



MICRO SWITCH Weather-Sealed, Explosion-Proof Switches **CX Series**



MICRO SWITCH CX Series

Weather-Sealed, Explosion-Proof Switches

MICRO SWITCH CX switches are built especially for outdoor use in hazardous atmospheres. These enclosures are constructed to withstand the pressure of an internal explosion. Flame paths cool the exploded gases to a point less than the lowest safe operating temperature of the surrounding gas.

MICRO SWITCH 80CX Series switches have rugged bronze housings that are designed to be resistant to salt water and other corrosive environments. They comply with the NEMA 4X requirement for protection against corrosion, in addition to NEMA enclosure standards met by other CX switches.

The product's o-ring seals make the enclosure rain tight, but are outside of required flame paths so explosion proof requirements are maintained. Unless special ordered, all basic switches operate on clockwise and counterclockwise rotation. The actuating mechanism can be field adjusted for CW or CCW operation only. No tools are required.

What makes our switches better?

- Building block design allows for digital switching outputs
- Weather sealed to NEMA and IP ratings
- UL, CSA, ATEX, IEC Ex, INMETRO certified for hazardous (explosive) environments
- Designed with the end user in mind, these switches help to create user-friendly interfaces with broad application possibilities to help meet the challenges of many different environments
- Available with gold contacts, low-temp seals, and bronze corrosion-resistant housing



COST OPTIMIZATION
RELIABILITY • GLOBALLY ACCEPTED

Features and Benefits

WELL-SUITED FOR EXPLOSIVE ENVIRONMENTS

MICRO SWITCH CX Series switches are certified for applicable portions of **NEMA 7 and 9** for hazardous locations (explosive environments). Select CX switches are certified to ATEX, IEC Ex, and INMETRO specifications for global applications.

Available with digital or analog outputs

WATERTIGHT AND DUST-TIGHT FOR OUTDOOR USE

Due to its engineering design and sealing (NEMA 1, 3, 4, 4X, 6, 6P, and 13), the MICRO SWITCH CX Series is rated for **rain, wind, snow, ice, and blowing dust environments**.

CORROSION RESISTANT

Bronze housing material is available on 80CX Series catalog listings.

MEETS HAZARDOUS AREA REQUIREMENTS

UL Listed, file #E14274, CSA Certified, file #LR57324, ATEX certificate KEMA 01ATEX2111 X, IEC Ex certificate IEC Ex TSA 06.003X, and INMETRO certificate TUV 14.0553.

OPTIONAL HOUSING CHOICES

CX Series switches offer a **choice of rugged cast aluminum or bronze housings**. Both housings withstand harsh environments, and bronze is available for use in corrosive environments.

UNIQUE DESIGN FEATURES

Featuring **field-adjustability**, the CX Series allows pretravel, overtravel, and actuating sequence to be field adjusted without tools (all basics can be adjusted individually). Rotary types convert in seconds to clockwise, counterclockwise, or both-way operation. These features **may help to reduce set up time** while allowing for quick and easy changes to switch operation.

Potential Applications



INDUSTRIAL

- Seaside grain and fuel loading docks that may require explosion proof and corrosion resistant switches
- Oil and gas wells, refineries, and fuel storage facilities that may require explosion proof and corrosion resistant switches
- Chemical plants with corrosive environments



Table 1. Specifications

Characteristic	Parameter
Actuators	side rotary (choice of levers), side rotary (with flat shaft), plunger actuator
Housing material	aluminum with electrostatic epoxy coating or corrosion resistant bronze
Termination	3/4 x 14 NPT, M25 x 1,5 mm conduit
Sealing	NEMA 1, 3, 4, 4X, 6, 6P, and 13; IP66
Hazardous area designations	NEMA 7: Class I, Div.1 & Div. 2, Groups B (14CX, 16CX, 24CX, 26CX, 36CX only), C, and D; NEMA 9: Class II, Div.1 & Div. 2, Groups E, F, and G ATEX/IEC Ex, INMETRO (Gas) II 2 G; Exd IIC T6 ATEX/IEC Ex, INMETRO (Dust) II 2 D; Exd tD A21 T85°C
Operating temperature	-25 °C to 85 °C [-13 °F to 185 °F]
Agency approvals	UL Listed, file #E14274 CSA Certified, file #LR57324 ATEX certificate KEMA 01ATEX2111 X IEC Ex certificate IEC Ex TSA 06.003X INMETRO certificate TUV 14.0553

