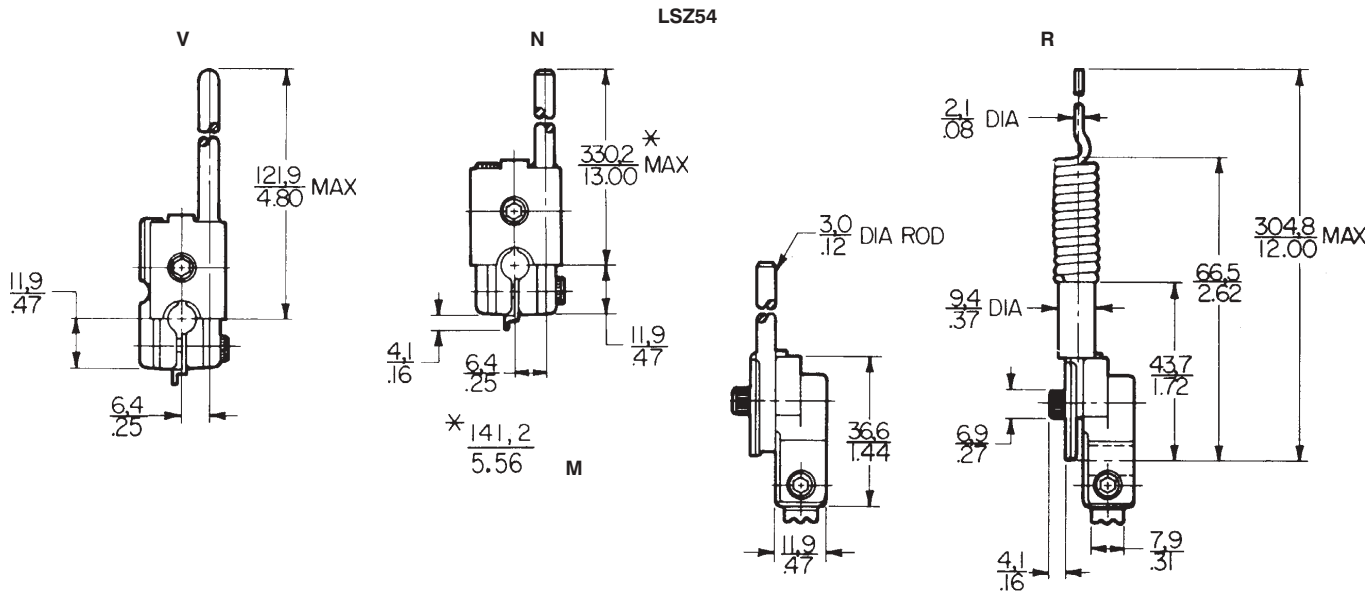


Limit and Enclosed Switches

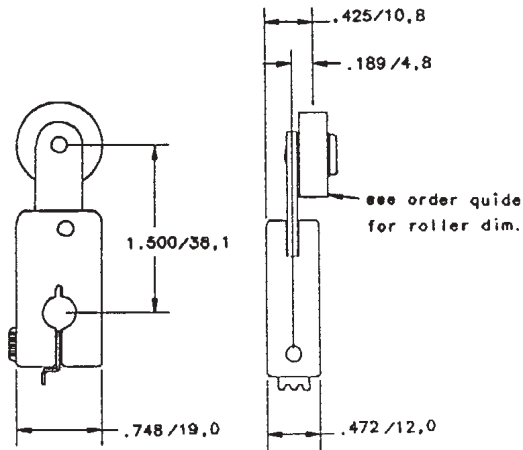
HDLS Series

Mounting Dimensions (For reference only)

