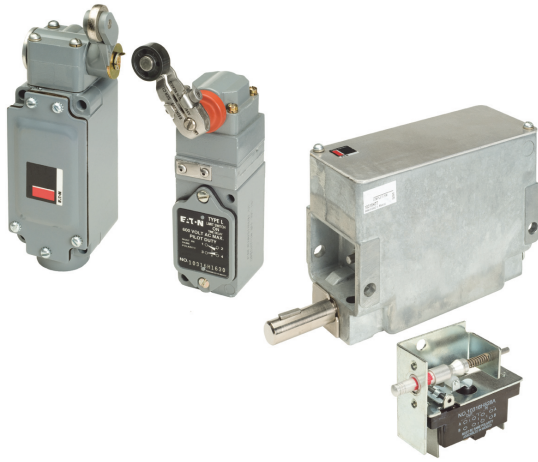


Special Purpose Limit Switches



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Special Purpose Limit Switches

Product Description

Special Purpose (Type F), Rotating Shaft (Type J), Pneumatic Time Delay (Type LP) and Precision and Cabinet Door Interlock (Type PS) Limit Switches from Eaton's electrical sector serve a variety of special purpose industrial applications for MRO and User Replacement requirements.

Features

- UL Listed
- CSA Certified (PS and J only)

Standards and Certifications

Type J

- UL Listed, E170645
- CSA Certified, 50513



Type LP

- UL Listed, E170645



Type PS

- UL Listed, E170645
- CSA Certified, 50513



⚠ DANGER

THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safety-related use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.

For the most current information on this product, visit our Web site: www.eaton.com

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.

Product Selection

2

Roller Lever Switches

Roller Lever



Type F Switches ^①

Operator	Circuit	Travel to Operate Contacts	Travel to Reset Contacts	Total Travel	Over-Travel	Catalog Number
Roller lever (CW and CCW operation, spring return)	1NO-1NC	40°	35°	65°	25°	10316H18
	2NO-2NC	17°	6°	60°	43°	10316H320

Rotating Shaft Switches

Type J

Rotating Shaft Limit Switches allow the shaft to be rotated a preset number of revolutions (adjustable from 1/2 to 100 with an accuracy of 1/20 of a turn) before the contacts will switch. A second set of

contacts will trip when reaching a preset limit in the opposite direction. These switches are typically used in crane and hoist applications to provide end of travel stops for the hook assembly.

Rotating Shaft



Type J Switches

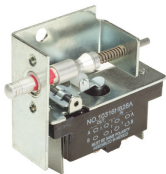
Shaft to Cam Ratio	Max. Turns to Trip Contacts	Min. Turns to Trip Contacts	Over-Travel Before Resetting Contacts	Reversal After Tripping to Reset Contacts	Circuit ^②	Enclosure Rating	Catalog Number
103:1	100 input shaft turns	1/2 input shaft turns	103 input shaft turns max.	1/8 input shaft turns min.	2NC	NEMA 1	10316H50
					2NO-2NC ^③	NEMA 4	10316H54 ^③

Notes

- ① Replacement operator head is available with part number **86-862-22**.
Replacement roller lever is available with part number **24-1712**.
Replacement key pin and washer for roller is available with part number **16-906**.
- ② For replacement NO contacts, order **17-1403**; NC contacts, order **17-702**.
- ③ 10316H54 has factory set circuits, but is easily convertible to any of three circuits (2NO-2NC, 4NO or 4NC). Full instructions enclosed with every switch.

