

Hazardous Location Limit Switches

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Cutler-Hammer® Type LX, CX and CBX Limit Switches by Eaton's electrical business are designed for extreme environmental service in NEMA 7 – 9 locations where there exists a danger of an internal or external explosion of flammable gases, vapors, metal alloy or grain dust. Type CB provides excellent corrosion resistant properties in NEMA 4X applications. Markets served include mining, grain storage, forest products, petrochemical, pharmaceutical and waste and sewage management.

Approvals

- cUL



Unless otherwise noted, the products contained in this document are not designed or intended for use in human safety applications.

Switches Designed Specifically for Use in Hazardous Locations



Type LX



Type CX



Type CBX



Type CB
(Not rated
for explosive
locations)

Product Features

- Sealed and unsealed versions available
- One-way gasket on sealed version keeps liquids out, yet allows a harmless release of gases in the event of an internal explosion
- Silicon bronze housing provides excellent corrosion resistant properties in extreme NEMA 4X applications
- Temperature buildup on limit switch surface is dissipated by housing design and materials used
- Utilizes the operating heads and internal switch mechanisms of the 10316 L Non Plug-In line


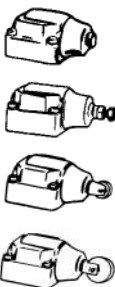

NEMA Rating Comparison


	Switch Type			
	LX	CX	CBX	CB
NEMA 1, 4, 13		X	X	X
NEMA 4X			X	X
NEMA 7 Division I, Class I, BCD	X	X	X	
NEMA 9 Division I, Class II, EFG	X	X	X	

For Customer Service in the U.S. call **1-877-ETN CARE (386-2273)**,
in Canada call **1-800-268-3578**.
For Application Assistance in the U.S. and Canada
call **1-800-426-9184**.



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Model Selection — Complete Assembled Switches with Spring Return Heads ④

Head Type		Operating Data — Nominal					Body Type	Contacts	Catalog Number
		Travel to Operate Contacts	Travel to Reset Contacts	Total Travel	Force to Operate Contacts	Minimum Return Force			
 <p>Side Rotary Operated</p> <p>Standard, 10° Pretravel ①</p> <p>Narrow Differential 5° Pretravel ①</p> <p>Neutral Position, 18° Pretravel ③</p> <p>For operating levers, see PG.05C.04.T.E. Only levers with Nylatron rods or rollers should be used with explosion-proof limit switches.</p>		10°	4°	50°	3.0 in-lb	4.5 in-oz	Type LX	1N.O.-1N.C.②	10316H1002
								2N.O.	10316H1039
								1N.O. and 1N.C.②	10316H1049
								2N.C.	10316H1059
							Type CX	1N.O.-1N.C.②	10316H2200
								1N.O. and 1N.C.②	10316H2176
								2N.C.	10316H2178
							Type CB	1N.O.-1N.C.②	10316H2149
								2N.C.	10316H2140
							Type CBX	1N.O.-1N.C.②	10316H2168
								2N.C.	10316H2159
							Type LX	1N.O.-1N.C.②	10316H1146
2N.O.	10316H2197								
1N.O. and 1N.C.②	10316H1071								
2N.C.	10316H1072								
Type CX	2N.O.	10316H2179							
	2N.C.	10316H2160							
 <p>Side Push Operated</p> <p>Pushbutton</p> <p>Adjustable Pushbutton</p> <p>Vertical Roller, 0.44 inch (11.2 mm) Diameter</p> <p>Vertical Roller, 0.75 inch (19.1 mm) Diameter</p>		0.07 inch (1.8 mm)	0.03 inch (0.76 mm)	0.29 inch (7.4 mm)	4 lbs	8 oz	Type LX	1N.O. and 1N.C.②	10316H1213
								1N.O.-1N.C.②	10316H1192
								1N.O.-1N.C.②	10316H1007
								1N.O.-1N.C.②	10316H1194
								1N.O.-1N.C.②	10316H1194
 <p>Top Push Operated</p> <p>Pushbutton</p> <p>Adjustable Pushbutton</p> <p>Roller, 0.44 inch (11.2 mm) Diameter</p> <p>Roller, 0.75 inch (19.1 mm) Diameter</p>		0.04 inch (1 mm)	0.02 inch (0.5 mm)	0.28 inch (7.1 mm)	4 lbs	8 oz	Type LX	1N.O.-1N.C.②	10316H1004
								1N.O. and 1N.C.②	10316H2188
							Type LX	1N.O.-1N.C.②	10316H1191
								1N.O. and 1N.C.②	10316H1212
							Type LX	1N.O.-1N.C.②	10316H1006
								Type CBX	1N.O.-1N.C.②
							Type LX	1N.O.-1N.C.②	10316H1193

① Field convertible to clockwise only or counterclockwise only operation.
 ② 1N.O.-1N.C. contacts must be same polarity when both circuits are used — 1N.O. and 1N.C. contacts have isolated poles and may be used on opposite polarity.
 ③ Neutral position switches operate one circuit in each direction.
 ④ Contact Eaton's Cutler-Hammer Sensor Applications Engineering at 1-800-426-9184 for replacement contact blocks.
 Fast turn product with typical one business day lead-time to shipment.

Model Selection — Complete Assembled Switches with Spring Return Heads (Continued) ③

Head Type		Operating Data — Nominal					Body Type	Contacts	Catalog Number
		Travel to Operate Contacts	Travel to Reset Contacts	Total Travel	Force to Operate Contacts	Minimum Return Force			
 	Spring	10° ②	6°	15°	1 in-lb	2.4 in-oz	Type LX	1N.O.-1N.C.①	10316H1237
	Nylon Rod	10° ②	6°	15°	2 in-lb	5.6 in-oz	Type LX	1N.O.-1N.C.①	10316H1009

① 1N.O.-1N.C. contacts must be same polarity when both circuits are used — 1N.O. and 1N.C. contacts have isolated poles and may be used on opposite polarity.