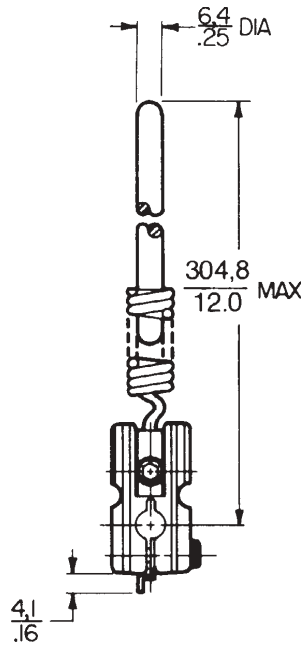
ROTARY LEVERS



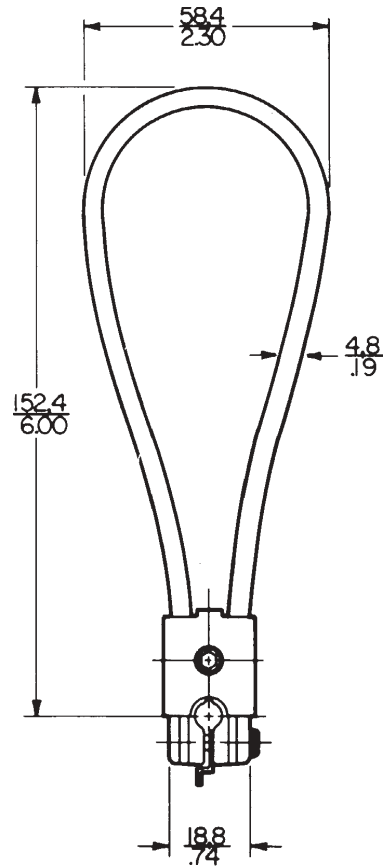
LSZ60



LSZ68



LSZ61



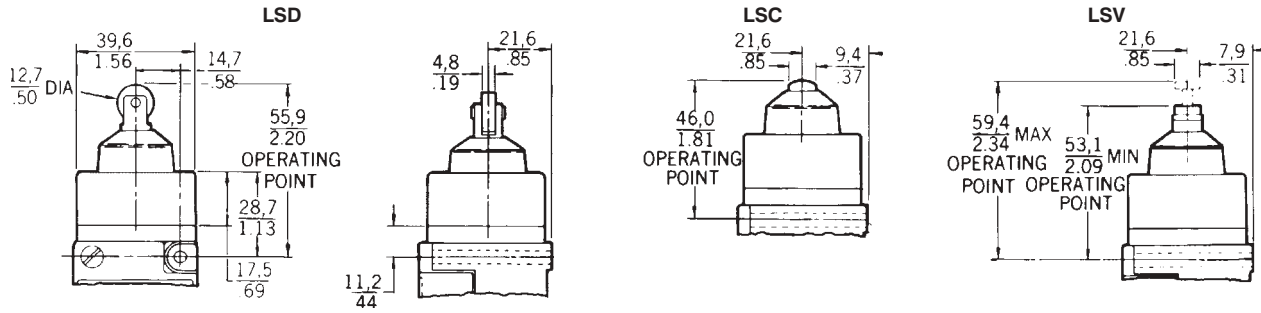
Limit and Enclosed Switches

HDLS Series

Mounting Dimensions (For reference only)

