

Installation Instructions for the Explosion-proof Limit Switches LSX Series

PK 81181



⚠ WARNING
PERSONAL INJURY
DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.
Failure to comply with these instructions could result in death or serious injury.

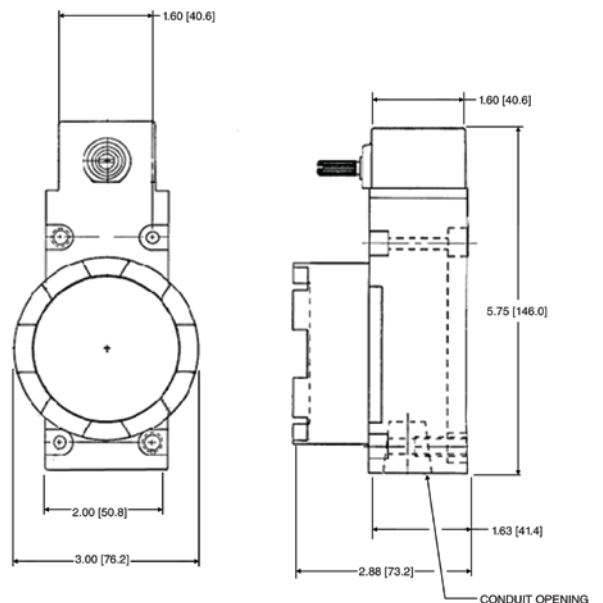
⚠ WARNING
OPENING PRODUCTS HAZARD
DO NOT OPEN these products when energized or in a flammable gas atmosphere.
Failure to comply with these instructions could result in death or serious injury.

⚠ WARNING
IMPROPER CONDUIT THREAD USE
DO NOT USE any other conduit thread than the one identified on the product. Verify that the mating threaded fitting is identical with the conduit thread shown on the product nameplate.
Failure to comply with these instructions could result in death or serious injury.

Figure 1. MICRO SWITCH™ LSX Terminology



Figure 2. MICRO SWITCH™ LSX General Dimensions



MICRO SWITCH™ explosion-proof switches are designed specifically for use in hazardous area applications. In addition to meeting explosion-proof requirements, the MICRO SWITCH™ LSX meets additional enclosure sealing classifications. This makes the LSX ideal for outdoor use or in adverse environments where a combination of explosion proof plus sealing requirements are needed.

The MICRO SWITCH™ LSX enclosure is sealed for protection against corrosion, water, dust and oil, as defined in NEMA 1, 3, 4, 6, and 13. These enclosures also meet NEMA standards for hazardous type Div. 1 & 2, Class I, Groups B, C, & D; Div. 1 & 2, Class II, Groups E, F, & G.

MOUNTING INSTRUCTIONS

The LSX may be mounted using two 1/4-inch or M6 screws for clearance fit, or two 5/16-18 UNC bolts for threaded fit. Torque threaded fit bolts to 12 in-lb to 16 in-lb [1.4 Nm to 1.8 Nm]. See Figure 2.

MOUNTING INSTRUCTIONS: HDLS Mounting

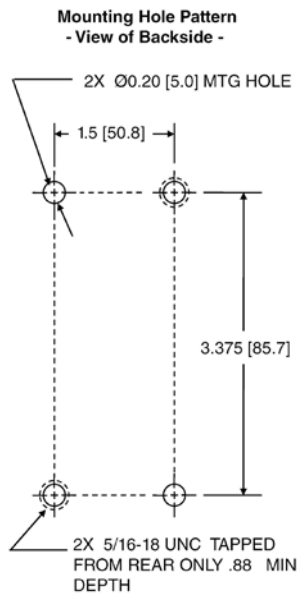
If it is desired to mount on existing HDLS mounting hole locations, the adapter plate (Catalog Listing: LSXZ4022) must be used. The adapter plate is attached to the HDLS location.

Position the plate so the screw heads fit into the plate recesses provided. Now simply attach the MICRO SWITCH™ LSX to the adapter plate using two 3/16-inch screws and the smaller mounting holes. The mounting plate fits into the recess in the back of the LSX. It is good practice not to mount the switch upside down or at the low point of long conduit runs.

MOUNTING INSTRUCTIONS: NEW INSTALLATIONS

Note the mounting dimensional drawing (Figure 3) for hole locations.

