

### MICRO SWITCH Hazardous Area Switches



The MICRO SWITCH BX/BX2 Series are designed for applications in hazardous or explosive environments requiring a rugged, durable switch virtually anywhere in the world. To comply with explosion-proof switching requirements, the flame path within the switch housing is designed to contain and cool escaping hot gases and fumes that could cause an explosion outside of the switch. Regardless of where the equipment or machinery is designed, built, or installed, BX and BX2 Series products carry global agency coverage.

Honeywell offers two versions of the BX series switch: the standard BX Series features an aluminum housing, while the BX2 series features a 316L stainless steel housing. The stainless steel housing adds additional resistance against corrosion in applications exposed to aggressive, caustic agents, as well as those often present in chemical processing plants, off-shore/near-shore sites, and other hazardous areas. Both products are weather sealed for outdoor use and designed for explosive gas/dust environments. All operating heads of the BX/BX2 Series are field adjustable at 90° increments.

### **FEATURES**

- Approvals: UL, CSA, ATEX (CE), UKEX (UKCA), IEC Ex, INMETRO (Brazil), NEPSI Ex (China), and KOSHA/KTL (select listings - Korea)
- Sealed to IP67, NEMA 1, 3, 4, 6, 13
- Industry-leading breadth of products
- Two rugged designs are available: aluminum or corrosion-resistant stainless steel head and body
- A diaphragm seal between head and body provides an extra measure of protection
- Optional fluorocarbon seals are available for harsh chemical or higher temperature environments
- Secure head-to-body retention with the head in any one of four positions 90° apart
- Self-lifting pressure plate terminals saves wiring time.
- Wide variety of non-sparking actuators, switch options, and head styles for design flexibility
- Rotary actuated heads are field adjustable for CW actuation, CCW actuation, or both to reduce inventory
- Choice of silver or gold-plated contacts

### **VALUE TO CUSTOMERS**

- Around-the-world use in hazardous areas with international approvals: UL, CSA, ATEX (CE), UKEX (UKCA), IEC Ex, INMETRO, KOSHA/KTL, and NEPSI Ex (China)
- Industry-leading breadth of product offering that includes: BX (aluminum housing) and BX2 (stainless steel housing) limit switches for hazardous locations
- 303 stainless steel operating shaft on sintered bronze bearing for enhanced mechanical life and operational reliability

#### DIFFERENTIATION

- Top-of-the-line environmental sealing combined with Honeywell expertise for hazardous location package design provides the right product for the right application
- Exclusive teller tab on levers ensures proper torque. When the tab cannot be moved, the lever is tight enough to prevent slippage

### **POTENTIAL APPLICATIONS**

- Grain elevators
- Control valves and actuators
- Off-shore and on-shore drilling
- Pipelines
- Petrochemical and chemical plants
- Water treatment plants
- Paint booths
- Conveyors (above-ground)
- Pulp and paper
- Hazardous waste handling

PORTFOLIO

Honeywell offers a wide range of limit switches in different size packages and hazardous environments. These limit switches include the BX/BX2 Series, CX Series, EX Series, LSX Series, GXS Series, and 14CE100 Series.



### Figure 1. MICRO SWITCH BX Series Features and Options

The MICRO SWITCH BX2 limit switch has similar features, except a 316L stainless steel head and body without epoxy coating.