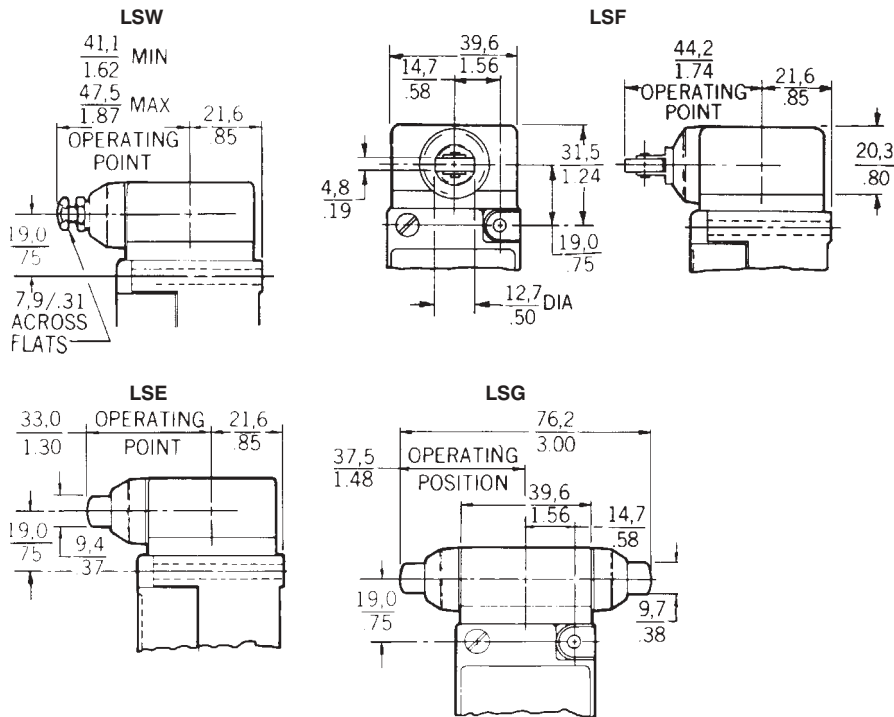
TOP PLUNGERS

Single-pole and double-pole



SIDE PLUNGERS

Single-pole and double-pole



Key: 0.0 = mm
0.00 = inches

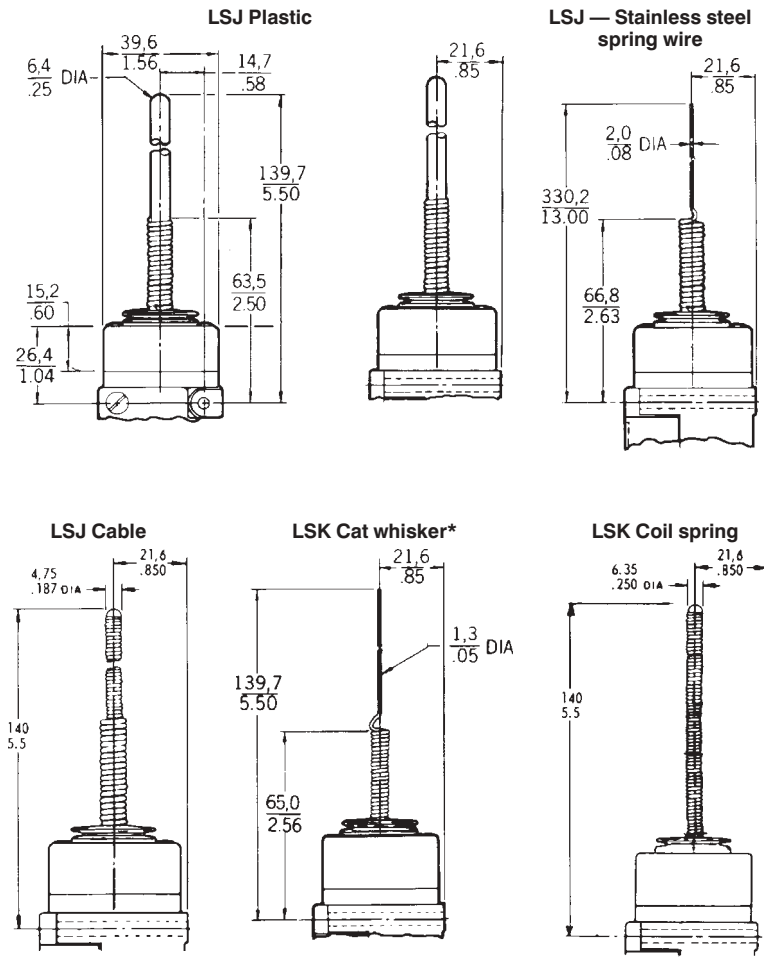
Limit/Enclosed

Limit and Enclosed Switches

HDLS Series

Mounting Dimensions (For reference only)

WOBBLE LEVERS



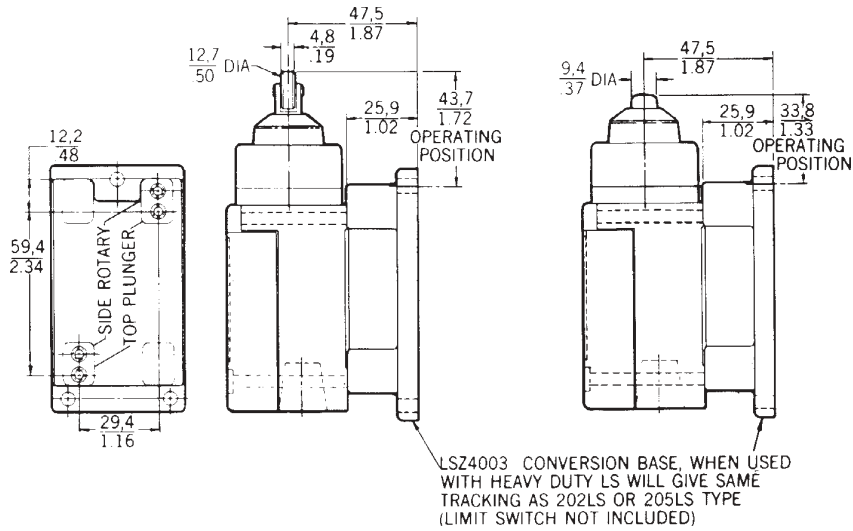
* Also available with 7½" actuator.