Table 2. Electrical Ratings (in amperes)

Rating Code	Switch Description	UL/CSA
A	BZ basic switch, SPDT	15 A 120/240/480 Vac; 1/8 HP, 120 Vac 1/4 HP, 240 Vac; 0.5 A, 125 Vdc; 0.25 A, 250 Vdc
B	BA basic switch, SPDT	20 A 120/240/480 Vac; 1 HP, 120 Vac; 2 HP, 240 Vac; 0.5 A, 125 Vdc; 0.25 A, 250 Vdc
C	DT basic switch, DPDT	10 A 120/240/480 Vac, 0.3 A 125 Vdc; 0.15 A, 250 Vdc
D	HS basic switch (hermetic sealed), SPDT	1 A, 125 Vac; 5 A, 28 Vdc
F	BZ basic switch (gold contacts) SPDT	1 A, 125 Vac

MICRO SWITCH Weather-Sealed, Explosion-Proof Switches

PRODUCT NOMENCLATURE

Switch Type	1 Housing Style & Actuator Type	1 Circuitry	CX Switch Type	2 Switches	Additional Options
CX Series Hazardous Area Limit Switch	1 Short housing, side rotary	1 15 A, SPDT basic switch/es	CX Momentary	1 One switch	Non-threaded thru holes
	2 Standard housing, side rotary	2 20 A, SPDT basic switch/es	CX1 Maintained	2 Two switches	A Side mounting, 5/16-18(8)
	3 Short housing, plunger actuator	4 10 A, DPDT basic switch/es		3 Three switches	B Thru mounting, 3/8-24(4)
	4 Standard housing, plunger actuator	6 1 A, SPDT, hermetically sealed basic switch/es		4 Four switches	C Low temperature
	6 Short housing, black epoxy	172 1 A, SPDT, gold-plated contacts, basic switch/es		5 Two switches, one CW oper., one CCW oper.	E ATEX/IEC Ex/ INMETRO certified with cover clamp
	7 Stand. housing, bronze material, 5/16-18 UNC-2B mtg holes				M Metric, M25 x 1.5 conduit
	8 Standard housing, bronze material				D01 Flat shaft
	9 Switch assemblies (replacement)				00 Or other numbers, various specials

Other special configurations may be available.
For more information, contact your Honeywell representative.

CX Series

Table 3. Order Guide

When factory assembled, all basic switches operate on a clockwise and counter clockwise rotation. The actuating mechanism can be field adjusted for CW or CCW operation only. No tools are required. For listings not shown, contact your Honeywell representative.

