

Military



Illuminated AC Rated



General Purpose AC/DC Rated



X Series Toggles



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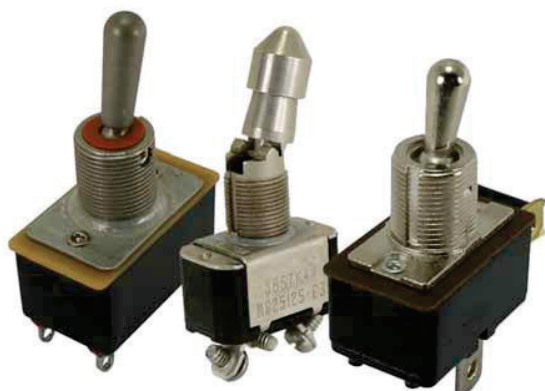
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4.1

Toggle Switches

Introduction

Toggle Switches



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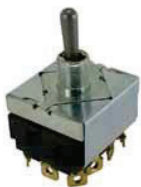
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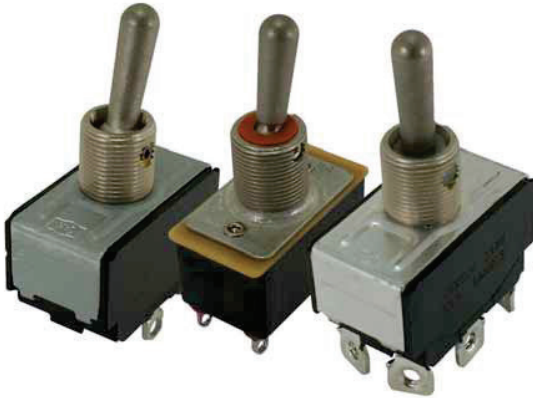
Product Selection Guide

Toggle Switches

	Military Purpose Toggles	Illuminated AC Rated Switches	General Purpose Toggles—AC Rated
			
Product Selection	Page V11-T4-3	Page V11-T4-9	Page V11-T4-20
Circuit Diagram	Page V11-T4-35	—	Page V11-T4-35
Product Description	Eaton's military purpose switches are designed to meet the requirements of MIL-S-83731	These illuminated switches are available only in single-pole circuitry. A two-pole base is utilized with single-pole housing the lamp.	These AC rated toggle switches offer the widest selection of features and the design flexibility to meet a variety of applications.

	General Purpose Toggles—AC/DC Rated	X Series Toggles	Heavy Duty Hesitation Switches
			
Product Selection	Page V11-T4-20	Page V11-T4-24	Page V11-T4-27
Circuit Diagram	Page V11-T4-35	—	Page V11-T4-35
Product Description	This line of switches employs a quick-make/quick-break contact mechanism. These switches are especially suited for use in small motor applications.	Eaton's new, competitively priced, AC rated X Series toggles offer a standard high rating for both single- and two-pole applications.	The most common application for this switch is to help prevent motor damage resulting from the high current generation by counter EMF of the armature at the time of reversing.

Military Purpose Toggles



Product Description

Eaton's military purpose switches are designed to meet the requirements of MIL-S-83731. Sealed Switches have a silicone rubber lever seal assembled between the lever and the bushing to resist the entrance of contaminants such as dust, sand or water into the contact structure.

The switch mechanisms are completely enclosed to resist the entrance of contaminants into the switch. All metal parts are plated to resist corrosion. The heavy duty switches are offered in both standard toggle lever and lever lock versions. Circuit designations are stamped on the side of each switch.

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- MIL-S-83731

Product Selection

AC/DC Rated (Medium Duty) MIL-S-83731



Current Ratings	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Dimension "A" Inches (mm)	Dimension "B" Inches (mm)	Military Solder Lug Terminals	
		UP Position	CENTER Position	DOWN Position				MIL-S-83731 with Sealed Lever	Catalog Number
				 (Keyway)					
Single-Pole									
See A below	1PST	ON ON OFF	NONE NONE NONE	OFF MOM. OFF MOM. ON	A	—	0.906 (23.01)	MS25098-22 MS25098-29 MS25098-30	8261K22 8261K29 8261K30
See A below	1PDT	ON ON	NONE NONE	ON MOM. ON	B	0.937 (23.80)	—	MS25098-23 MS25098-26	8261K23 8261K26
Two-Pole									
See B below	2PST	ON ON OFF	NONE NONE NONE	OFF MOM. OFF MOM. ON	C	—	0.906 (23.01)	MS25100-22 MS25100-29 MS25100-30	8262K22 8262K29 8262K30
See C below	2PDT	ON ON	NONE NONE	ON MOM. ON	D	0.937 (23.80)	—	MS25100-23 MS25100-26	8262K23 8262K26

Current Ratings

Part Number	Current Capacity in Amperes per Pole = 125 Vac, 60 Hz	
	Resistive Load	Inductive Load
A All MS25098	3.0	1.5
B MS25100-22, 29, 30	3.0	1.5
C MS25100-23, 26	1.0	1.0

4.2

Toggle Switches

Military Purpose Toggles



AC Rated (Heavy Duty) MIL-S-83731 with Lever Seal

		Circuit with Toggle in ...						Screw Terminals with Sealed Lever	
Current Ratings	Poles and Throw	UP Position	CENTER Position	DOWN Position	Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	MS Part Number	Catalog Number
				 (Keyway)					
Single-Pole									
See A below See B below	1PST	ON ON ON ON NONE OFF	NONE OFF NONE MOM. OFF NONE OFF NONE	OFF NONE MOM. OFF MOM. ON MOM. ON	A	0.468 (11.89)	0.687 (17.45)	MS35058-22 MS35058-24 MS35058-29 MS35058-25 MS35058-28 MS35058-30	8801K22 8801K23 8813K17 8813K18 8811K18 8811K17
See A below See B below	1PDT	ON ON MOM. ON ON	OFF NONE NONE OFF OFF	ON ON MOM. ON MOM. ON MOM. ON	B	0.468 (11.89)	0.687 (17.45)	MS35058-21 MS35058-23 MS35058-26 MS35058-27 MS35058-31	8800K16 8810K15 8804K13 8812K14 8809K16
Two-Pole									
See C below See D below	2PST	ON ON ON ON NONE OFF	NONE OFF NONE MOM. OFF NONE OFF NONE	OFF NONE MOM. OFF MOM. OFF MOM. ON MOM. ON	C	0.468 (11.89)	0.687 (17.45)	MS35059-22 MS35059-24 MS35059-29 MS35059-25 MS35059-28 MS35059-30	8822K20 8822K21 8828K13 8828K12 8826K14 8826K15
See C below See D below	2PDT	ON ON ON MOM. ON ON	OFF NONE NONE OFF OFF	ON ON MOM. ON MOM. ON MOM. ON	D	0.468 (11.89)	0.687 (17.45)	MS35059-21 MS35059-23 MS35059-26 MS35059-27 MS35059-31	8820K16 8824K14 8830K13 8834K5 8832K6
See E below	1P3T in a 2P base	ON ^① ON ^① MOM. ON ^① ON ^① ON ^① MOM. ON ^①	ON ^② ON ^② ON ^② ON ^③ ON ^③ ON ^③	ON ^④ MOM. ON ^④ MOM. ON ^④ ON ^④ MOM. ON ^④ MOM. ON ^④	See Page V11-T4-35	0.468 (11.89)	0.687 (17.45)	MS25201-4 MS25201-5 MS25201-6 MS25201-7 MS25201-8 MS25201-9	8860K4 8860K5 8860K6 8860K7 ^⑤ 8860K8 ^⑤ 8860K9 ^⑤
Four-Pole									
See F below See G below	4PST	ON ON ON NONE OFF	NONE OFF MOM. OFF OFF NONE	OFF NONE NONE MOM. ON MOM. ON	E	0.468 (11.89)	0.687 (17.45)	— MS25068-24 MS25068-25 MS25068-28 —	7660K12 7660K13 7668K7 7666K9 7666K6
See F below See G below	4PDT	ON ON ON MOM. ON ON	OFF NONE NONE OFF OFF	ON ON MOM. ON MOM. ON MOM. ON	F	0.468 (11.89)	0.687 (17.45)	MS25068-21 MS25068-23 MS25068-26 MS25068-27 MS25068-31	7662K7 7664K5 7674K5 7672K5 7670K6