Key: 0.0 = mm
0.00 = inches

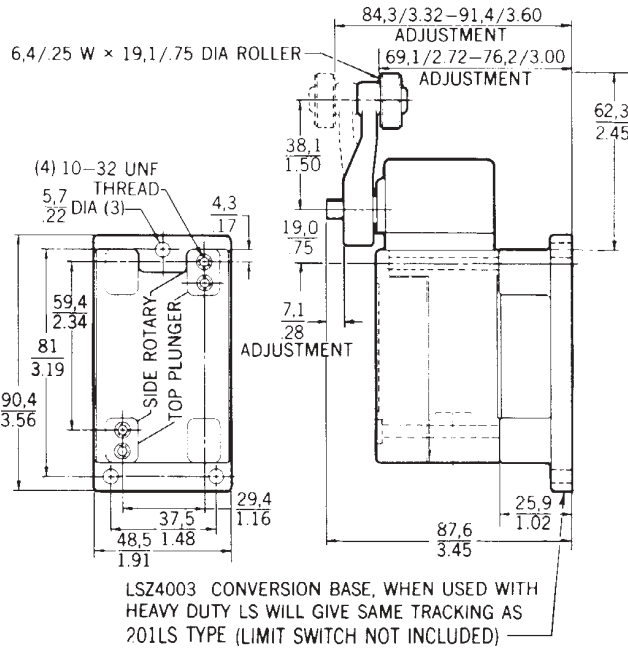
Mounting Dimensions (For reference only)

CONVERSION BASES

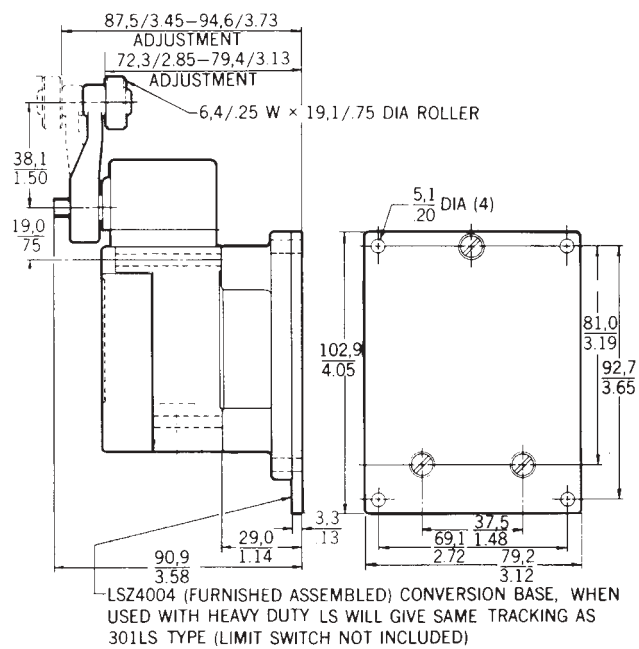
SINGLE-POLE TOP PLUNGER LSZ4003



SINGLE-POLE SIDE ROTARY LSZ4003



DOUBLE-POLE SIDE ROTARY LSZ4004



Limit/Enclosed

Limit and Enclosed Switches

HDLS Series

LS/200LS Cross-Reference

The following cross-reference between compact LS/plug-in 200LS switches and HDLS switches applies to style, but not necessarily operating characteristics. When replacing LS/200LS with HDLS switches, the new characteristics should be considered.

The HDLS requires an adapter plate to interchange with 200LS (see page A41).

NON PLUG-IN

LS	HDLS	(Consisting Of)
1LS1	LSA3K-1D	(LSA3K + LSZ51D)
1LS1-L	LSA3K-1D	(LSA3K + LSZ51D)
1LS1-N	LSA3K-1C	(LSA3K1 + LSZ51C)
1LS1-NA	LSA3K1-1C	(LSA3K1 + LSZ51C)
1LS2	LSA3K	—
1LS3	LSA3K-2C	(LSA3K + LSZ52C)
1LS3-L	LSA3K-2C	(LSA3K + LSZ52C)
1LS5	LSR3K-1C	(LSR3K + LSZ51C)
1LS6	LSR3K-1D	(LSR3K + LSZ51D)
1LS9	LSP3K	—
1LS10	LSR3K-4M	(LSR3K + LSZ54M)
1LS10-L	LSR3K-4M	(LSR3K + LSZ54M)
1LS19	LSR3K-1D	(LSP3K + LSZ51D)
1LS23	LSR3K	—
1LS27	LSP3K5	—
1LS34	LSR3K-1C	(LSR3K + LSZ51C)
1LS47	LSH3K-4M	(LSH3K + LSZ54M)
1LS58	LSP3K-2C	(LSP3K + LSZ52C)
1LS59	LSH3K-2C	(LSH3K + LSZ52C)
1LS128	LSA3K-2K	(LSA3K + LSZ52K)
1LS131	LSH3K-1D	(LSH3K + LSZ51D)
1LS139	LSR3K-4M	(LSR3K + LSZ54M)
1LS145	LSH3K-2M	(LSH3K + LSZ52M)
1LS156	LSA3K-1C	(LSA3K + LSZ51C)
1LS165-L	LSA3K4-2C	(LSA3K4 + LSZ52C)
1LS212	LSH3K	—
1LS213	LSH3K	—
2LS1	LSC3K	—
2LS1-L	LSC3K	—
2LS7	LSC3K	—