Pneumatic Time Delay Switches**Pneumatic Time Delay****Type LP Switches**

Operator	Total Travel	Pre-Travel	Circuit	Timed Contacts	Direction of Rotation ^②	Catalog Number
Side rotary (Spring return to center) ^①	50°	10°	1NO-1NC	ON delay	CW	10316H1580
					CW and CCW	10316H1600
				OFF delay	CW	10316H1610
					CW and CCW	10316H1630

Precision Switches**Cabinet Door Interlock****Type PS Switches**

Operator	Circuits— SPDT 1NO-1NC Catalog Number	Circuits— DPDT 2NO-2NC Catalog Number	Operator Only Catalog Number
Precision Switch Devices			
Precision switch only	10316H89	10316H2000	—
Pushbutton with oiltight plunger	—	10316H2006	—
Roller with oiltight plunger perpendicular to mounting holes	—	10316H2012	—
Roller with oiltight plunger in line with mounting holes	10316H110	—	—
6 in lever with top and right-hand mounting bracket	10316H113	—	10316H143
6 in lever with top and left-hand mounting bracket	—	—	10316H144
Roller lever with top and right-hand mounting bracket	10316H119	—	10316H145
Roller lever with top and left-hand mounting bracket	10316H122	—	10316H146
One way roller lever with top and right-hand mounting bracket	—	—	10316H147
One way roller lever with top and left-hand mounting bracket	—	—	10316H148
Cabinet Door Interlocks			
Precision switch only	10316H828	10316H829A	—
Cabinet door interlock operator with one precision switch and with red (defeated ^③) indicator	10316H1028	10316H2042	10316H150
Cabinet door interlock operator with two each of listed precision switches and with red (defeated ^③) indicator	10316H1029	—	—

Notes

- ① Requires an operating lever, see **Page V8-T2-78**.
 ② Field convertible.
 ③ The plunger exposes a red band when pulled out to indicate that interlock is defeated.

Technical Data and Specifications

2

Special Purpose Limit Switches

Description	Specification
Roller Lever Switches – Type F	
Enclosure rating	NEMA 4
Operating temperature	0° to 180°F (–18° to 82°C)
Conduit entrance	0.5 in NPT
Shipping weight	4.0 lbs
Rotating Shaft Switches – Type J	
Shipping weight	
NEMA 1 models	5.5 lbs
NEMA 4 models	13 lbs
Pneumatic Time Delay Switches – Type LP	
Timing range	0.05 to 60 seconds
ON delay function	Timing begins when lever is actuated and held
OFF delay function	Timing begins when lever is released
Repeat accuracy ^①	With 15 second or higher interval between timing periods: ±10% of setting maximum With less than 15 second interval between timing periods: ±25% of setting maximum
Operating frequency	250 operations per minute maximum
Enclosure rating	NEMA 4, 13
Ambient operating temperature	32° to 150°F (0° to 65°C)
Conduit entrance	0.5 in NPT
Shipping weight	2 lbs

Type F—Maximum Ampere Ratings

Circuit	State	AC Volts				DC Volts		
		120	240	480	600	120	240	600
1NO-1NC	Make	60	30	20	15	—	—	—
	Break	6	3	1.5	1.2	2.2	1.1	0.40
2NO-2NC	Make	40	20	10	8	—	—	—
	Break	15	10	6	5	0.5	0.2	0.02

Type J—Maximum Ampere Ratings

State	AC Volts				DC Volts		
	120	240	480	600	120	240	600
Make	60	30	15	12	2.2	1.1	—
Break	6	3	1.5	1.2	2.2	1.1	—
Continuous ^①	10	10	10	10	10	10	—

Note

^① To maintain operating accuracy during the timing cycle, the switch lever must be faster than the timed setting.

Type LP— Electrical Data, Maximum Contact Ratings/Pole

AC Volts	Current, Amperes			Volt Amperes		DC Volts	DC Current Amperes
	Make	Break	Cont. ①	Make	Break		
All Switches 1NO-1NC							
NEMA A600, R300 Rating							
120	60	6	10	7200	720	120	0.2
240	30	3	10	7200	720	240	0.1
480	15	1.5	10	7200	720	240	0.1
600	12	1.2	10	7200	720	240	0.1