Current Ratings

		Current Capacity in Amperes per Pole								
		28 Vdc			115 Vac, 60 Hz			115 Vac, 400 Hz		
Switch	Type of Operation	Lamp Load	Resistive Load	Inductive Load	Lamp Load	Resistive Load	Inductive Load	Lamp Load	Resistive Load	Inductive Load
A MS35058	Maintained	7	25	15	—	10	10	3	10	10
B MS35058	Momentary	5	20	10	—	10	7	—	—	—
C MS35059	Maintained	7	20	15	—	20	—	4	20	15
D MS35059	Momentary	5	18	10	—	11	—	—	—	—
E MS25201	ON-ON-ON	5	18	10	2	11	8	2	11	8
F MS25068	Maintained	5	20	12	—	—	—	4	20	15
G MS25068	Momentary	4	18	10	—	—	—	2	11	5

Notes

- ^① Across terminals 2-3 and 5-6.
- ^② Across terminals 1-2 and 5-6.
- ^③ Across terminals 2-3 and 4-5.
- ^④ Across terminals 1-2 and 4-5.
- ^⑤ For "INDEPENDENT ON-ON-ON" circuit arrangement, see Page V11-T4-35.

**AC Rated (Heavy Duty) MIL-S-83731 Lever Lock with Lever Seal**

Current Ratings	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Lever Lock Bushing Style ①	Bushing Length "A" Inches (mm)	Lever Lock Length "B" Inches (mm)	Screw Terminals with Sealed Lever	
		UP Position 	CENTER Position 	DOWN Position (Keyway) 					MS Part Number	Catalog Number
Single-Pole										
See A below	1PST	ON	NONE	← OFF	A	3	0.562 (14.27)	1.000 (25.40)	MS25125-C2	8857K47
		ON →	NONE	← OFF		4			MS25125-E2	8857K48
		ON →	← OFF	NONE		5			MS25125-J4	8857K49
See A below	1PDT	ON	← OFF →	ON	B	2	0.562 (14.27)	1.000 (25.40)	MS25125-B1	8857K40
		ON	NONE	← ON		3			MS25125-C3	8857K45
		ON →	NONE	← ON		4			MS25125-E3	8857K44
Two-Pole										
See B below	2PDT	ON →	← OFF →	← ON	C	1	0.562 (14.27)	1.000 (25.40)	MS25126-A1	8858K39
		ON	← OFF →	ON		2			MS25126-B1	8858K40
		ON →	NONE	← ON		4			MS25126-E3	8858K44
Four-Pole										
See C below	4PDT	ON →	NONE	← ON	F	4	0.562 (14.27)	1.000 (25.40)	MS25127-E3	8859K44

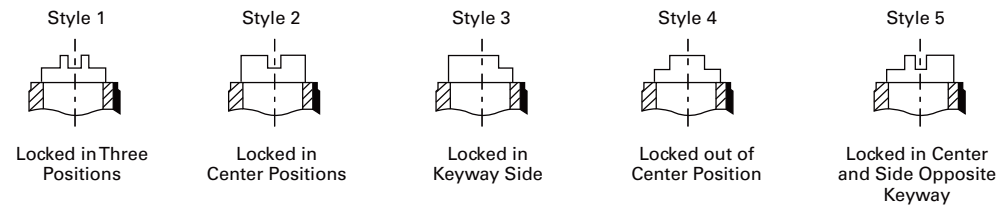
← Indicates direction against which lever is locked.

Current Ratings

Switch	Type of Operation	Current Capacity in Amperes per Pole								
		28 Vdc			115 Vac, 60 Hz			115 Vac, 400 Hz		
		Lamp Load	Resistive Load	Inductive Load	Lamp Load	Resistive Load	Inductive Load	Lamp Load	Resistive Load	Inductive Load
A MS25125	Maintained	5	20	15	—	—	—	3	10	10
B MS25126	Maintained	7	20	15	—	—	—	4	20	15
C MS25127	Maintained	5	20	15	—	—	—	4	20	15

Note

① See illustrations below for lever lock bushing styles.

Lever Lock Bushing Styles

These illustrations are for pictorial representation only—keyway on right-hand side.



AC Rated (Heavy Duty) Military with Unsealed Lever

Current Ratings	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Solder Lug Terminals Catalog Number	Screw Terminals Catalog Number
		UP Position 	CENTER Position 	DOWN Position  (Keyway)					
Single-Pole									
See A below See B below	1PST	ON ON OFF	NONE NONE NONE	OFF MOM. OFF MOM. ON	A	0.468 (11.89)	0.688 (17.45)	7300K38 7304K38 7303K38	7300K36 7304K36 7303K36
See A below See B below	1PDT	ON ON ON MOM. ON ON	OFF NONE NONE OFF OFF	ON ON MOM. ON MOM. ON MOM. ON	B	0.468 (11.89)	0.688 (17.45)	7301K38 7302K38 7307K38 7306K38 7305K38	7301K36 7302K36 7307K36 7306K36 7305K36
Two-Pole									
See C below See D below	2PST	ON ON OFF	NONE NONE NONE	OFF MOM. OFF MOM. ON	C	0.468 (11.89)	0.688 (17.45)	7310K38 7314K38 7313K38	7310K36 7314K36 7313K36
See C below See D below	2PDT	ON ON ON MOM. ON ON	OFF NONE NONE OFF OFF	ON ON MOM. ON MOM. ON MOM. ON	D	0.468 (11.89)	0.688 (17.45)	7311K38 7312K38 7317K38 7316K38 7315K38	7311K36 7312K36 7317K36 7316K36 7315K36