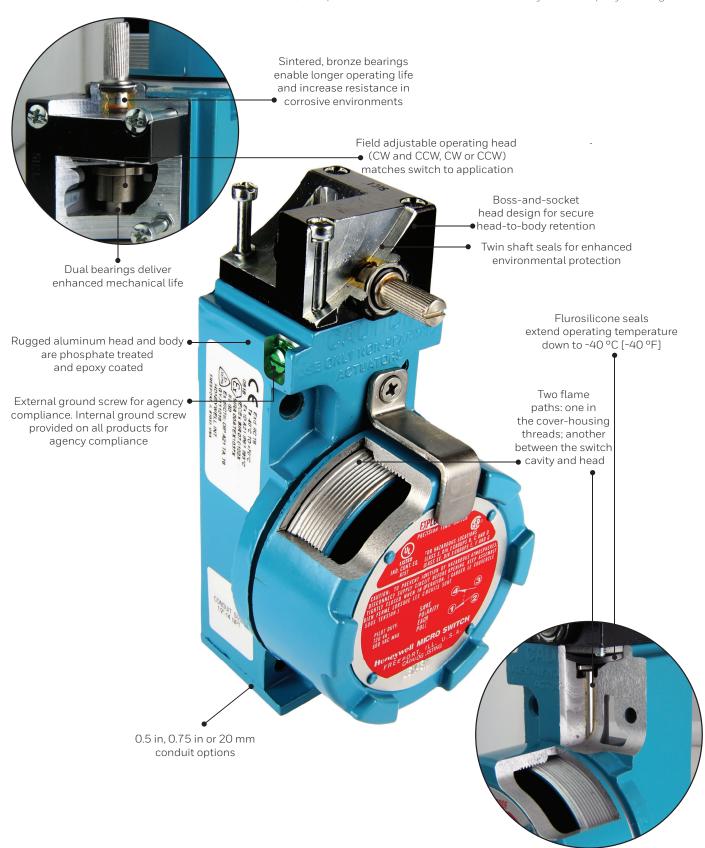


Figure 2. MICRO SWITCH BX Series Product Nomenclature

ВХ		F	3K		-
			Body/Basic	0.01	A = 1
Switch Type	Conduit Threads	Head Style*	Switch Code	Actuator Modification	Actuator Options
<b>BX</b> Series Aluminum	½ or ¾ NPT**	* Side rotary; momentary	<b>1A</b> 3NC/1NO, slow acting, 3/4-14 NPT	1 CW rotation	* Fixed Ø 0.75 in x 0.25 in W nylon roller, 1.5 in radius, front mount
Hazardous Area	<b>4</b> 20 mm	B Top rotary; momentary	3NC/1NO, slow acting, 3/4-14 NPT gold-plated contacts	2 CCW rotation	Fixed Ø 0.75 in x 0.25 in W nylon roller, 1.5 in radius, back mount
Limit Switch	** see Body/Basic Switch Code column	C * Top pin plunger, momentary	1NC/1NO, snap action, 1/2 -14 NPT gold-plated contacts	Right-oriented actuator head assembly	Adjustable, Ø 0.75 in x  0.25 in W nylon roller. back mount
<b>BX2</b> Series Stainless	NOTE: if 1/2 NPT or 3/4 NPT conduit is desired, no code is	* Top roller plunger, momentary	<b>3K</b> 1NC/1NO, snap action, 1/2 - 14 NPT	Left-oriented actuator head assembly	* Adjustable, Ø 0.75 in x 0.25 in W nylon roller. front mount
Steel Hazardous	necessary. Leave- blank.  If conduit code "4"	E * Side pin plunger; momentary	D4K 1NC/1NO, snap action, 3/4 - 14 NPT	Head assembled with actuator to mounting surface	Adjustable, Ø 1.0 in x 0.5 in W nylon roller, front mount
Area Limit Switch		* Side roller plunger; momentary	2NC/2NO, snap action, 3/4 - 14 NPT	6 Roller perpendicular to mounting surface	Adjustable, Ø 1.0 in x 0.5 in W nylon roller, back mount
Ziiiiie Owitoii		* Side rotary, momentary; low PT, low torque	4M 2NC/2NO, snap action, sequential, 3/4 - 14 NPT	8 Roller parallel to mounting surface	Yoke, Ø 0.75 in x 0.25 in W nylon rollers, same side, back mount
		<b>J</b> Wobble stick	2NC/2NO, snap action, center neutral, 3/4 - 14 NPT		4M Hub rod, aluminum
		<b>K</b> Cat whisker	2NC/2NO, snap action, 3/4 - 14 NPT gold-plated contacts		Offset, Ø 0.75 in x 0.25 in W nylon roller, back mount
		* Side rotary; sequential, momentary	2NC/2NO, snap action, sequential, 3/4-14 NPT, gold-plated contacts		Offset, Ø 0.75 in x 0.25 in W nylon roller, front mount
		* Side rotary; central neutral, momentary	2NC/2NO, snap action, center neutral, 3/4 -14 NPT, gold-plated contacts		<b>7A</b> Plastic wobble stick
		N* Side rotary; maintained	<b>7L</b> 2NC/2NO, snap action, 1/2 - 14 NPT		Cat whisker, 5.5 in
		* Side rotary, momentary; low PT and DT	<b>7N</b> 2NC/2NO, snap action, center neutral, 1/2 - 14 NPT		
		* Side rotary, momentary; low torque	gold-plated contacts		
		V Top pin plunger, adjustable, momentary	2NC/2NO, snap action, sequential,1/2 -14 NPT, gold-plated contacts		
			D 2NC (2NO 1:		

2NC/2NO, snap action, center neutral, 1/2 -14 NPT,

gold-plated contacts

 $\Delta$  Not available with conduit code 4.

Side pin plunger, adjustable, momentary

To order fluorocarbon versions, insert the additional letter  ${\bf C}$  in the appropriate places in the standard catalog listing, as shown below:

вхазк	standard, side-rotary switch
BXAC3K	completely FC-sealed version of BXA3K

<sup>\*</sup> BX2 stainless steel "head styles" and "actuators" available

TABLE 1. SPECIFICATION	JNS					
Characteristic	Parameter					
Product type	MICRO SWITCH hazardous area	limit switches				
Actuators	Side pin plunger Side rotary Top pin plunger - adjustable Wobble - cat whisker	Side pin plunger - adjustable Side rotary maintained Top roller plunger Wobble - plastic rod	Side roller plunger Top pin plunger Top rotary			
Circuitry	1NC 1NO SPDT snap action, do 2NC 2NO DPDT snap action, do 2NC 2NO DPDT snap action, do 2NC 2NO DPDT snap action, do 3NC 1NO slow action, double br	uble break uble break, sequential uble break, center neutral				
Electrical	10 A thermal Single and double pole: AC15 A6	10 A thermal Single and double pole: AC15 A600; DC13 R300 (see table on page 5)				
Housing material	Aluminum (BX) or Stainless Stee	Aluminum (BX) or Stainless Steel (BX2)				
Termination types	0.5 in - 14 NPT conduit 0.75 in - 14 NPT conduit 20 mm conduit					
Housing type	BX/BX2 non-plug-in					
Sealing	NEMA 1, 3, 4, 6, 13; IP67					
Operating temperature*		ls: -40 °C to 70 °C [-40 °F to 158 °F] s: -12 °C to 70 °C [10 °F to 158 °F]				
ATEX/IEC Ex protection class	II 2 GD, Ex db IIC T6 Gb, Ex tb III	CT85°C Db				
UNSPSC code	302119					
UNSPSC commodity	302119 Switches and controls a	and relays				

<sup>\*</sup> Reference operating head styles on page 6 for exceptions.