② Travel with force applied at one-inch (25.4 mm) radius. Applied at end of operator, travel is approximately 14.

③ Contact Eaton's Cutler-Hammer Sensor Applications Engineering at 1-800-426-9184 for replacement contact blocks.

Specifications

Material of Construction LX, CX CB, CBX	Cast aluminum die cast Silicon bronze
Conduit Entrance LX CB, CBX, CX	1/2" Pipe tap 3/4" Pipe tap
Mounting	Surface mount
Enclosure Rating LX, CX, CBX CB, CBX CX	NEMA 7 Div. 1, Class I BCD; NEMA 9 Div. 1, Class II, EFG NEMA 1, 4, 4X, 13 NEMA 1, 4, 13 NOTE: A conduit seal-off kit is required for these switches
Operating Temperature	-20° to 200°F (-29° to 93°C)④
Approximate Shipping Weight LX CX CB, CBX	2 lb 2.5 lb 6 lb

Electrical Data — Maximum Contact Ratings, per Pole

AC Volts	Current, Amperes			Volt Amperes		DC Volts	DC Current, Ampere
	Make	Break	Cont. ⑤	Make	Break		

1N.O.-1N.C. Switches

NEMA A600, R300 Rating							
120	60	6	10	7200	720	125	0.2
240	30	3				250	0.1
480	15	1.5					
600	12	1.2					

All Other Switches, B600

120	30	3	5	3600	360	120	0.1
240	15	1.5				240	0.05
480	7.5	0.75					
600	6	0.60					

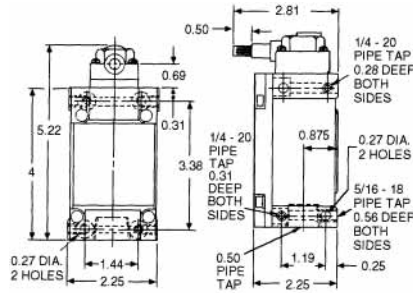
④ Ranges below +32°F (0°C) are based on absence of freezing moisture or water.

⑤ 1N.O.-1N.C. contacts must be same polarity when both circuits are used — 1N.O. and 1N.C. contacts have isolated poles and may be used on opposite polarities.

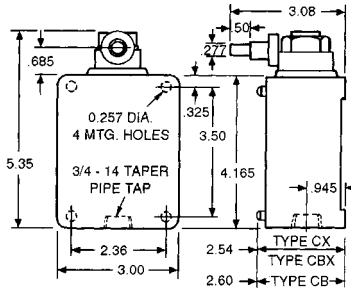
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Approximate Dimensions in Inches or Inches (mm)

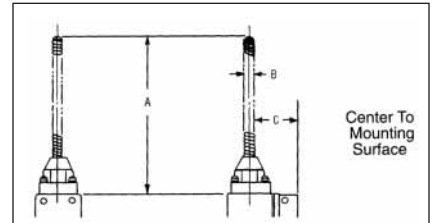
Type LX Switch with Side Rotary Head



Type CX, CB and CBX Switches with Side Rotary Head

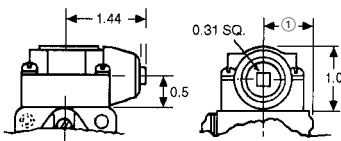


Wobble Operators

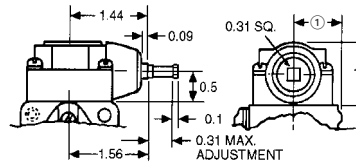


Type	A	B	C
Wobble Spring	5.44 (138.2)	0.31 (7.9)	0.94 (23.9)
Nylon Rod	4.5 (114.3)	0.25 (6.4)	0.94 (23.9)

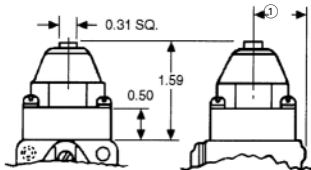
Side Pushbutton Head



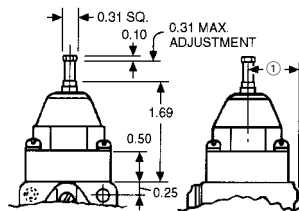
Adjustable Side Pushbutton Head



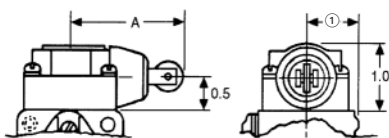
Top Pushbutton Head



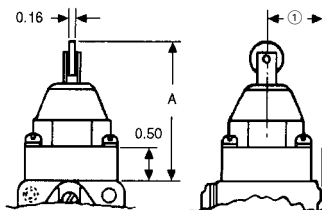
Adjustable Top Pushbutton Head



Side Push, Vertical Roller Head



Top Push Roller Head



Dimension "A"

With 0.44 (11.2) Diameter Roller	1.78 (45.2)
With 0.75 (19.1) Diameter Roller	2.09 (53.1)

Dimension "A"

With 0.44 (11.2) Diameter Roller	2.03 (51.6)
With 0.75 (19.1) Diameter Roller	2.34 (59.4)

① Dimension from centerline of head to mounting surface: Type LX: 0.94 inches (23.9 mm); Type CX, CB, CBX: 1.04 inches (26.4 mm).