Current Ratings

Type of Operation	Current Capacity in Amperes per Pole								
	30 Vdc			125 Vac, 60 Hz			250 Vac, 60 Hz		
	Lamp Load	Resistive Load	Inductive Load	Resistive Load	Inductive Load	Horsepower	Resistive Load	Inductive Load	Horsepower
Single-Pole									
A Maintained	5	20	15	15	—	—	6	—	—
B Momentary	4	15	10	15	—	—	6	—	—
Two-Pole									
C Maintained	7	30	15	25	—	—	9	—	—
D Momentary	5	20	10	15	—	—	6	—	—

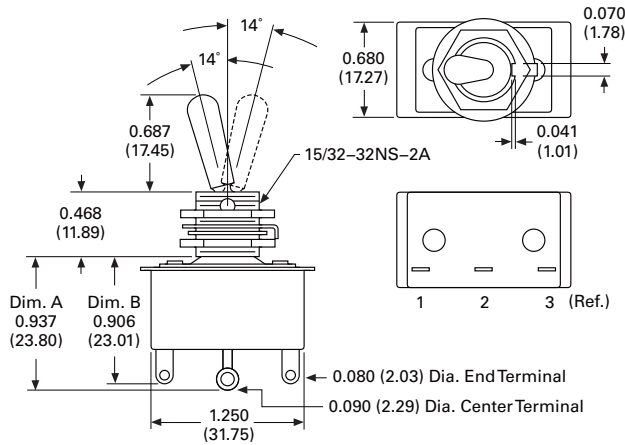
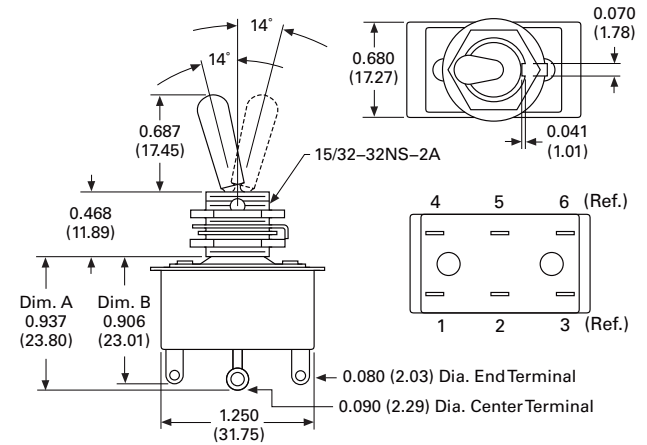
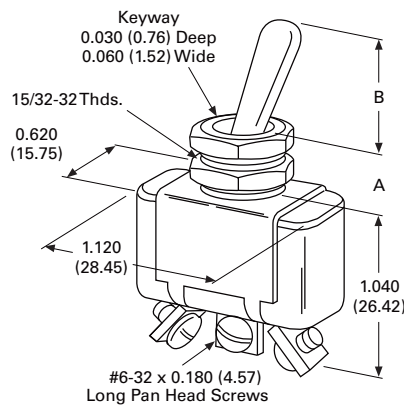
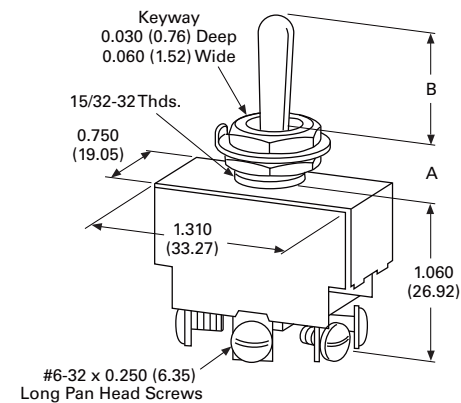
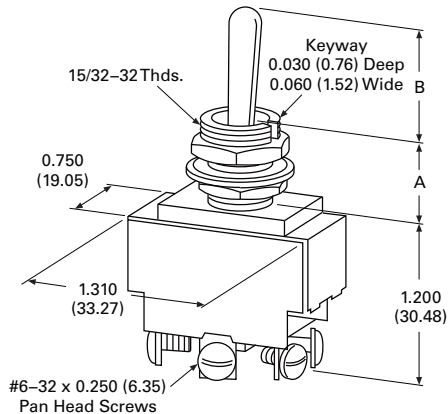
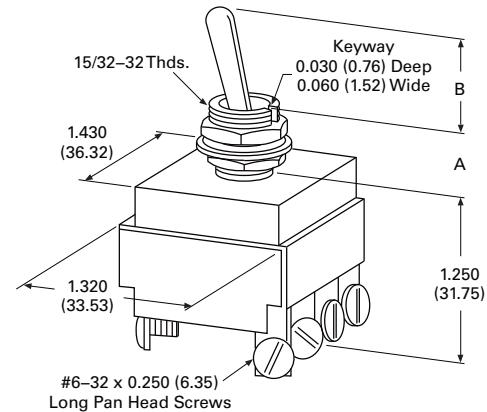
Technical Data and Specifications

Military Purpose Switches

Description	Specification
Ratings	See Product Selection tables
Circuits	1PST, 1PDT, 2PST, 2PDT, 1P3T (ON-ON-ON), 4PST and 4PDT; maintained and momentary action
Contact action	Heavy duty—Slow-make/slow-break butt contact Medium duty—Quick-make/quick-break, wiping action
Contact material	Heavy duty: Movable—silver-plated copper with fine or coin silver contact face button Stationary—copper with fine or coin silver contact face button Medium duty: Movable—copper silver-plated Stationary—bronze silver-plated
Terminal types	Heavy duty MIL-S-83731 types: Screw terminals—brass designed to accept #6-32 x 6.35 mm (0.250 in) pan head (Catalog Number 11-1893) screws and Si bronze #6 helical lockwasher (Catalog Number 16-1096). Furnished unassembled. Terminal screws are tin dipped to facilitate soldering if required Heavy duty JAN-S-23 types: Screw terminals—brass designed to accept #6-32 x 4.78 mm (0.188 in) binding head (Catalog Number 811-2) screws. Furnished unassembled Solder lug terminals—tintillate plated brass Medium duty MIL-S-83731 types: Solder lugs—brass silver-plated furnished with 0.094 in (2.39 mm) dia. hole
Base material	Thermoset molding material
Mounting means	Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/inch Keyway—0.068 x 0.035 in (1.73 x 0.89 mm) deep; provides anti-rotation feature Hardware supplied: MIL-S-83731 types—2 hexagon facenuts (Catalog Number 15-966-6), 1 locking ring (Catalog Number 29-761) and 1 internal tooth lockwasher (Catalog Number 16-886). Furnished unassembled JAN-S-23 types—2 hexagon facenuts (Catalog Number 15-966-6). Furnished unassembled
Dielectric	1000V minimum
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Dimensions