	Cat. Listing ¹	Housing Material	Cover Size	Switch Action ²	Basic Switch Type, Quantity, Circuitry	Electrical Rating (Page 4)	
	11CX12	Epoxy-coated aluminum	Short	Maintained	BZ (2), SPDT each	A (15 A)	
	11CX12E	Epoxy-coated aluminum	Short	Maintained	BZ (2), SPDT each	A (15 A)	
	11CX2	Epoxy-coated aluminum	Short	Momentary	BZ (2), SPDT each	A (15 A)	
	11CX2E	Epoxy-coated aluminum	Short	Momentary	BZ (2), SPDT each	A (15 A)	
	1172CX2	Epoxy-coated aluminum	Short	Momentary	BZ (2), SPDT each	F (1 A)	
	11CX5C	Epoxy-coated aluminum	Short	Momentary	BZ (2), SPDT each	A (15 A)	
	11CX212	Epoxy-coated aluminum	Short	Maintained	BZ (2), SPDT each	A (15 A)	
	12CX12	Epoxy-coated aluminum	Short	Maintained	BA (2), SPDT each	B (20 A)	
	12CX12-D01	Epoxy-coated aluminum	Short	Maintained	BA (2), SPDT each	B (20 A)	
	12CX15-D01	Epoxy-coated aluminum	Short	Maintained	BA (2), SPDT each	B (20 A)	
	12CX2	Epoxy-coated aluminum	Short	Momentary	BA (2), SPDT each	B (20 A)	
	12CX2A	Epoxy-coated aluminum	Short	Momentary	BA (2), SPDT each	B (20 A)	
	12CX2AE	Epoxy-coated aluminum	Short	Momentary	BA (2), SPDT each	B (20 A)	
	12CX5E	Epoxy-coated aluminum	Short	Momentary	BA (2), SPDT each	B (20 A)	
	12CX200	Epoxy-coated aluminum	Short	Maintained	BA (2), SPDT each	B (20 A)	
	14CX1E	Epoxy-coated aluminum	Short	Momentary	DT (1), DPDT	C (10 A)	
	16CX1	Epoxy-coated aluminum	Short	Momentary	HS (1), SPDT	D (1 A)	
	16CX1E	Epoxy-coated aluminum	Short	Momentary	HS (1), SPDT	D (1 A)	
	16CX2	Epoxy-coated aluminum	Short	Momentary	HS (2), SPDT each	D (1 A)	
	16CX2C	Epoxy-coated aluminum	Short	Momentary	HS (2), SPDT each	D (1 A)	
	16CX12	Epoxy-coated aluminum	Short	Maintained	HS (2), SPDT each	D (1 A)	
	21CX4	Epoxy-coated aluminum	Standard	Momentary	BZ (4), SPDT each	A (15 A)	
	21CX12F	Epoxy-coated aluminum	Standard	Maintained	BZ (2), SPDT each	A (15 A)	
	21CX14	Epoxy-coated aluminum	Standard	Maintained	BZ (4), SPDT each	A (15 A)	
	22CX4	Epoxy-coated aluminum	Standard	Momentary	BA (4), SPDT each	B (20 A)	
	24CX2	Epoxy-coated aluminum	Standard	Momentary	DT (2), DPDT each	C (10 A)	
	26CX4	Epoxy-coated aluminum	Standard	Momentary	HS (4) SPDT each	D (1 A)	
	26CX14	Epoxy-coated aluminum	Standard	Maintained	HS (4) SPDT each	D (1 A)	
	26CX16	Epoxy-coated aluminum	Standard	Maintained	HS (4) SPDT each	D (1 A)	
	74CX2	Bronze	Standard	Momentary	DT (2) DPDT each	D (10 A)	
	81CX2	Bronze	Standard	Momentary	BZ (2) SPDT each	A (15 A)	
	82CX2A	Bronze	Standard	Momentary	BA (2) SPDT each	B (20 A)	

¹ Basic switches operate nearly simultaneously in multiple switch devices

² Shafts of devices without spring return can be rotated through 360°

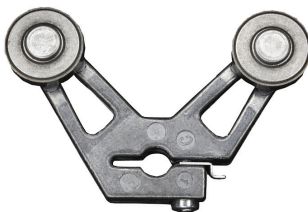
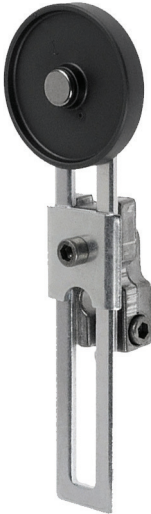
MICRO SWITCH Weather-Sealed, Explosion-Proof Switches