TABLE 2. AGEN	CY CERTIFI	CATIONS						
		UKEX (UKCA)¹ United Kingdom	ATEX (CE) <sup>1</sup> Europe	CSA , UL, or cULus <sup>3</sup> Canada, USA	IEC Ex <sup>1</sup> International	KOSHA/KTL Korea	NEPSI EX <sup>2</sup> China	INMETRO <sup>2</sup> Brazil
		UK	€x	CUL US	IECEX	<b>S</b> s	Ex NEPSI	INMETRO
	Conduit							
BX Series	M20	•	•		•	•	•	•
(aluminum)	NPT	•	•	•	•	•	•	•
BX2 Series	M20	•	•	•	•	•	•	•
(stainless steel)	NPT	•	•	•	•	•	•	•

¹ ATEX, UKEX & IEC Ex: II 2 GD; Ex db IIC T6 Gb; Ex tb IIIC T85°C Db; Ta -40 °C to 70 °C or -12 °C to 70 °C (dependent on seal material) <sup>2</sup> NEPSI Ex: GYJ111016

<sup>&</sup>lt;sup>3</sup> CSA, cUL, UL: NEMA 7 (Gas) Div 1&2, Class I, Groups B, C, & D; NEMA 9 (Dust) Div 1&2, Class II, Groups E, F, & G

### **MICRO SWITCH BX and BX2 Series Electrical Ratings** 10 A continuous carry; ac Volts; Pilot Duty: AC15, A600

Electri- cal Rating	Cir- cuitry	Vac	Amps at 0.35 Power Factor Make	Amps at 0.35 Power Factor Break
		120	60	6
AC15,	SPDT	240	30	3
A600	DPDT	480	15	1.5
		600	12	1.2

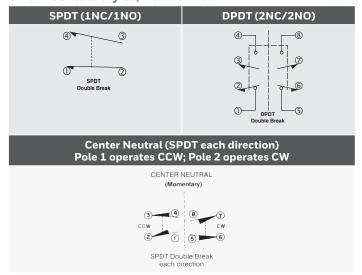
### MICRO SWITCH BX and BX2 Series Electrical Ratings dc Volts; Pilot Duty: DC13, R300

Electri- cal Rating	Cir- cuitry	Vdc	Make & Break Amps Inductive	Make & Break Amps Resistive
DC13,	SPDT	120	0.25	0.8
R300	DPDT	240	0.15	0.4

MICRO SWITCH BX and BX2 limit switches are capable of the following low voltage dc loads

Circuitry	Vdc	Amps Inductive	Amps Resistive
SPDT, DPDT	24	10	10

### **Switch Contact Styles, Double Break**



NOTE: Same polarity each pole

### **Low Temperature Limits**

For all MICRO SWITCH BX/BX2 styles, the upper temperature limit is 70 °C [158 °F], while the lower temperature limit is per the table below.

	MICRO SWITCH BX/BX2					
	Standard (Fl	uorosilicone)	Optional (Flurocarbon Sealed)			
Operating Head Styles	-40 °C [-40°F]	-29 °C [-20 °F]	-12 °C [10°F]	-1 °C [30 °F]		
BXA, BX2A - Side Rotary Momentary	•		•			
BXB - Top Rotary		•		•		
BXC, BX2C - Top Pin Plunger	•		•			
BXD, BX2D - Top Roller Plunger	•		•			
BXE, BX2E - Side Pin Plunger	•		•			
BXF, BX2F - Side Roller Plunger	•		•			
BXH, BX2H - Side Rotary, Low Pretravel and Torque		•		•		
BXJ - Wobble Stick		•		•		
BXK - Cat Whisker		•		•		
BXL, BX2L - Side Rotary, Sequential Operation	•		•			
BXM, BX2M - Side Rotary, Center Neutral	•		•			
BXN, BX2N - Side Rotary, Maintained		•		•		
BXP, BX2P - Side Rotary, Low Pretravel	•		•			
BXR, BX2R - Side Rotary, Low Torque		•		•		
BXV - Top Adjustable Plunger	•		•			
BXW - Side Adjustable Plunger	•		•			

### Fluorocarbon Sealed Switches (optional)

Fluorocarbon (FC)-sealed switches have an FC o-ring between the threaded cover and body. 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, synthetic fluids, water-based fluids, and petroleum-based fluids. The additional FC seals also promote longer operating life for rotary-actuated BX/BX2 switches in applications where the temperatures are normally elevated.

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

вхазк	standard, side-rotary switch
BXA <u>C</u> 3K	FC-sealed version of BXA3K
BX2A3K	standard, stainless steel side-rotary switch
BX2A <u>C</u> 3K	Fluorocarbon-sealed version of BX2A3K

### MICRO SWITCH BX/BX2 Series Operating Heads\*

**SIDE ROTARY:** Heads may be positioned in any one of four positions, 90° increments. All are momentary action except maintained head (BXN/BX2N Series).



BXA/BX2A - Standard: 60° minimum overtravel, 15° maximum pretravel, 5° (single pole) and 7° (double pole) maximum differential travel.