Approximate Dimensions in Inches (mm)

AC/DC Rated (Medium Duty) MIL-83731 Switches**1PDT Maintained Action (Solder Lug)****2PDT Maintained Action (Solder Lug)****AC Rated (Heavy Duty) MIL-83731 Switches with Lever Seal****Single-Pole Maintained and Momentary Action****Two-Pole Maintained Action****Two-Pole Momentary Action and 3 ON Circuits****Four-Pole Maintained and Momentary Action**

4.2

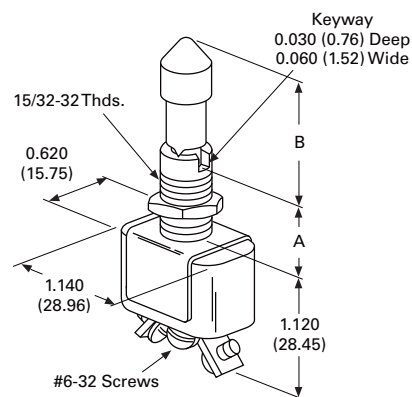
Toggle Switches

Military Purpose Toggles

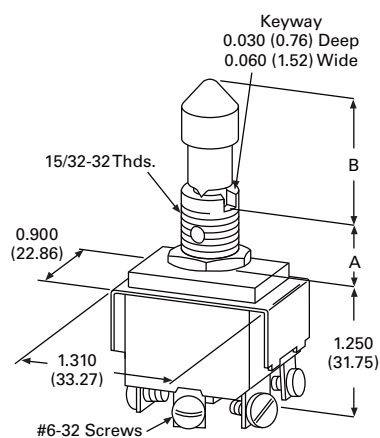
Approximate Dimensions in Inches (mm)

AC Rated (Heavy Duty) MIL-83731 Lever Lock Switches with Lever Seal

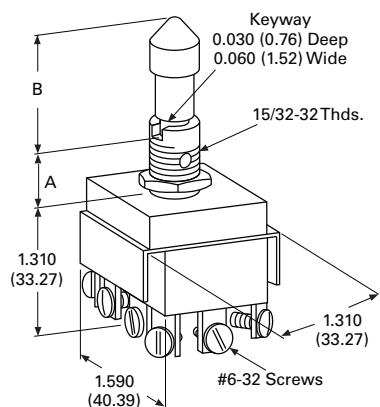
Single-Pole



Two-Pole

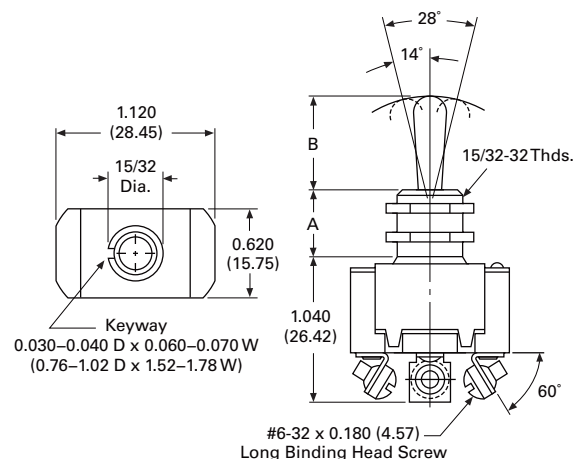


Four-Pole

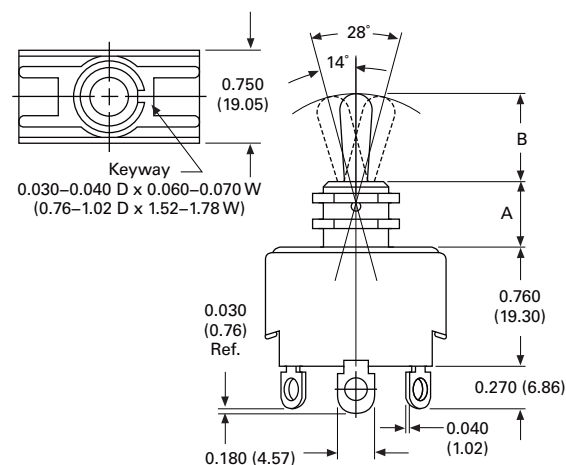


AC Rated (Heavy Duty)

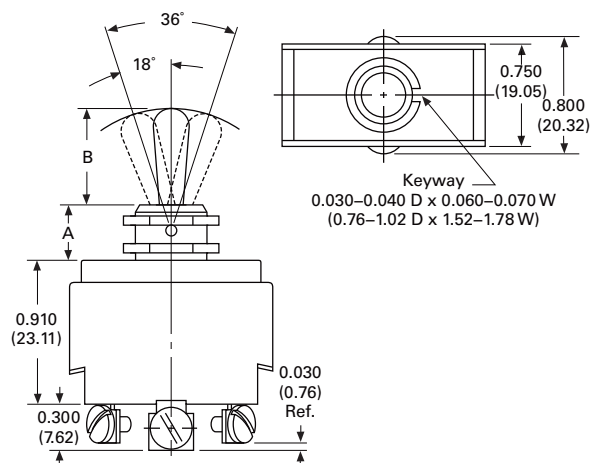
1PDT Maintained Action



2PDT Maintained Action



2PDT Momentary Action



Illuminated AC Rated Toggles



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Product Description

These illuminated toggles are available only in single-pole circuitry. A two-pole base is utilized with single-pole housing the lamp. On single-throw circuits, the lamp is wired to operate in conjunction with the switch.

On double-throw circuits, the lamp is independent of the switch. On the sealed versions, a silicone rubber seal is fitted to the paddle lever to provide a moisture- and dust-resistant seal between the lever and bushing.

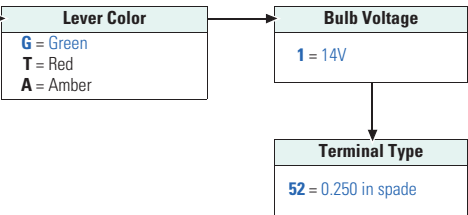
Catalog Number Selection

How To Order—Illuminated AC Rated Toggles

Example: **7071K21** → **G 1 52**

Rating	Poles and Throw	Circuit with Toggle in ...			Base Catalog Number	Circuit Number See Page V11-T4-35
		UP Position 	CENTER Position 	DOWN Position (Keyway) 		
Standard						
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	1PST	ON	NONE	OFF	7071K21	G
Sealed						
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	1PST	ON	NONE	OFF	7073K21	G
	1PDT	ON MOM. ON	OFF OFF	ON MOM. ON	7073K20 7073K25	H

Code letters and/or numbers—add to base circuit number.