	Operating Torque Nm [In-lb]	Pretravel max.	Differential Travel max.	Overtravel min.	Options	Comments
	0,5 Nm [4.42 in-lb]	15°	10°	90°	–	–
	0,5 Nm [4.42 in-lb]	15°	10°	90°	ATEX/IEC Ex/INMETRO certified	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	–	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	ATEX/IEC Ex/INMETRO certified	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	–	Gold-plated switch contacts
	1,25 Nm [11.1 in-lb]	15°	10°	90°	Low temperature seals	1 switch operates CW, 1 switch operates CCW
	0,5 Nm [4.42 in-lb]	15°	10°	90°	–	Cam provides ~ 30° actuation in 360° rotation for each basic switch
	0,5 Nm [4.42 in-lb]	15°	10°	90°	–	–
	0,5 Nm [4.42 in-lb]	15°	10°	90°	Flat shaft for direct coupling	–
	0,5 Nm [4.42 in-lb]	15°	10°	90°	Flat shaft for direct coupling	1 switch operates CW, 1 switch operates CCW
	1,25 Nm [11.1 in-lb]	15°	10°	90°	–	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	Threaded mounting holes, side (8)	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	Threaded mounting holes, side (8), ATEX/IEC Ex/INMETRO certified	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	ATEX/IEC Ex/INMETRO certified	1 switch operates CW, 1 switch operates CCW
	0,5 Nm [4.42 in-lb]	–	–	–	–	Cam provides approximately 30° actuation in 360° rotation for each basic switch
	1,25 Nm [11.1 in-lb]	30°	25°	75°	ATEX/IEC Ex/INMETRO certified	–
	1,25 Nm [11.1 in-lb]	30°	20°	75°	–	Hermetic sealed basic switch
	1,25 Nm [11.1 in-lb]	30°	20°	75°	ATEX/IEC Ex/INMETRO certified	Hermetic sealed basic switch
	1,25 Nm [11.1 in-lb]	30°	20°	75°	–	Hermetic sealed basic switches
	1,25 Nm [11.1 in-lb]	30°	20°	75°	Low temperature seals	Hermetic sealed basic switches
	0,5 Nm [4.42 in-lb]	30°	20°	75°	–	Hermetic sealed basic switches
	1,25 Nm [11.1 in-lb]	15°	10°	90°	–	–
	0,5 Nm [4.42 in-lb]	15°	10°	90°	–	Two basic switches. 4 sets of cams & return springs
	0,5 Nm [4.42 in-lb]	15°	10°	90°	–	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	–	–
	1,25 Nm [11.1 in-lb]	30°	25°	75°	–	–
	1,25 Nm [11.1 in-lb]	30°	20°	75°	–	Hermetic sealed basic switches
	0,5 Nm [4.42 in-lb]	30°	20°	75°	–	Hermetic sealed basic switches
	0,5 Nm [4.42 in-lb]	30°	20°	75°	–	Hermetic sealed basic switches, two switches operate CW, two switches operate CCW
	1,25 Nm [11.1 in-lb]	30°	25°	75°	–	Threaded mounting holes, side (8)
	1,25 Nm [11.1 in-lb]	15°	10°	90°	–	–
	1,25 Nm [11.1 in-lb]	15°	10°	90°	Threaded mounting holes, side (8)	–

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Table 4. Rotary Levers

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			
					
Adj. 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 w/ spring 305 mm [12 in]			

** May require orientation of switch and lever to enable gravity to help restore switch's free position.
Non-sparking rollers and actuators must be used in hazardous areas.

CX Series

Table 5. Rotary Levers Order Guide

Catalog Listing	Material	Roller Dia. mm [in]	Roller Width mm [in]	Roller Mounting
Fixed – 38,1 [1.5] inch 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 [1.5] in to 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 [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 [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 – 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
Spring rod				
	LSZ68	Delrin rod, 305 mm [12 in]	Ø 6,35 [0.25]	n/a
	LSZ617	Delrin rod, 406 mm [16 in]	Ø 6,35 [0.25]	n/a
	LSZ686	Delrin rod, 152 mm [6 in]	Ø 6,35 [0.25]	n/a
Rubber roller 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 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.

MICRO SWITCH Weather-Sealed, Explosion-Proof Switches

DIMENSIONS mm[in]