BXR/BX2R - Low operating torque: 60° minimum overtravel, 15° maximum pretravel, 0.19 Nm [1.7 in lb] maximum operating torque.

BXN/BX2N - Maintained contact: Maintained on counterclockwise rotation and reset on clockwise rotation, and vice versa.

BXP/BX2P - Low differential: 68° minimum overtravel, 9° maximum pretravel, 3° (single pole) and 4° (double pole) maximum differential travel.

BXH/BX2H - Low torque, low differential travel: 68° minimum overtravel. Features low operating torque and narrow differential travel.

BXL/BX2L - Sequential operation: 48° minimum overtravel. Delayed action between operation of two poles.

BXM/BX2M - Center neutral: 57° minimum overtravel. One pole operates on the clockwise rotation, and the other pole on the counterclockwise rotation.

\*BX Series epoxy-coated zinc heads are shown for illustration. BX2 Series heads are 316L stainless steel.

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



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

**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. All are momentary action.



BXC/BX2C - Top pin plunger: A copper alloy plunger for in-line actuating motion. Oil-tight seals on plunger and between the operating head and housing keep out coolant, dust, and chips.



BXD/BX2D - 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.



BXV - Adjustable top pin plunger: A copper alloy adjustable plunger provides easy application and saves on installation time. The operating points of the switch can be adjusted from 52,8 mm to 59,3 mm [2.085 in to 2.335 in]. Seals are the same as the pin plunger.

### MICRO SWITCH BX/BX2 Series Operating Heads

SIDE PLUNGERS: Available with 4,83 mm [0.19 in] minimum overtravel. Side plungers are offered in pin plunger, adjustable pin plunger, and a roller plunger. All are momentary action.



BXE/BX2E - 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 keep out coolant, dust, and chips.

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



**BXK - Plastic rod:** Recommended where possible scratching or marring by the actuator is to be avoided.



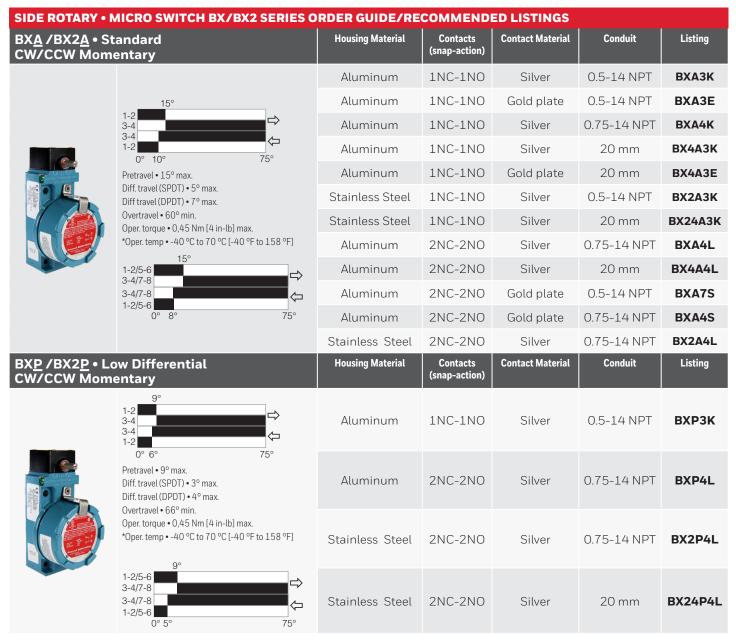
BXJ - Cat whisker: Copper alloy actuator designed for low operating force applications.



BXF/BX2F - 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. The roller can be turned verti-<u>cal or horizontal to the switch</u>. Boot seal on plunger.



BXW - 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].



Contact closed ■: Contact open □

Actuating head is factory set for CW and CCW actuation. Easily field adjusted for CW or CCW per instructions included with switch.

NOTE: Same polarity each pole.

<sup>\*</sup> Operating temperature range for standard fluorosilicone sealed switch. For optional fluorocarbon sealed switch, see temperature table, page 8. To order a fluorocarbon sealed version, insert the additional letter "C" in the standard catalog listing, as follows. The BXA3K limit switch is changed to a BXAC3K limit switch.



Contact closed ■; Contact open □

Actuating head is factory set for CW and CCW actuation. Easily field adjusted for CW or CCW per instructions included with switch. NOTE: Same polarity each pole.

<sup>\*</sup>Operating temperature range for standard fluorosilicone sealed switch. For optional fluorocarbon sealed switch, see temperature table, page 8. To order a fluorocarbon sealed version, insert the additional letter "C" in the standard catalog listing, as follows. The BXA3K limit switch is changed to a BXAC3K limit switch.