4.3

Toggle Switches

Illuminated AC Rated Toggles

Technical Data and Specifications

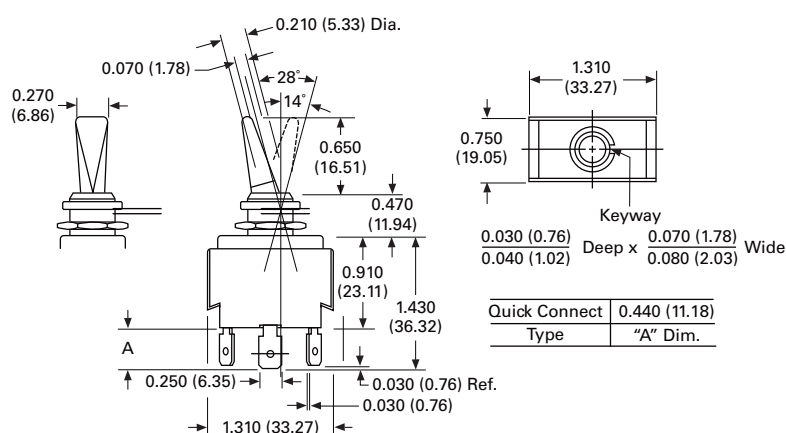
Illuminated AC Rated Toggles

Description	Specification
Ratings	See Catalog Number Selection
Circuits	1PST and 1PDT; maintained and momentary action
Contact material	Movable—silver-plated copper Stationary—silver-plated copper
Terminal types	Spade—brass
Base material	Colored thermoplastic paddle lever

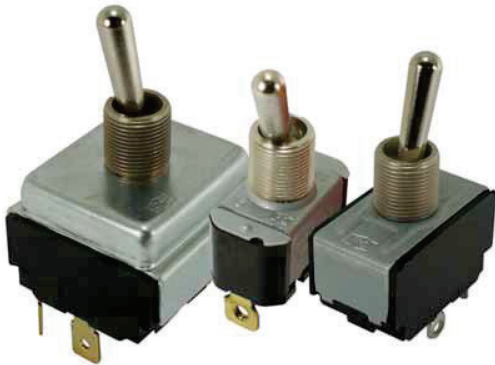
Dimensions

Approximate Dimensions in Inches (mm)

Illuminated



General Purpose Toggles



Product Description

These AC rated toggle switches offer the widest selection of features and the design flexibility to meet a variety of applications.

Features

The optional features shown below may not be available on all toggle models. Contact your local Eaton Sales Representative.

7500, 7600, 7700 and 7900 Series

- 3-independent ON Circuit (2PDT or 4PDT only, see **Page V11-T4-14**)
- Short (11/32 in) bushing
- Tall (15/32 in) bushing
- White nylon designer lever, see Dimensions on **Page V11-T4-16**
- Black nylon designer lever, see Dimensions on **Page V11-T4-16**
- Hardware—furnished assembled
- Reversing jumpers (not for use with 3-independent ON circuit)
- Short (15/32 in) bat lever
- Tall (11/16 in) bat lever (not available with short bushing)
- Rotate keyway 180°
- Lever seal
- Omit one pole (2P, 3P, 4P only. Not for use with 3-independent ON circuit)

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Options

Combi-Term Option

This is an extension of our AC rated general purpose toggle switch. The “Combi-Term” design allows the user the option of screw terminals, 0.25 in quick connects or solder termination all on the same switch. The special clips and screws are provided in a poly bag with the switch.

Circuits

- 1PST, 1PDT, 2PST, 2PDT, 3PST, 3PDT, 4PST and 4PDT
- Maintained and momentary

Standards and Certifications

- UL® Recognized
- CSA® Certified (except as noted)
- RoHS Compliant ^①

**Note**

^① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

4.4

Toggle Switches

General Purpose Toggles—AC Rated

Product Selection

4



AC Rated Toggle Switches—Single-Pole

Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number		
		UP Position	CENTER Position	DOWN Position				Solder Lugs	Screw Terminals	0.250 in Spade Terminals
6A, 125 Vac 3A, 250 Vac	1PST	ON	NONE	OFF	A	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	7580K7 7580K6	7580K5 7580K4	7580K9 7580K8
	1PDT	ON	OFF	ON	B	0.469 (11.91)	0.563 (14.30)	7581K6	7581K4	7581K8
	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.563 (14.30)	7582K6	7582K4	7582K8
	1PDT	ON MOM. ON	NONE OFF	MOM. ON MOM. ON	B	0.469 (11.91)	0.563 (14.30)	7585K6 7587K6	7585K4 7587K4	7585K8 7587K8
10A, 250 Vac 1/2 hp, 250 Vac	1PST	OFF	NONE	MOM. ON	A	0.469 (11.91)	0.563 (14.30)	7506K3	7506K4	7506K6
	1PST	OFF	NONE	MOM. ON	A	0.469 (11.91)	0.688 (17.48)	7506K38	7506K36	7506K40
	1PDT	MOM. ON ON	OFF NONE	MOM. ON MOM. ON	B	0.469 (11.91)	0.563 (14.30)	7509K4 7510K6	7509K5 7510K7	7509K7 7510K9
	1PDT	ON MOM. ON	OFF OFF	MOM. ON MOM. ON	B	0.469 (11.91)	0.688 (17.48)	7508K38 7509K38	7508K36 7509K36	7508K40 7509K40
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125V Vac	1PST	ON	NONE	OFF	A	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	7501K12 7501K13	7500K13 ^① 7500K14 ^①	7501K14 7501K15
	1PDT	ON	OFF	ON	B	0.469 (11.91)	0.563 (14.30)	7503K13 ^①	7502K13	7503K15
15A, 125 Vac 10A, 250 Vac 1/2 hp, 125 Vac 3/4 hp, 250 Vac	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.563 (14.30)	7505K4	7504K4 ^①	7505K6
	1PST	ON	NONE	OFF	A	0.469 (11.91)	0.688 (17.48)	7546K38	7546K36	7546K40
20A, 125 Vac 10A, 250 Vac 1/2 hp, 125 Vac 3/4 hp, 250 Vac	1PST	ON	NONE	OFF	A	0.344 (8.74)	0.563 (14.30)	—	7576K2	—

Notes

^① Also 4.2A L at 125 Vac rating.

^② Single-pole switch in two-pole base.