Figure 1. MICRO SWITCH CX - side rotary standard housing

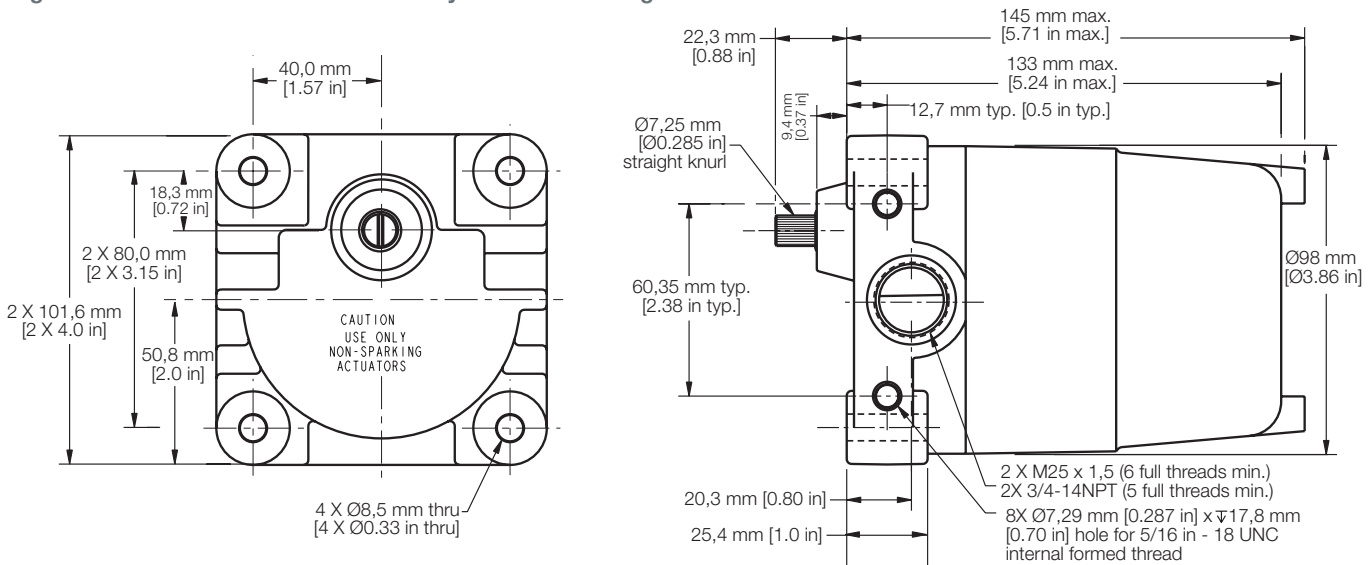


Figure 2. MICRO SWITCH CX - side rotary short housing

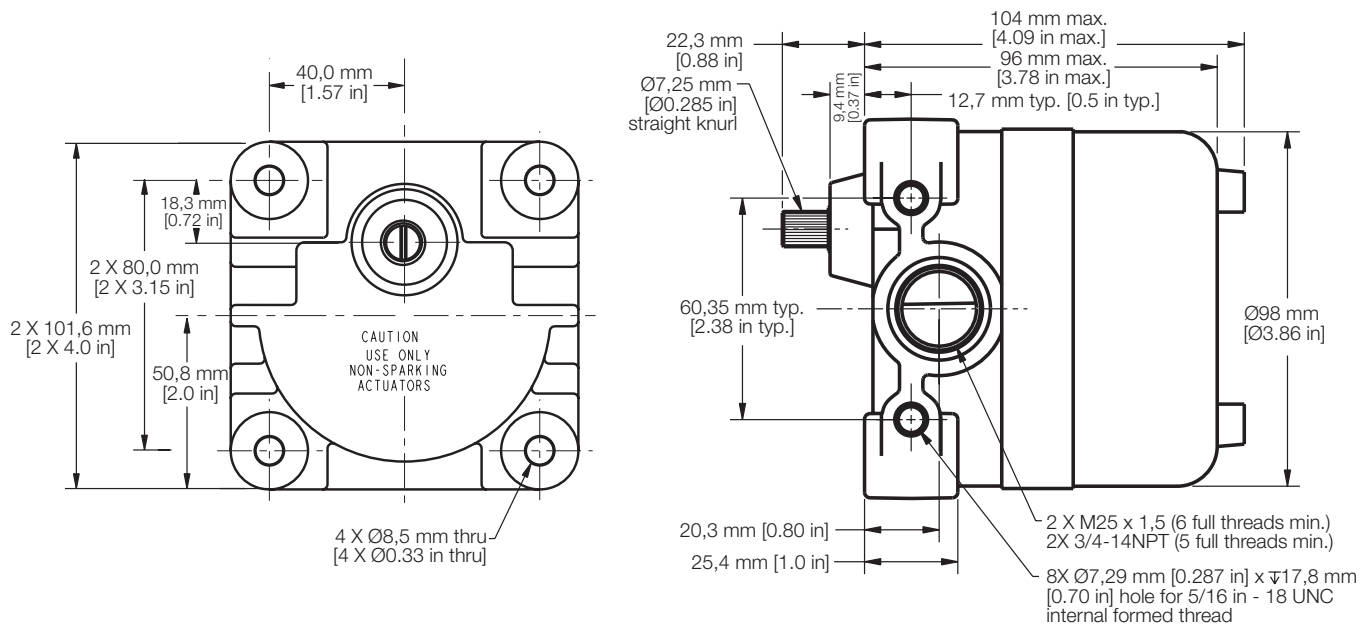
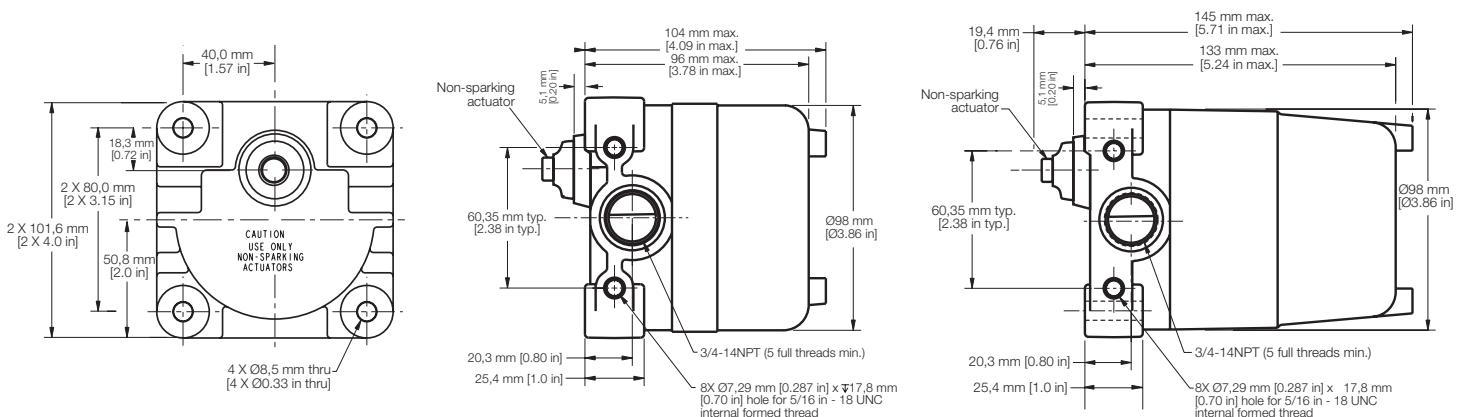


