



MICRO SWITCH™
Hazardous Area Switches
LSX Series



MICRO SWITCH™ Hazardous Area Limit Switches

SPECIAL OPTIONS

HIGH TEMPERATURE/CHEMICAL RESISTANT SWITCHES

Completely fluorocarbon (FC)-sealed 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 designed for use in applications where the environment includes fire-resistant synthetic fluids. In addition, the FC-sealed switches may be used with such industrial fluids as Cellulube, Fyrquell, Houghto-Safe, Pydraul, and other special cutting and hydraulic fluids. The additional FC seals also promote extended operating life for rotary-actuated LSX switches in applications where the temperatures are normally -12 °C to 121 °C [10 °F to 250 °F].

To order, insert the additional letters **Y** and **C** in the appropriate places in the standard catalog listing, as shown below:

LSXA3K	standard, side-rotary plug-in switch
LSXYAC3K	completely FC-sealed version of LSXA3K

LOW TEMPERATURE SWITCHES

All forms of LSX limit switches are also available in low-temperature construction. Design features include fluorosilicone diaphragm, shaft seals, and external boot seal (where applicable).

To order, insert the additional letters **Y** and **B** in the appropriate places in the standard catalog listing, as shown below:

LSXA3K	standard, side-rotary plug-in switch
LSXYAB3K	low-temperature version of LSXA3K

MICRO SWITCH™ LSX SERIES OPERATING HEADS

SIDE ROTARY: Heads may be positioned in any one of four positions, 90° increments. All are momentary action except maintained head (LSXN Series).



LSXA - Standard: 60° minimum overtravel, 15° maximum pretravel, 5° (single pole) and 7° (double pole) maximum differential travel.

LSXR - Low operating torque: 60° minimum overtravel, 15° maximum pretravel, 0.19 Nm [1.7 in-lb] maximum operating torque.

LSXN - Maintained contact: Maintained on counterclockwise rotation and reset on clockwise rotation, and vice versa.

LSXP - Low differential: 68° minimum overtravel, 9° maximum pretravel, 3° (single pole) and 4° (double pole) maximum differential travel.

LSXH - Low torque, low differential travel: 68° minimum overtravel. Features low operating torque and narrow differential travel.

LSXL - Sequence action: 48° minimum overtravel. Delayed action between operation of two poles.

LSXM - Center neutral: 57° minimum overtravel. One pole operates on the clockwise rotation, and the other pole on the counterclockwise rotation.

LSXU - Low pretravel: 5° max. pretravel, 70° min. overtravel.

TOP ROTARY: Available levers provide greater versatility. Heads may be positioned in any one of four positions, 90° increments. All are momentary action.



LSXB: With 100° minimum overtravel. Various levers that fit side rotary shafts may be used on the top rotary shaft. Switch is suitable for use when increased overtravel is required.




LSX Series

MICRO SWITCH™ LSX SERIES OPERATING HEADS



TOP PLUNGERS: Available with 4,83 mm [0.19 in] minimum overtravel. Top pin plungers are offered in pin plunger, an adjustable plunger, and a roller plunger.

	<p>LSXC - Top pin plunger: A copper alloy plunger for in-line actuating motion. Oil-tight seals on plunger and between the operating head and housing are designed to keep out coolant, dust, and chips. Momentary action.</p>
	<p>LSXD - Top roller plunger: A copper alloy roller plunger is adjustable to 90° angles to accept cam or slide operation from any of two directions. Boot seal on the plunger. Momentary action.</p>
	<p>LSXV - Adjustable top pin plunger: A copper alloy adjustable plunger is designed to simplify the application and decreases installation time. The operating points of the switch can be adjusted from 65,66 mm to 72,0 mm [2.585 in to 2.535 in]. Seals are the same as the pin plunger. Momentary action.</p>

SIDE PLUNGERS: Made of non-sparking copper alloy. Available with 4,83 mm [0.19 in] minimum overtravel. Side plungers are offered in plain plunger, an adjustable pin plunger, and a roller plunger.