AC Rated Toggle Switches—Two-Pole



Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number			
		UP Position	CENTER Position	DOWN Position (Keyway)				Solder Lugs	Screw Terminals	0.250 in Spade Terminals	Combi-Term
6A, 125 Vac 3A, 250 Vac 2A, 277 Vac 2.5A, L at 125 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.563 (14.30)	7590K6	7590K4	7590K8	—
6A, 125 Vac 3A, 250 Vac 2.5A, L at 125 Vac	2PDT	ON	OFF	ON	D	0.469 (11.91)	0.563 (14.30)	7591K6	7591K4	7591K8	—
	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.563 (14.30)	7592K6	7592K4	7592K8	—
6A, 125 Vac 3A, 250 Vac	2PDT	MOM. ON	OFF	MOM. ON	D	0.469 (11.91)	0.563 (14.30)	7597K6	7597K4	7597K8	—
	2PDT	ON	ON	OFF	7530	0.469 (11.91)	0.563 (14.30)	7530K1	7530K3	7530K2	—
10A 250 Vac, 15A 125 Vac, 1/4 hp 125–250 Vac	2PDT	ON	ON	ON	7555	0.469 (11.91)	0.563 (14.30)	7555K12	7555K11	7555K13	—
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	2PST	ON	NONE	OFF	C	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	7561K5 7561K4	7560K6 7560K5	7561K7 7561K6	—
	2PDT	ON	OFF	ON	D	0.344 (8.74) 0.469 (11.91)	0.563 (14.30) 0.563 (14.30)	7563K5 7563K4	7562K5 7562K4	7563K7 7563K6	—
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.563 (14.30)	7565K5	7564K6	7565K7	—
15A, 125 Vac 10A, 250 Vac 1/2 hp, 250 Vac	2PST	OFF	NONE	MOM. ON	C	0.469 (11.91)	0.563 (14.30)	7566K4	7566K5	7566K7	—
	2PDT	ON	OFF	MOM. ON	D	0.469 (11.91)	0.563 (14.30)	7568K3 ^① 7569K1 7570K4	7568K2 ^① 7569K2 7570K5	7568K4 ^① 7569K3 7570K7	— — —
		MOM. ON	OFF	MOM. ON	D	0.469 (11.91)	0.563 (14.30)	7568K3 ^① 7569K1 7570K4	7568K2 ^① 7569K2 7570K5	7568K4 ^① 7569K3 7570K7	— — —
	2PDT	MOM. ON	OFF	MOM. ON	D	0.469 (11.91)	0.688 (17.48)	7569K38	7569K36	7569K40	—
20A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.688 (17.48)	7630K38	7630K36	7630K40	—
	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.688 (17.48)	7632K38	7632K36	7632K40	—
Section A 10A 250 Vac; 15A 125 Vac, 3/4 hp 250 Vac, 4.2A L 125 Vac; Section B 10A 250 Vac, 15A 125 Vac, 1/4 hp 250 Vac	2PDT	OFF	1 ON	2 ON	7571	0.469 (11.91)	0.563 (14.30)	7571K2	7571K4	7571K6	—
20A, 125 Vac 10A, 250 Vac 1 hp, 120–240 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.688 (17.48)	7803K11	7803K31	7803K21 ^②	7803K41
	2PDT	ON	OFF	ON	D	0.469 (11.91)	0.688 (17.48)	7803K12 7803K13 7803K17 ^②	7803K32 7803K33 7803K37 ^②	7803K22 ^③ 7803K23 ^③ 7803K27 ^②	7803K42 7803K43 7803K47 ^②
		MOM. ON	NONE	ON	MOM. ON						

Notes

① Also 1/2 hp at 125–250 Vac Rating.

② Not CSA Certified.

③ Also 7.5A, 277 Vac, 3/4 hp, 120–240–277 Vac.

4.4

Toggle Switches

General Purpose Toggles—AC Rated



AC Rated Toggle Switches—Three-Pole

Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number			
		UP Position	CENTER Position	DOWN Position				Solder Lugs	Screw Terminals	0.250 in Spade Terminals	Combi-Term
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1 hp, 3 Ph 125–600 Vac 1 hp, 1 and 2 Ph 125–480 Vac	3PST	ON	NONE	OFF	E	0.469 (11.91)	0.688 (17.48)	7700K1	7700K2	7700K3	—
	3PDT	ON ON	OFF NONE	ON ON	F	0.469 (11.91)	0.688 (17.48)	7701K1 7702K1	7701K2 7702K2	7701K3 7702K3	— —
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	3PDT	MOM. ON MOM. ON	OFF NONE	ON ON	F	0.469 (11.91)	0.688 (17.48)	7704K1 7705K1	7704K2 7705K2	7704K3 7705K3	— —
20A, 125 Vac 10A, 250 Vac 1 hp, 120 Vac 1, 2 and 3 Ph	3PDT	ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	7804K12 ⁽²⁾⁽⁴⁾	7804K32 ⁽²⁾	7804K22 ⁽²⁾	7804K42 ⁽²⁾



AC Rated Toggle Switches—Four-Pole

Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number			
		UP Position	CENTER Position	DOWN Position				Solder Lugs	Screw Terminals	0.250 in Spade Terminals	Combi-Term
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	4PST	ON	NONE	OFF	E	0.469 (11.91)	0.688 (17.48)	7691K14	7690K8	—	—
	4PDT	ON ON	OFF NONE	ON ON	F	0.469 (11.91)	0.688 (17.48)	7693K2 7695K5	7692K13 7694K4	— —	— —
20A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	4PST	ON	NONE	OFF	E	0.469 (11.91)	0.688 (17.48)	7933K38	7933K36	7933K40	—
	4PDT	ON ON	OFF NONE	ON ON	F	0.469 (11.91)	0.688 (17.48)	7934K38 7935K38	7934K36 7935K36	7934K40 7935K40	— —
20A, 125 Vac 10A, 250 Vac 1 hp, 125–240 Vac 2 and 3 Ph	4PDT	ON	OFF	ON	F	0.469 (11.91)	0.688 (17.48)	7805K12 ⁽²⁾	7805K32 ⁽²⁾	7805K22 ⁽²⁾	7805K42 ⁽²⁾

Notes

- ① Also 1/2 hp at 125–250 Vac Rating.
- ② Not CSA Certified.
- ③ Also 7.5A, 277 Vac, 3/4 hp, 120–240–277 Vac.
- ④ 1 hp at 240–480 Vac single- or two-phase and 240–600 Vac three-phase.