Figure 3. MICRO SWITCH LSX Mounting Hole Pattern



WIRING INSTRUCTIONS

The circular cover on the front of the switch is unthreaded to expose the switching element for wiring or replacement. To aid in cover removal, a screwdriver or bar may be used on the wrenching lugs.

Use up to size #12 AWG solid or standard wire to connect to the pressure type connector terminals. Stripped wire ends or any spade and ring connector that will fit LS terminals may be used. Spades may be up to 0.312 inch wide, rings up to 0.312 inch diameter. With spade or ring-type connections, pre-insulated connectors or heat-shrinkable tubing should be used to provide insulation between terminals. Circuit diagram is shown on nameplate.

It will be easier to wire the double pole units by connecting lead wires to the terminals nearest the conduit opening first.

A grounding screw is located on the right side. The internal grounding terminal must be used for the equipment grounding connection. After wiring, replace cap so that the o-ring gasket is fully seated.

ADJUSTING INSTRUCTIONS: ACTUATOR HEAD

To give flexibility in application, the actuator head may be positioned in any of four directions. Loosen the four captive head screws, place the head in the desired position, and then securely tighten the four screws. The screw tightening torque is 12 in-lb to 16 in-lb [1.4 Nm to 1.8 Nm].

Figure 4. MICRO SWITCH™ LSX Side Rotary Head



REVERSING THE ROLLER LEVER

Except for the offset roller levers, the roller arm may be reversed to face the roller to the inside or outside of the arm.

For detailed drawings or technical support, please visit sensing.honeywell.com or call us at 1 800 537 6945.

POSITIONING LEVER

The lever on rotary-actuated units is adjustable to any position through 360° around the shaft. Loosen the cap screw with a 9/64-inch hexagon key wrench, move the lever to desired position and securely tighten screw (Figure 4). A 9/64-inch hex key wrench is provided in the adjusting tool set LSZ4005.

ADJUSTABLE LENGTH LEVERS

To adjust the length of the adjustable length levers, a 9/64-inch hexagon key wrench is required. A 9/64-inch hex key wrench is provided in the adjusting tool set LSZ4005.

TOP ROLLER PLUNGER

Position the top roller plunger in the desired roller plane, by adjusting the head as explained under actuator head.

SIDE ROLLER PLUNGER

Grasp the plunger with a pair of pliers and rotate to the desired horizontal or vertical position (Figure 5).

Figure 5. MICRO SWITCH™ LSX Side Roller Plunger

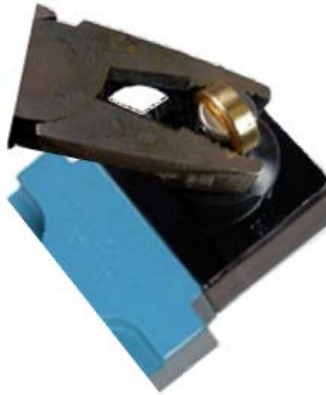
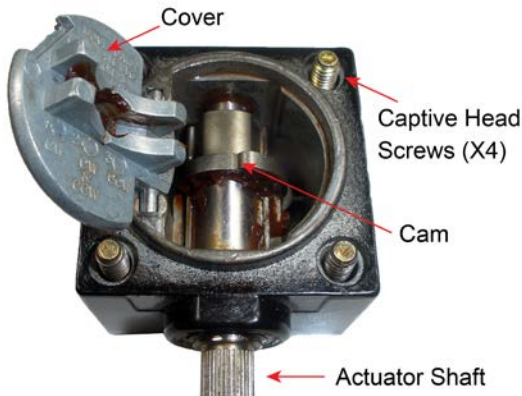


Figure 6. MICRO SWITCH™ LSX Side Rotary Actuator head Terminology



CHANGING DIRECTION OF ACTUATION SIDE ROTARY

Catalog listings with the first four letters LSXA, LSXH, LSXL, LSXP, and LSXR may be adjusted to operate clockwise, counter-clockwise, or both. Catalog listings LSXM (center neutral) and LSXN (maintained) operate in both directions and cannot be changed. To change, follow these steps:

1. Loosen the head screws and remove the head from the switch housing.
2. On the bottom of the head, insert a screwdriver in the slot provided and lift open the hinged cover.
3. Refer to Figure 8, slide the cam all the way back and away from the exterior portion of the actuator shaft, so cam is free to rotate on the shaft.
4. Using a screwdriver or similar tool, rotate the cam to desired actuating position. See Figures 7, 8, & 9.
5. Slide the cam all the way forward to its original position, and close the hinged cover.
6. Replace the operating head on the switch housing and securely tighten the head screws. The screw tightening torque is 12 in-lb to 16 in-lb [1.4 Nm to 1.8 Nm].