( <u>N</u> • Mainta CW (trip), C\	ined, Two Position W (Reset)	Housing Material	Contacts (snap-action)	Contact Material	Conduit	Listing
	65° 1-2 3-4 3-4	Aluminum	1NC-1NO	Silver	0.5-14 NPT	вхизк
	0° 25° 85°  Pretravel • 65° max.  Diff. travel • 40° max.	Aluminum	1NC-1NO	Silver	20 mm	BX4N3
	Overtravel • 20° min.  Oper. torque • 0,45 Nm [4 in-lb] max.  *Oper. temp • -29 °C to 70 °C [-20 °F to 158 °F]  65°  1-2/5-6	Aluminum	2NC-2NO	Silver	0.75-14 NPT	BXN4I
	3-4/7-8 3-4/7-8 1-2/5-6 0° 25° 85°	Aluminum	2NC-2NO	Silver	20 mm	BX4N4
( <u>M</u> • Center V and CCW	Neutral, Momentary	Housing Material	Contacts (snap-action)	Contact Material	Conduit	Listing
	Pretravel • 18° max.  Diff. travel • 10° max.  Overtravel • 57° min.  Oper. torque • 0,45 Nm [4 in-lb] max.  *Oper. temp • -40 °C to 70 °C [-40 °F to 158 °F]  75° 18° 0° 75°  1-2 3-4	Aluminum	2NC-2NO	Silver	0.75-14 NPT	BXM4I
	3-4 1-2 CCW 8° CW 75° 0° 18° 75° 5-6 7-8 7-8	Aluminum	2NC-2NO	Silver	20 mm	BX4M4

Contact closed  $\blacksquare$ ; Contact open  $\square$ NOTE: Same polarity each pole.

<sup>\*</sup>Operating temperature range for standard fluorosilicone sealed switch. For optional fluorocarbon sealed switch, see temperature table, page 8. To order a fluorocarbon sealed version, insert the additional letter "C" in the standard catalog listing, as follows. The BXA3K limit switch is changed to a BXAC3K limit switch.

### TABLE 3. COMMON LEVERS FOR USE WITH MICRO SWITCH BX ROTARY SWITCHES\*

Levers 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 LSZ52C - front mount



LSZ52J adjustable lever,



LSZ52K lever, nylon roller 38,1 [1.5 in]



LSZ54M 140 mm [5.5 in]



LSZ61 152 mm [6 in]



LSZ67CA\*\* Plastic conveyor



LSZ68 rod with spring 305 mm [12 in]

<sup>\*</sup> Non-sparking rollers and actuators must be used in hazardous areas.

<sup>\*\*</sup> May require orientation of switch and lever to enable gravity to help restore switch's free position.

TABLE 4. BX/E	3X2 SERIE	S L <u>EVER</u>	ORDE	R GUID	E
	Catalog Listing	Material	Roller Dia. mm [in]	Roller Width mm [in]	Roller Mounting
	Fixed 38,1 [ LSZ51	1.5] inch rad Rollerless	ius n/a	n/a	n/a
	LSZ51A	Nylon	19 [0.75]	6,35 [0.25]	Front
3	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
100	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
	LS2Z51A (sst)	Nylon	19 [0.75]	6,35 [0.25]	Front
	LS2Z51C(sst)	Nylon	19 [0.75]	6,35 [0.25]	Back
	LS2Z51E (sst)	Copper alloy	19 [0.75]	6,35 [0.25]	Front
	LS2Z51F(sst)	Copper alloy	19 [0.75]	6,35 [0.25]	Back
	Adjustable	38,1 [1.5] in t	o 3.5 in ra		
	LSZ52	Rollerless	n/a	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
I	LSZ52M	Nylon	50,8 [2.0]	6,35 [0.25]	Front
	LSZ52N	Nylon	19 [0.75]	12,7 [0.50]	Front
	LS2Z52A (sst)	Nylon	19 [0.75]	6,35 [0.25]	Front
	LS2Z52C (sst)	Nylon	19 [0.75]	6,35 [0.25]	Back
	LS2Z52E (sst)	Copper alloy	19 [0.75]	6,35 [0.25]	Front
	LS2Z52F (sst)	Copper alloy	19 [0.75]	6,35 [0.25]	Back
	Yoke - 38,1	[1.5] in radiu	IS		
<b>a</b>	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	n/a
	LSZ54M	Alum, 140 mm [5.5 in]	Ø 3,2 [Ø 0.125]	n/a	n/a
	LSZ54N	Stainless, 330 mm [13 in]	Ø 3,2 [Ø 0.125]	n/a	n/a
	LSZ54P	Plastic rod, 305 mm [12 in]	Ø6,85 [Ø 0.27]	n/a	n/a
ho	LSZ54W	Plastic rod, 183 mm [7.2 in]	Ø6,85 [Ø 0.27]	n/a	n/a

TABLE 4. BX/B	X2 SERIE	SLEVER	ORDE	R GUIDI	E	
	Catalog Listing	Material	Roller Dia. mm [in]	Roller Width mm [in]	Roller Mounting	
		1 [1.5] in rad				
	LSZ55	Rollerless	n/a	n/a 6,35	n/a	
	LSZ55A	Nylon	19 [0.75]	[0.25]	Back	
O. C.	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	
	Short fixed	- 1.3 in radiu	s			
	LSZ59A	Nylon	19 [0.75]	6,35 [0.25]	Front	
9	LSZ59C	Nylon	19 [0.75]	6,35 [0.25]	Back	
	One-way ro	ller lever				
	LSZ60A	Nylon	19 [0.75]	6,35 [0.25]	Front	
	Flexible loo	p				
$\cap$	LSZ61	Ø 4,8 [Ø 0.19 ] Nylatron	9] 152 mm [6 in] flexible loop			
	LSZ618	Ø 4,8 [Ø 0.19 ] Nylatron	19] 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	
a de la constante de la consta	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 roll	er levers				
	LSZ51Y 38,1 [1.5] radius (standard)	Rubber	50 [2.0]	12,7 [0.5]	front	
	LSZ55Y 38,1 [1.5] radius (offset)	Rubber	50 [2.0]	12,7 [0.5]	front	
	LSZ52Y 38,1 to 89 [1.5 to 3.5] radius (adjustable)	Rubber	50 [2.0]	12,7 [0.5]	front	
	Plastic rolle	er levers				
- 1	LSZ67AA (conveyor)*	Plastic	38,1 [1.5]	96,5 [3.8]	n/a	