AC Rated Sealed ^① Toggle Switches—Single-Pole

Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number		
		UP Position 	CENTER Position 	DOWN Position (Keyway) 				Solder Lugs	Screw Terminals	0.250 in Spade Terminals
10A, 250 Vac 1/2 hp, 250 Vac	1PST	OFF	NONE	MOM. ON	A	0.469 (11.91)	0.563 (14.30)	—	7506K20	7506K21
	1PDT	MOM. ON ON ON	OFF NONE OFF	MOM. ON MOM. ON MOM. ON	B	0.469 (11.91)	0.563 (14.30)	— — —	7509K20 7510K20 7508K20	7509K21 7510K21 7508K21
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125V–250 Vac	1PST	ON	NONE	OFF	A	0.469 (11.91)	0.563 (14.30)	7501K22	7500K20 ^②	7501K21
15A, 125 Vac 10A, 250 Vac	1PDT	ON	OFF	ON	B	0.469 (11.91)	0.563 (14.30)	—	7502K20	7503K21
1/2 hp, 125 Vac 3/4 hp, 250 Vac	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.563 (14.30)	—	7504K20 ^②	7505K21

AC Rated Sealed ^① Toggle Switches—Two-Pole

Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number		
		UP Position 	CENTER Position 	DOWN Position (Keyway) 				Solder Lugs	Screw Terminals	0.250 in Spade Terminals
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac 1/2 hp, 125 Vac	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.563 (14.30)	—	7560K20	7561K21
15A, 125 Vac 10A, 250 Vac 3/4 hp, 125–250 Vac	2PDT	ON	OFF	ON	D	0.469 (11.91)	0.563 (14.30)	—	7562K20	7563K21
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.563 (14.30)	—	7564K20	7565K21
15A, 125 Vac 10A, 250 Vac 1/2 hp, 250 Vac	2PST	OFF	NONE	MOM. ON	C	0.469 (11.91)	0.563 (14.30)	—	7566K20	7566K21
	2PDT	ON MOM. ON ON	OFF OFF NONE	MOM. ON MOM. ON MOM. ON	D	0.469 (11.91)	0.563 (14.30)	— — —	7568K20 ^② 7569K20 7570K20	7568K21 ^② 7569K21 7570K21

AC Rated Special Circuit Toggle Switches—Two-Pole

Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Catalog Number		
		UP Position 	CENTER Position 	DOWN Position (Keyway) 				Solder Lugs	Screw Terminals	0.250 in Spade Terminals
15A, 125 Vac 10A, 250 Vac 3/4 hp, 125–250 Vac	2PDT	2-3, 5-6	OFF	2-6, 5-3	D	0.469 (11.91)	0.563 (14.30)	7563K24	7562K23	7563K25
15A, 125 Vac 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	2-3, 5-6	NONE	2-6, 5-3	D	0.469 (11.91)	0.563 (14.30)	7565K24	7564K23	7565K25

Notes

^① Seal is lever seal only and is dust and splash resistant. Panel seal is available, Part Number 32-341.

^② Also 1/2 hp at 125–250 Vac Rating.

4.4

Toggle Switches

General Purpose Toggles—AC Rated

Technical Data and Specifications

General Purpose Toggles—AC Rated

Description	Specification
Ratings	See Product Selection tables; Switch ratings at 125 Vac also apply to 28 Vdc
Contact mechanism	Slow-make/slow-brake butt contact
Terminal types	Screw terminals—brass designed to accept #6-32x 3/16 binding head (Cat. No. 811-2) screws Furnished unassembled Solder lug terminals—tintillate-plated brass Spade terminals—combi-term—brass
Base material	Thermoset molding material
Mounting means	Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/in Keyway—0.068 x 0.035 in (1.73 x 0.89 mm) deep, provides anti-rotation feature Hardware supplied—1 hexagon locknut (Cat. No. 15-192) and 1 bright nickel-plated knurled facenut (Cat. No. 15-124F1), except 7700–7705, which have bright nickel hexagon facenut (Cat. No. 15-966-2) Furnished unassembled
Finish	Bright nickel-plated toggle lever and bushing
Dielectric withstand	1000V rms minimum
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Contact Material

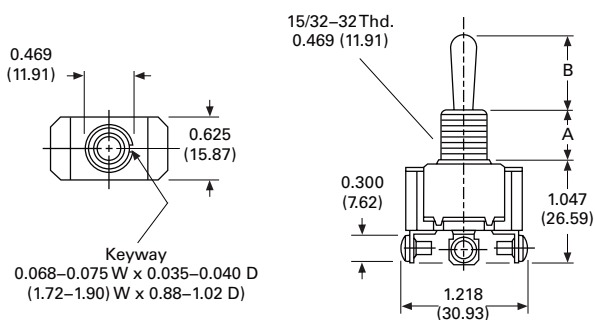
Ampere	Movable	Stationary
7500, 7600, 7700 and 7900 Series Switches		
3 to 6	Silver-plated copper	Silver-plated copper
10 to 20	Silver-plated copper with silver buttons	Silver-plated copper with silver buttons
20 to 30	Silver-plated copper with cad oxide buttons	Copper with cad oxide buttons
7800 Series Switches		
3 to 6	Silver-plated copper	Silver-plated copper
10 to 20	Copper with silver buttons	Copper with silver buttons

Dimensions

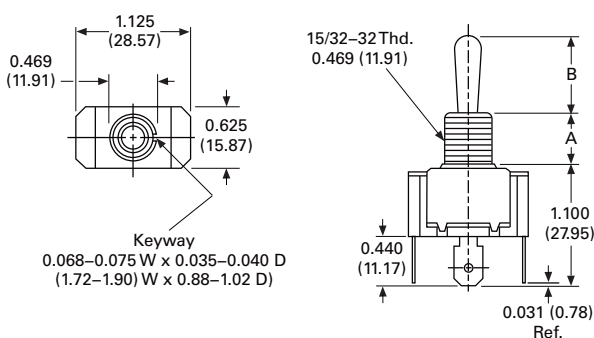
Approximate Dimensions in Inches (mm)