LS	HDLS	(Consisting Of)
3LS1	LSF3K	—
3LS1-L	LSF3K	—
3LS5	LSF3K4	—
4LS1	LSE3K	—
4LS1-L	LSE3K	—
5LS1	LSD3K	—
5LS1-L	LSD3K	—
5LS6	LSD3K6	—
5LS6-L	LSD3K6	—
5LS7	LSD3K6	—
5LS8	LSD3K	—
6LS1	LSN3K-3B	(LSN3K + LSZ53B)
6LS1-L	—	—
6LS2	LSN3K	—
6LS2-L	LSN3K	—
6LS3	LSN3K-3S	(LSN3K + LSZ53S)
8LS1	LSJ3K-7N	—
8LS1-L	LSJ3K-7N	—
8LS4	LSK3K-8B	—
8LS125	LSK3K-8B	—
11LS1	LSA7L-1D	(LSA7L + LSZ51D)
11LS2	LSA7L	—
11LS3	LSA7L-2C	(LSA7L + LSZ52C)
11LS10	LSR7L-4M	(LSR7L + LSZ54M)
11LS156	LSA7L-1D	(LSA7L + LSZ51D)
12LS1	LSC7L	—
13LS1	LSF7L	—
14LS1	LSE7L	—
14LS3	LSE7L5	—
15LS1	LSD7L	—
15LS8	LSD7L	—

PLUG-IN

200LS*	HDLS	(Consisting Of)
201LS1	LSA1A-1D	(LSA1A + LSZ51D)
201LS1-N	LSA1A1-1C	(LSA1A1 + LSZ51C)
201LS2	LSA1A	—
201LS3	LSA1A-2C	(LSA1A + LSZ52C)
201LS6	LSR1A-1D	(LSR1A + LSZ51D)
201LS9	LSP1A	—
201LS10	LSR1A-4M	(LSR1A + LSZ54M)
201LS19	LSP1A-1D	(LSP1A + LSZ51D)
201LS23	LSR1A	—
201LS47	LSH1A-4M	(LSH1A + LSZ54M)
201LS143	LSA1A-2D	(LSA1A + LSZ52D)
201LS501	LSA5A-1D	(LSA5A + LSZ51D)
201LS501-A1	LSA8A-1D	(LSA8A + LSZ51D)
201LS502	LSA5A	—
201LS503	LSA5A-2C	(LSA5A + LSZ52C)
201LS503-A1	LSA8A-2C	(LSA8A + LSZ52C)
201LS510	LSR5A-4M	(LSR5A + LSZ54M)
202LS1	LSC1A	—
202LS7	LSC1A	—
202LS8	—	—

200LS/300LS*	HDLS	(Consisting Of)
203LS1	LSF1A	—
203LS501	LSF5A	—
204LS1	LSE1A	—
204LS501	LSE5A	—
205LS1	LSD1A	—
205LS7	LSD1A3	—
205LS8	LSD1A	—
205LS501	LSD5A	—
206LS1	LSN1A-3B	(LSN1A + LSZ53B)
206LS2	LSN1A	—
208LS1	LSJ1A-7N	—
208LS125	LSK1A-8B	—
208LS501	LSJ5A-7N	—
208LS525	LSK5A-8B	—
301LS1	LSM2D-1D	(LSM2D + LSZ51D)
301LS2	LSM2D	—
301LS3	LSM2D-2C	(LSM2D + LSZ52C)
301LS5	LSM2D-4N	(LSM2D + LSZ54N)
301LS8	LSA2B-1D	(LSA2B + LSZ51D)
301LS28	LSA2B	—

* Require terminal block (18PA1 for 200 series, 18PA3 for 300 series), which must be ordered separately.