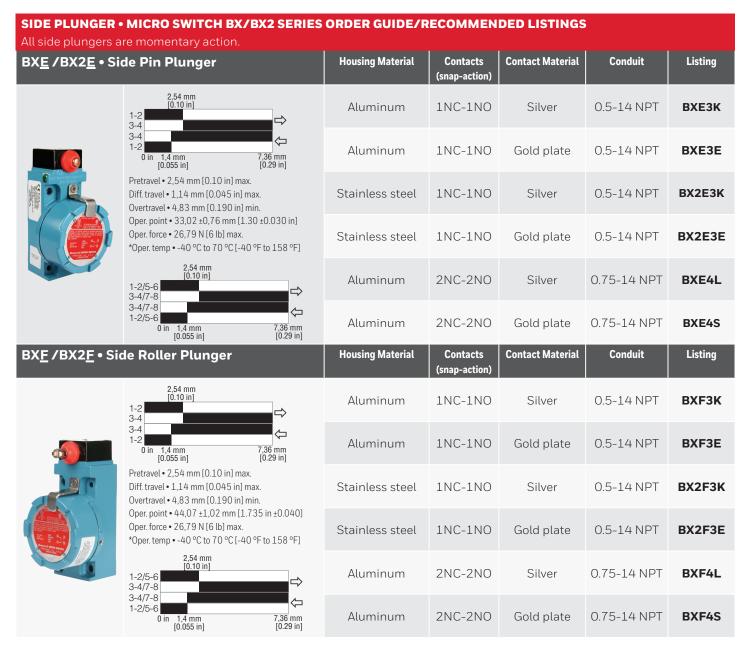
<sup>\*</sup> May require orientation of switch and lever to enable gravity to help restore switch to free position.



Contact closed  $\blacksquare$ ; Contact open  $\square$ 

NOTE: Same polarity each pole.

<sup>\*</sup> Operating temperature range for standard fluorosilicone sealed switch. For optional fluorocarbon sealed switch, see temperature table, page 8. To order a fluorocarbon sealed version, insert the additional letter "C" in the standard catalog listing, as follows. The BXASK limit switch is changed to a BXAC3K limit switch.



Contact closed ■; Contact open □ NOTE: Same polarity each pole.

<sup>\*</sup>Operating temperature range for standard fluorosilicone sealed switch. For optional fluorocarbon sealed switch, see temperature table, page 8. To order a fluorocarbon sealed version, insert the additional letter "C" in the standard catalog listing, as follows. The BXA3K limit switch is changed to a BXAC3K limit switch.

WOBBLE • MICRO SWITCH BX/BX2 SERIES ORDER GUIDE/RECOMMENDED LISTINGS							
BX <u>J</u> • Wobble,	Plastic Rod (7A Actuator)	Housing Material	Contacts (snap-action)	Contact Material	Conduit	Listing	
	12° 1-2 3-4 3-4 1-2 0° 8° 40°	Aluminum	1NC-1NO	Silver	0.5-14 NPT	BXJ3K-7A	
		Aluminum	1NC-1NO	Silver	20 mm	BX4J3K-7A	
	Actuator length • 152 mm [6 in] Pretravel • 25,4 mm [1.0 in] max.  Oper. force • 2,8 N [10 oz] max.  *Oper. temp • -29 °C to 70 °C [-20 °F to 158 °F]	Aluminum	1NC-1NO	Gold plate	0.5-14 NPT	BXJ3E-7A	
	12° 1-2/5-6 3-4/7-8 3-4/7-8 1-2/5-6 0° 8° 40°	Aluminum	2NC-2NO	Silver	0.75-14 NPT	BXJ4L-7A	
		Aluminum	2NC-2NO	Silver	20 mm	BX4J4L-7A	
BX <u>K</u> • Wobble, Cat Whisker (8A Actuator)		Housing Material	Contacts (snap-action)	Contact Material	Conduit	Listing	
	25° 1-2 3-4 1-2 0° 15° 50°  Actuator length • 152 mm [6 in] Pretravel • 50,8 mm [2.0 in] max. Oper. force • 1,4 N [5 oz] max. *Oper. temp • -29 °C to 70 °C [-20 °F to 158 °F]  25° 1-2/5-6 3-4/7-8 3-4/7-8 1-2/5-6 0° 15° 50°	Aluminum	1NC-1NO	Silver	0.5-14 NPT	BXK3K-8A	
		Aluminum	1NC-1NO	Gold plate	0.5-14 NPT	BXK3E-8A	
		Aluminum	2NC-2NO	Silver	0.75-14 NPT	BXK4L-8A	
		Aluminum	2NC-2NO	Silver	20 mm	BX4K4L-8A	

Contact closed  $\blacksquare$ ; Contact open  $\square$ NOTE: Same polarity each pole.