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Figure 7. MICRO SWITCH™ LSX Cam Slide

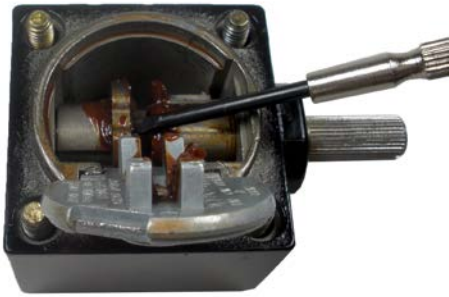


Figure 8. MICRO SWITCH™ LSX Cam Lobes for CW and CCW



Figure 9. MICRO SWITCH™ LSX Cam Lobe for CCW



Figure 10. MICRO SWITCH™ LSX Cam Lobe for CW



TOP ROTARY

Follow these steps to change the operating direction of the LSXB type switch:

1. Loosen the head screws and remove head from the switch housing.
2. From the bottom of the head, grasp the end of the pin plunger (Figure 11) and remove the pin. It may be necessary to rotate the actuating shaft to expose the end of the pin plunger.
3. Using Figure 11 as a position reference orientate the pin plunger according to Figure 12, select the correct pin plunger position for the desired direction of actuation.
4. Insert the pin plunger in the position providing the desired direction of actuation.
5. Replace the operating head on the switch housing and securely tighten the head screws.

Figure 11. MICRO SWITCH™ LSX Top Rotary Actuator

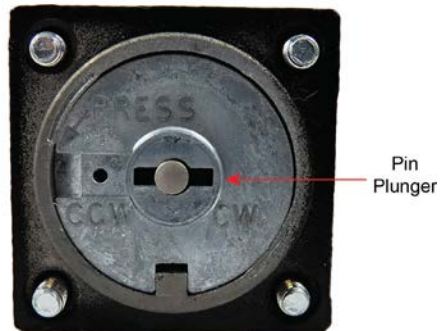
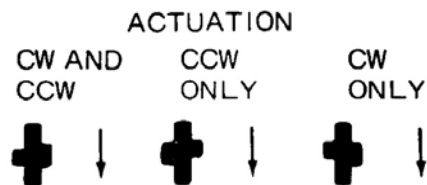
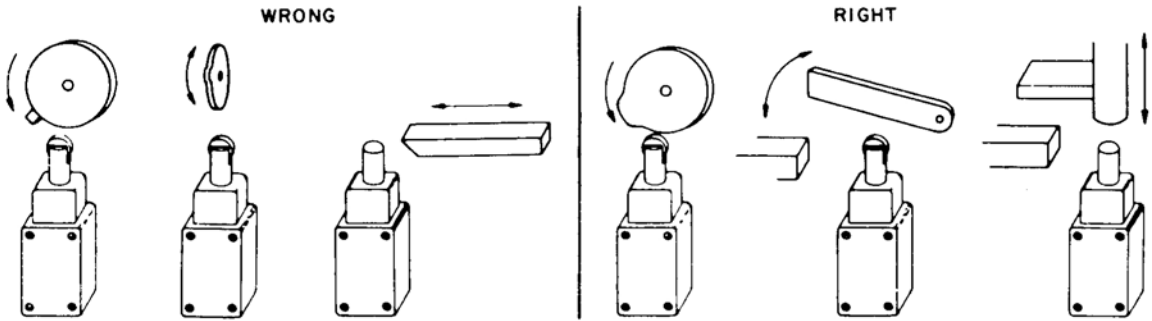