	<p>LSXE - Side pin plunger: A copper alloy plunger for actuating motion inline with the plunger travel. Actuating head may be rotated in any of four positions, 90° apart. A boot seal on the plunger and a gasket seal between the head and housing is designed to keep out coolant, dust, and chips. Momentary action.</p>
	<p>LSXF - Side roller plunger: A copper alloy roller plunger fits close quarters under cams and slides. The head may be rotated in any of four positions, 90° apart. <u>The roller can be turned vertical or horizontal to the switch.</u> Boot seal on plunger. Momentary action.</p>
	<p>LSXW - Adjustable side pin plunger: Has the same features of the side plain plunger plus the means to adjust the operating points of the switch from 41 mm to 47,4 mm [1.615 in to 1.865 in]. Momentary action.</p>













WOBBLE LEVER ACTUATING HEADS: Heads come with either a Delrin® plastic rod or a copper alloy cat whisker. Any movement of the lever (except pull) will actuate the switch.

	
<p>LSXJ - Plastic rod: Recommended where possible scratching or marring by the actuator is to be avoided.</p>	<p>LSXK - Cat whisker: Copper alloy actuator designed for low operating force applications.</p>

MICRO SWITCH™ Hazardous Area Limit Switches

Table 2. Common levers for use with MICRO SWITCH™ LSX Rotary Switches*

Lever for use with side-rotary-actuated switches are available in a wide choice of sizes and materials. The most common listings are shown below. Rollers may be on either side of the lever to best match the external actuating mechanism.






						
Fixed lever, nylon roller LSZ51A - front mount roller LSZ51C - back mount roller		Short fixed lever, nylon roller LSZ59A - front mount roller LSZ59C - back mount roller		Offset lever, nylon roller LSZ55A - back mount roller LSZ55C - front mount roller		
						
One-way lever, nylon roller LSZ60A - front mount roller		Yoke lever, nylon rollers LSZ53A - front/back mount rollers				
						
Adjustable lever, nylon roller LSZ52A - back mount roller LSZ52C - front mount roller	LSZ52J adjustable lever, nylon roller 25,4 mm [1 in]	LSZ52K adjustable lever, nylon roller 38,1 [1.5 in]	LSZ54M aluminum rod 140 mm [5.5 in]	LSZ61 loop 152 mm [6 in]	LSZ67CA** Plastic conveyor roller	LSZ68 rod with spring 305 mm [12 in]







* Non-sparking rollers and actuators must be used in hazardous areas.