<sup>\*</sup> Operating temperature range for standard fluorosilicone sealed switch. For optional fluorocarbon sealed switch, see temperature table, page 8. To order a fluorocarbon sealed version, insert the additional letter "C" in the standard catalog listing, as follows. The BXA3K limit switch is changed to a BXAC3K limit switch.

REPLACEMENT CONTACT BLOCKS				
Circuitry	Replacement Contact Block			
Single pole	LSXZ3K			
Double pole	LSXZ3L			
Sequence or central neutral	LSXZ3M			

REPLACEMENT HEADS for STANDARD BX Switches				
Switch Type	Catalog Listing/Operating Head Only			
BXA	LSZ1AB			
BXB	LSZ1BB			
BXC	LSXZ1CB			
BXD	LSXZ1DB			
BXE	LSXZ1EB			
BXF	LSXZ1FB			
BXH	LSZ1HB			
BXJ	LSZ1JBGA			
BXK	LSXZ1KBHA			
BXL	LSZ1LB			
BXM	LSZ1MB			
BXP	LSZ1PB			
BXR	LSZ1RB			
BXV	LSXZ1VB			
BXW	LSXZ1WB			

### **ASSEMBLY MODIFICATIONS**

Momentary action rotary switches can be furnished in other than the normal assembled conditions. To specify modifications, add the numbers shown below to the catalog listings. Modification number suffixes are:

- Clockwise actuation only
- 2 Counterclockwise actuation only
- Shaft to right of switch front
- 4 Shaft to left of switch front
- 5 Shaft to back of switch

### For example,

Catalog listing BXA3K23 is a BXA3K switch adjusted for counterclockwise actuation only. The operating shaft is to the right side of the switch when viewing it from the front (label side). No lever.

### PLUNGER ASSEMBLY MODIFICATIONS

Add the following modification numbers to the catalog listing in the plunger switch:

- Side plunger to right of switch front
- 4 Side plunger to left of switch front
- Side plunger to back of switch
- Roller on top plungers perpendicular to mounting surface
- Roller on side plungers in vertical position

### For example,

Catalog listing BXF3K3 is a BXF3K switch with the side roller plunger to the right side.

## **MICRO SWITCH HAZARDOUS AREA SWITCHES**

## **BX/BX2 SERIES**

Figure 3. MICRO SWITCH BX Series Side Rotary Product Dimensions • mm [in] Side Rotary - Head Codes: A, H, L, M, N, P, Q, AND R

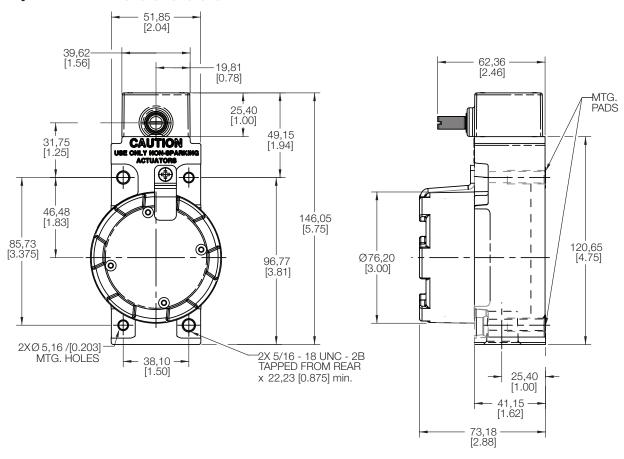


Figure 4. MICRO SWITCH BX Series Wobble Stick, Head Code J • mm [in]

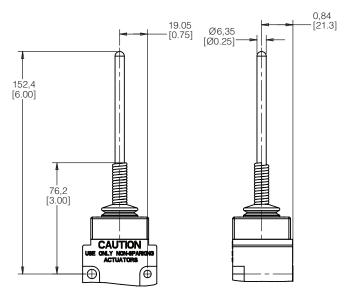
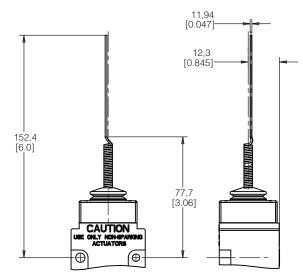


Figure 5. MICRO SWITCH BX SERIES Cat Whisker Wobble, Head Code K • mm [in]



## MICRO SWITCH HAZARDOUS AREA SWITCHES

### **BX/BX2 SERIES**

Figure 6. MICRO SWITCH BX Series Top Rotary, Head Code B • mm [in]

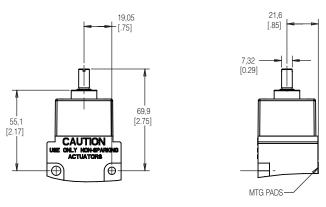


Figure 8. MICRO SWITCH BX Series Top Roller Plunger, Head Code D • mm [in]

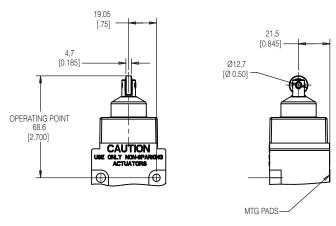


Figure 11. MICRO SWITCH BX Series Adjustable Top Pin Plunger, Head Code V • mm [in]

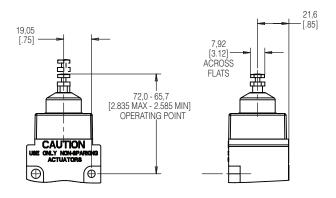


Figure 7. MICRO SWITCH BX Series Top Pin Plunger, Head Code C • mm [in]