Type PS— Maximum Ampere Ratings

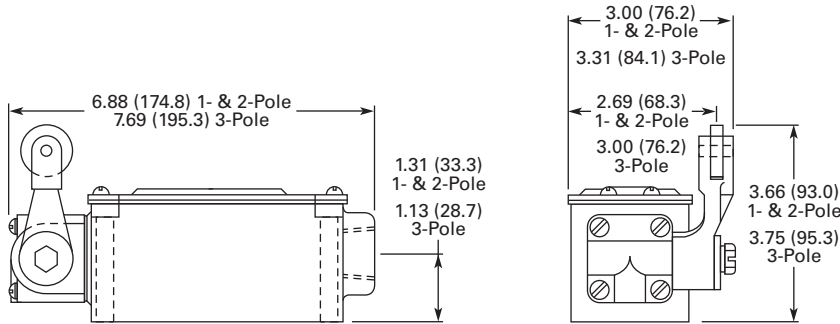
Type	State	AC Volts				DC Volts Double Throw		
		120	240	480	600	120	240	600
Heavy-Duty 1/2 hp, 250 Vac Maximum								
Single-pole	Make	40	20	10	8	2.0	0.5	0.1
	Break	15	10	6	5	0.5	0.2	0.02
Double-pole	Make	30	15	8	6	0.5	0.2	0.2
	Break	3	1.5	1	0.8	0.2	0.1	—

Dimensions

Approximate Dimensions in Inches (mm)

Roller Lever Switches

Type F



Note

① Thermal rating. Valid only if switch does not have to make or break.

2.11

Limit Switches

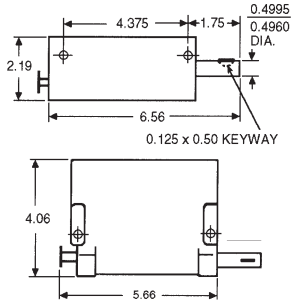
Special Purpose Limit Switches

Approximate Dimensions in Inches only

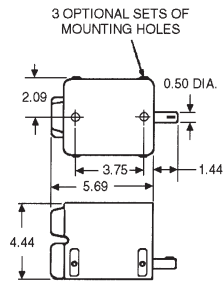
Rotating Shaft Switches

2

Type J—NEMA 1 Models

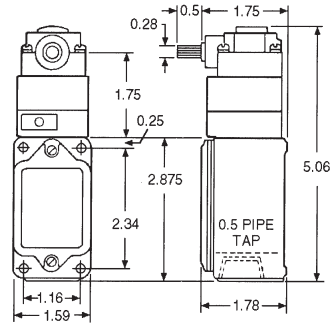


Type J—NEMA 4 Models



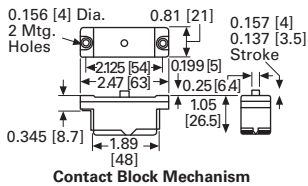
Pneumatic Time Delay Switches

Type LP

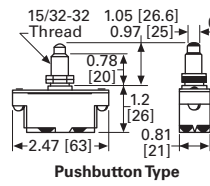


Precision Switches

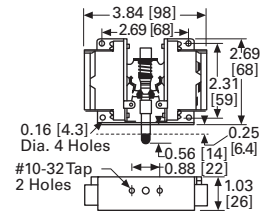
Type PS



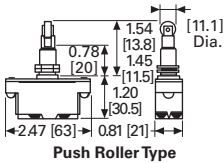
Contact Block Mechanism



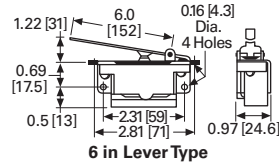
Pushbutton Type



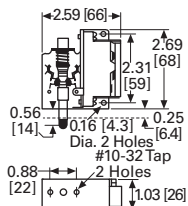
Cabinet Door Type
Two Contact Blocks



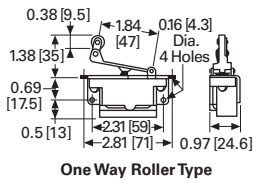
Push Roller Type



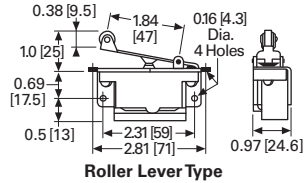
6 in Lever Type



Cabinet Door Type
One Contact Block



One Way Roller Type



Roller Lever Type