** May require orientation of switch and lever to enable gravity to help restore switch's free position.

LSX Series

Table 3. LSX Series Lever Order Guide

Catalog Listing	Material	Roller Dia. mm [in]	Roller Width mm [in]	Roller Mounting
Fixed 38,1 mm [1.5 in] radius				
	LSZ51	Rollerless	n/a	n/a
	LSZ51A	Nylon	19 [0.75]	6,35 [0.25] Front
	LSZ51C	Nylon	19 [0.75]	6,35 [0.25] Back
	LSZ51F	Nylon	25,4 [1.0]	12,7 [0.50] Front
	LSZ51G	Nylon	38,1 [1.5]	6,35 [0.25] Front
	LSZ51J	Nylon	25,4 [1.0]	12,7 [0.50] Back
	LSZ51M	Nylon	19 [0.75]	31,7 [1.25] Back
	LSZ51P	Nylon	19 [0.75]	12,7 [0.50] Front
	LSZ251A (sst)	Nylon	19 [0.75]	6,35 [0.25] Front
	LSZ251C (sst)	Nylon	19 [0.75]	6,35 [0.25] Back
	LSZ251E (sst)	Copper alloy	19 [0.75]	6,35 [0.25] Front
LSZ251F (sst)	Copper alloy	19 [0.75]	6,35 [0.25] Back	
Adjustable 38,1 mm [1.5 in] to 89,9 mm [3.5 in] radius				
	LSZ52	Rollerless	n/a	n/a
	LSZ52A	Nylon	19 [0.75]	6,35 [0.25] Back
	LSZ52C	Nylon	19 [0.75]	6,35 [0.25] Front
	LSZ52E	Nylon	19 [0.75]	33,0 [1.30] Front
	LSZ52J	Nylon	25,4 [1.0]	12,7 [0.50] Front
	LSZ52K	Nylon	38,1 [1.5]	6,35 [0.25] Front
	LSZ52M	Nylon	50,8 [2.0]	6,35 [0.25] Front
	LSZ52N	Nylon	19 [0.75]	12,7 [0.50] Front
	LSZ252A (sst)	Nylon	19 [0.75]	6,35 [0.25] Front
	LSZ252C (sst)	Nylon	19 [0.75]	6,35 [0.25] Back
	LSZ252E (sst)	Copper alloy	19 [0.75]	6,35 [0.25] Front
	LSZ252F (sst)	Copper alloy	19 [0.75]	6,35 [0.25] Back
Yoke – 38,1 mm [1.5 in] radius				
	LSZ53A	Nylon	19 [0.75]	6,35 [0.25] Front/Back
	LSZ53E	Nylon	19 [0.75]	6,35 [0.25] Back/Front
	LSZ53M	Nylon	19 [0.75]	31,7 [1.25] Back/Front
	LSZ53S	Nylon	19 [0.75]	6,35 [0.25] Back/Back
Rod				
	LSZ54	Hub only	n/a	n/a
	LSZ54M	Alum., 140 mm [5.5 in]	Ø 3,2 [Ø 0.125]	n/a
	LSZ54N	Stainless, 330 mm [13 in]	Ø 3,2 [Ø 0.125]	n/a
	LSZ54P	Plastic rod, 305 mm [12 in]	Ø6,85 [Ø 0.27]	n/a
LSZ54W	Plastic rod, 183 mm [7.2 in]	Ø6,85 [Ø 0.27]	n/a	
Offset – 38,1 mm [1.5 in] radius				
	LSZ55	Rollerless	n/a	n/a
	LSZ55A	Nylon	19 [0.75]	6,35 [0.25] Back
	LSZ55C	Nylon	19 [0.75]	6,35 [0.25] Front
	LSZ55E	Nylon	19 [0.75]	12,7 [0.50] Front
	LSZ55K	Nylon	38,1 [1.5]	6,35 [0.25] Front

Catalog Listing	Material	Roller Dia. mm [in]	Roller Width mm [in]	Roller Mounting	
Short fixed - 33,02 mm [1.3 in] radius					
	LSZ59A	Nylon	19 [0.75]	6,35 [0.25] Front	
	LSZ59C	Nylon	19 [0.75]	6,35 [0.25] Back	
One-way roller lever					
	LSZ60A	Nylon	19 [0.75]	6,35 [0.25] Front	
Flexible loop					
	LSZ61	Ø 4,8 [Ø 0.19] Nylatron	152 mm [6 in] flexible loop		
	LSZ618	Ø 4,8 [Ø 0.19] Nylatron	241 mm [9.5 in] flexible loop		
	LSZ54	Hub only	n/a	n/a	n/a
Spring rod					
	LSZ68	Delrin rod, 305 mm [12 in]	Ø 6,35 [0.25]	n/a	n/a
	LSZ617	Delrin rod, 406 mm [16 in]	Ø 6,35 [0.25]	n/a	n/a
	LSZ686	Delrin rod, 152 mm [6 in]	Ø 6,35 [0.25]	n/a	n/a
Rubber roller levers					
	LSZ51Y	Rubber	50 [2.0]	12,7 [0.5]	front
	LSZ55Y	Rubber	50 [2.0]	12,7 [0.5]	front
	LSZ52Y	Rubber	50 [2.0]	12,7 [0.5]	front
Plastic roller levers					
	LSZ67AA (conveyor)*	Plastic	38,1 [1.5]	96,5 [3.8]	n/a

* May require orientation of switch and lever to enable gravity to help restore switch to free position.