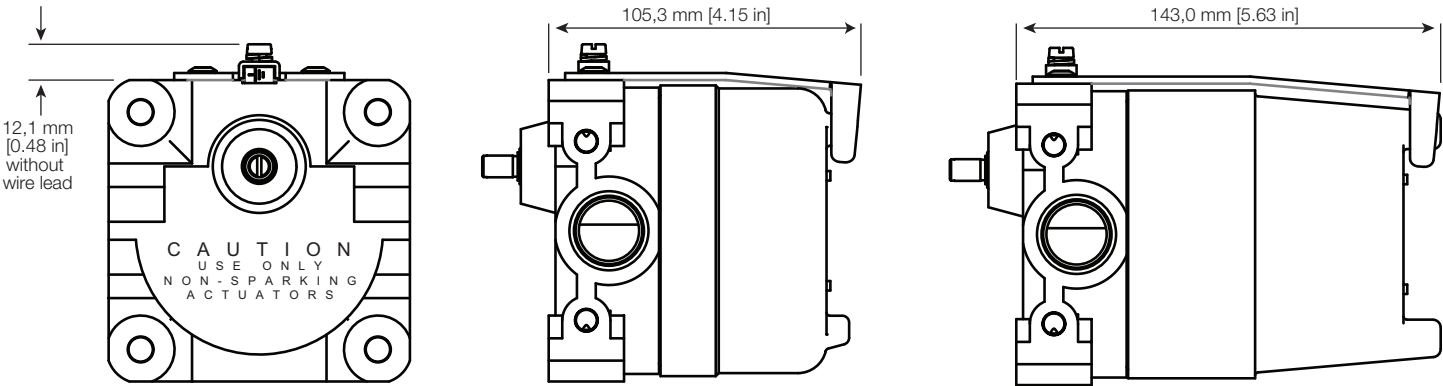
Figure 3. MICRO SWITCH CX - plunger standard and short housing



CX Series

ATEX COVER CLAMP ASSEMBLY FOR EUROPEAN COMPLIANCE

To specify a CX switch with ATEX, IEC Ex, or INMETRO certifications, add the letter “E” to the end of the catalog listing: 11CX2**E**.



ADDITIONAL INFORMATION

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

- Product installation instructions
- Product range guide
- Product nomenclature tree
- MICRO SWITCH Hazardous Area Switches Brochure
- Product application-specific information
 - Limit and enclosed switch reference standards
 - Application Note: Sensors and switches for industrial manual process valves
 - Application Note: Sensors and switches in oil rig applications
 - Application Note: Sensors and switches in valve actuators and valve positioners
 - Application Note: Sensors and switches in valves and flow meters

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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.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement 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 it 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 we provide application assistance personally, through our literature and the Honeywell website, it is up to the customer to determine the suitability of the product in the application.

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