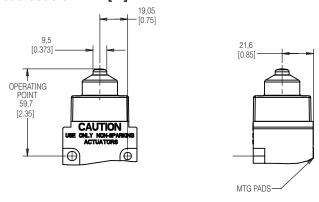


Figure 9. MICRO SWITCH BX Series Side Plunger, Head Code E • mm [in]

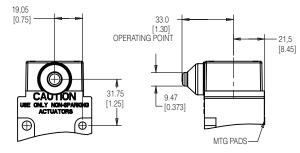


Figure 10. MICRO SWITCH BX Series Side Roller Plunger, Head Code F • mm [in]

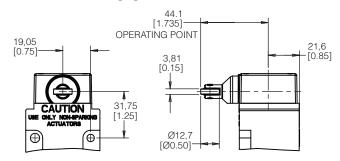


Figure 12. MICRO SWITCH BX Series Adjustable Side Pin Plunger, Head Code W • mm [in]

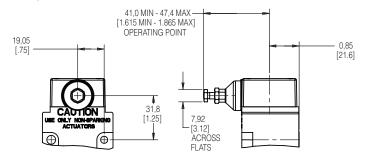


Figure 13. MICRO SWITCH BX2 Series Side Rotary Product Dimensions • mm [in] Side Rotary - Head Codes: A, P, AND R

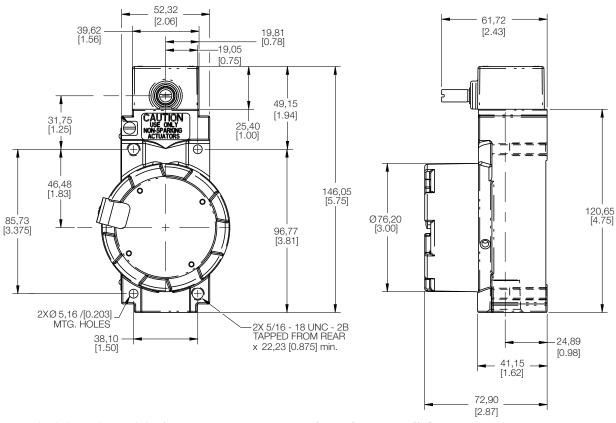


Figure 14. MICRO SWITCH BX2 Series Top Plunger Product Dimensions • mm [in] Top Plunger - Head Codes: C and D

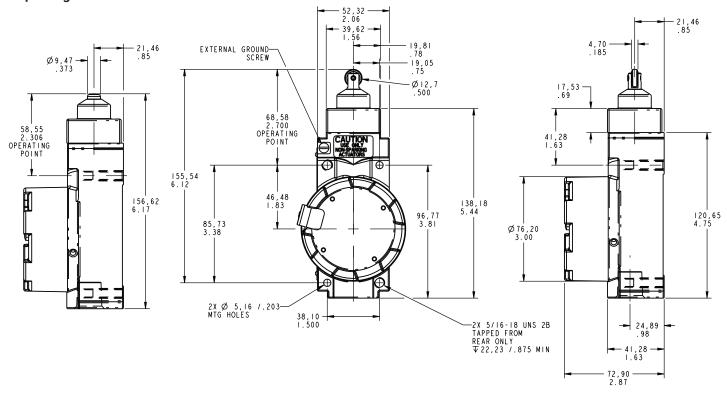
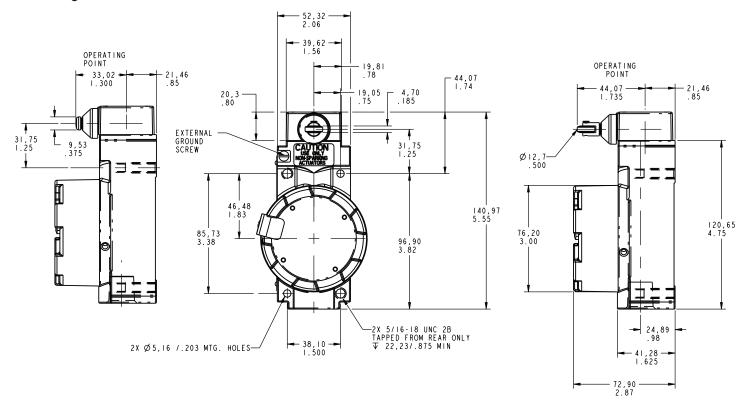


Figure 15. MICRO SWITCH BX2 Series Side Plunger Product Dimensions • mm [in] Side Plunger - Head Codes: E and F



### **ADDITIONAL MATERIALS**

The following associated literature is available on the Honeywell web site at sps.honeywell.com/ast:

- Product installation instructions
- Product range guide
- Hazardous area product brochure
- Product application-specific information
  - Application Note: Gas Recovery Unit and Other O&G Drilling Applications
  - Application Note: Pipeline Pig Passage Detection/Indicator Applications
  - Application Note: Electronic Sensors and Electromechanical Switches in Valves and Flow Meters
  - Application Note: Sensors and Switches Used in Valve Actuators and Valve Positioners
  - Application Note: Sensors and Switches for Industrial Manual Process Valves
  - Sensors and Switches in Oil Rig Applications

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Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

# **⚠ 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**MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only.
   Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

### FOR MORE INFORMATION

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