Figure 12. MICRO SWITCH™ LSX Top Rotary Actuation Diagram

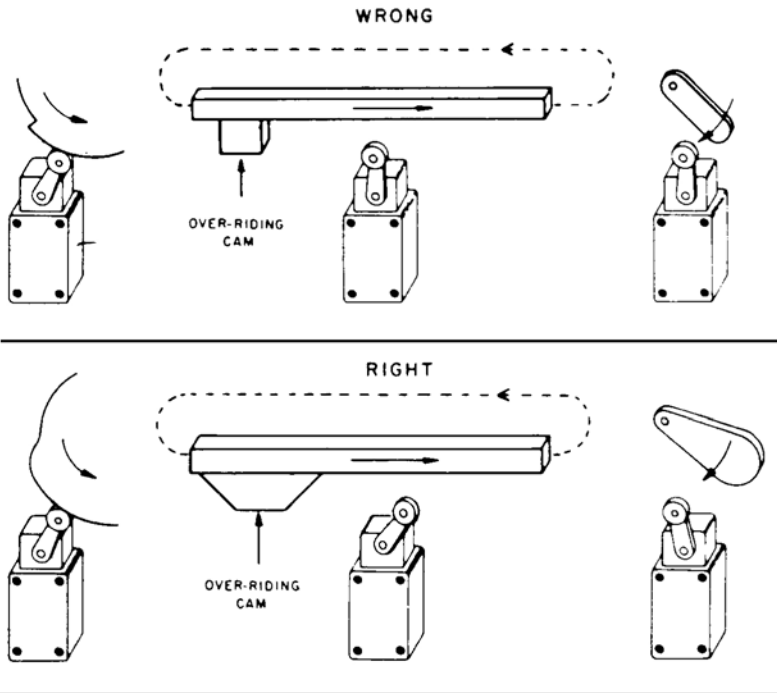


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Figure 13. Proper Application of Limit Switches



For limit switches with pushrod actuators, the actuating force should be applied as nearly as possible in line with the pushrod axis.



Cam or dog arrangements should be such that the actuator is not suddenly released to snap back freely.

REPLACEMENT PARTS

Following is a list of replacement parts for the heavy duty LS switches. Should your specific switch catalog listing not appear in this list, contact the nearest local Honeywell Authorized Distributor or a Honeywell Branch Office.

For ease of making switch adjustments which may be necessary on various switch listings, it is recommended to order the Lever and Switch Adjusting Tool Set (Catalog Listing: LSZ4005). This set consists of (1) special 3/32-inch open end wrench, and (1) 9/64-inch hexagon key wrench.

REPLACEMENT LEVERS

To order replacement levers, order the same part number as that which is metal stamped on either the lever or lever hub. Use only non-sparking levers to retain the explosion proof qualities.

ADAPTER MOUNTING PLATE

Catalog Listing: LSXZ4022

NON-PLUG IN

Catalog listing* on switch nameplate	Operating head only	Contact block (basic switch only)
LSXA3K	LSZ1A	LSXZ3K
LSXA4L	LSZ1A	LSXZ3L
LSXB3K	LSZ1B	LSXZ3K
LSXB4L	LSZ1B	LSXZ3L
LSXC3K	LSXZ1C	LSXZ3K
LSXC4L	LSXZ1C	LSXZ3L
LSXD3K	LSXZ1D	LSXZ3K
LSXD4L	LSXZ1D	LSXZ3L
LSXE3K	LSXZ1E	LSXZ3K
LSXE4L	LSXZ1E	LSXZ3L
LSXF3K	LSXZ1F	LSXZ3K
LSXF4L	LSXZ1F	LSXZ3L
LSXH3K	LSZ1H	LSXZ3K
LSXH4L	LSZ1H	LSXZ3L
LSXJ3K-7A	LSZ1JGA	LSXZ3K
LSXJ4L-7A	LSZ1JGA	LSXZ3L
LSXK3K-8A	LSXZ1KHA	LSXZ3K
LSXK4L-8A	LSXZ1KHA	LSXZ3L
LSXL4M	LSZ1L	LSXZ3M
LSXM4N	LSZ1M	LSXZ3M
LSXN3K	LSZ1N	LSXZ3K
LSXN4L	LSZ1N	LSXZ3L
LSXP3K	LSZ1P	LSXZ3K
LSXP4L	LSZ1P	LSXZ3L
LSXR3K	LSZ1R	LSXZ3K
LSXR4L	LSZ1R	LSXZ3L

*Above, only a portion of Catalog listing is shown to determine the replacement part. Listings shown with -7A, or -8A are complete listings.

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WARRANTY/REMEDY

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