7500, 7600, 7700 and 7900 Series

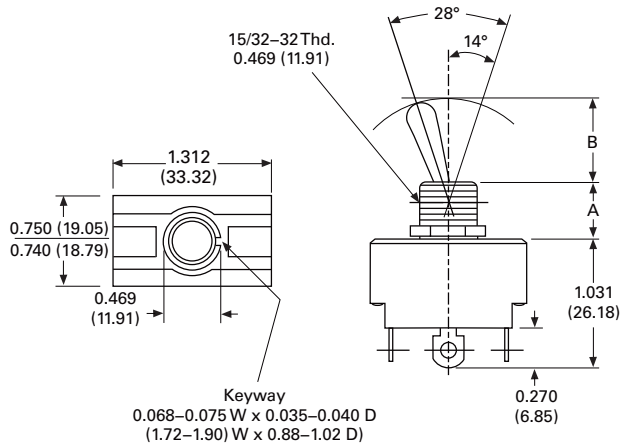
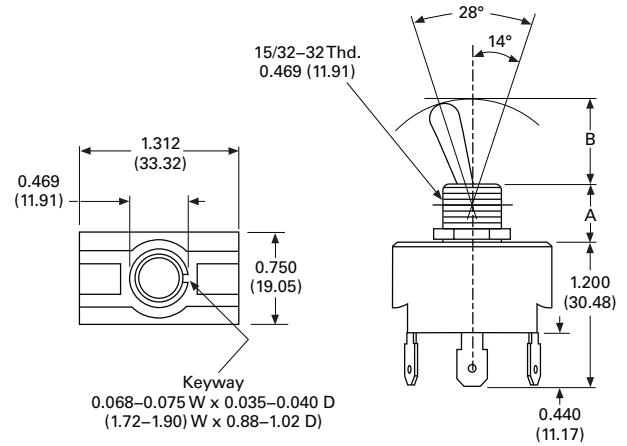
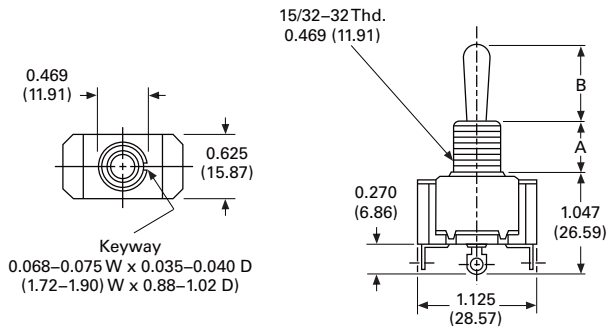
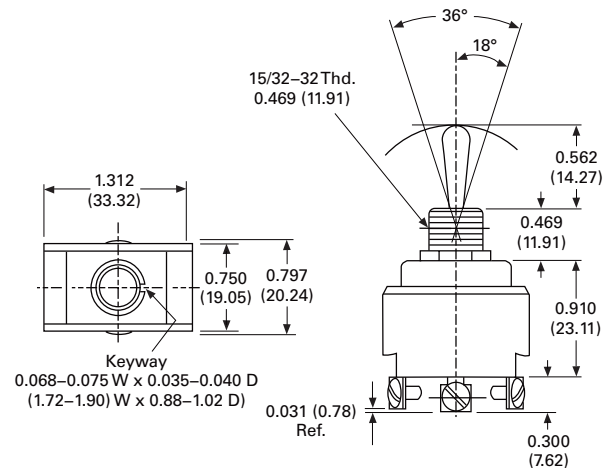
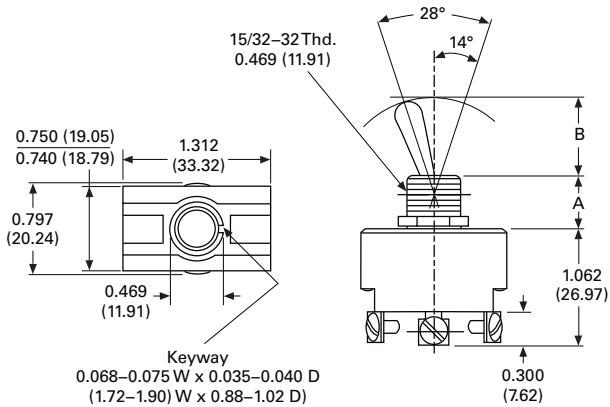
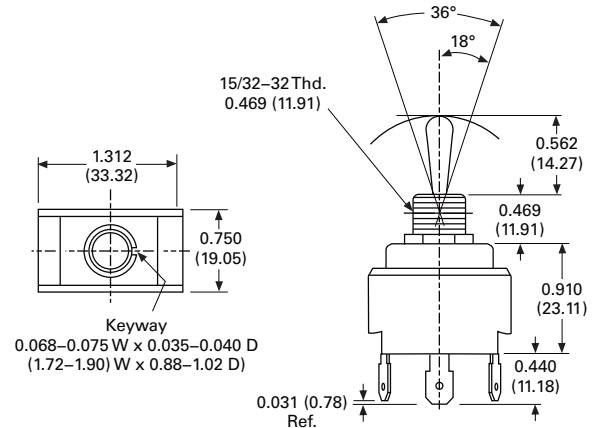
1PST Maintained and Momentary (Screw Terminals)



1PDT Maintained and Momentary (Spade Terminals)



Approximate Dimensions in Inches (mm)

7500, 7600, 7700 and 7900 Series, continued**2PDT Maintained (Solder Lugs)****2PDT Maintained (Spade Terminals)****1PDT Maintained and Momentary (Solder Lugs)****2PDT Momentary (Screw Terminals)****2PDT Maintained (Screw Terminals)****2PDT Momentary (Spade Terminals)**

4.4

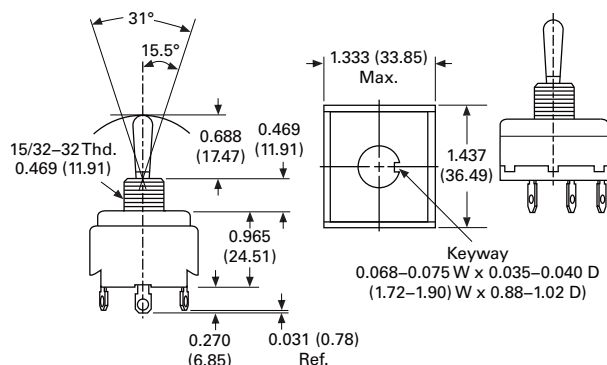
Toggle Switches

General Purpose Toggles—AC Rated

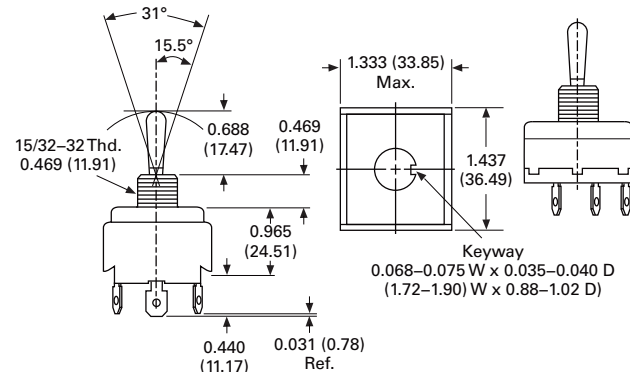
Approximate Dimensions in Inches (mm)

7500, 7600, 7700 and 7900 Series, continued

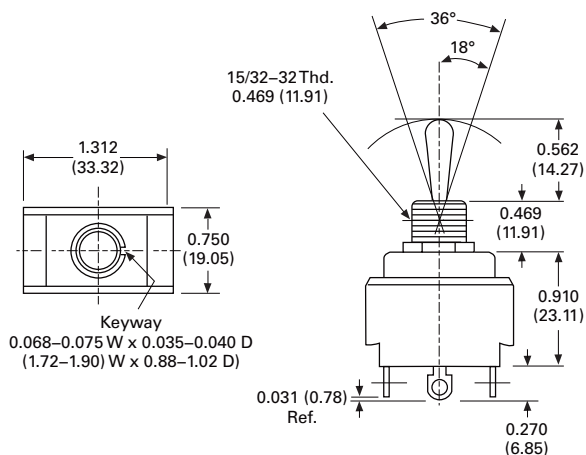
3PDT Maintained and Momentary (Solder Lugs)



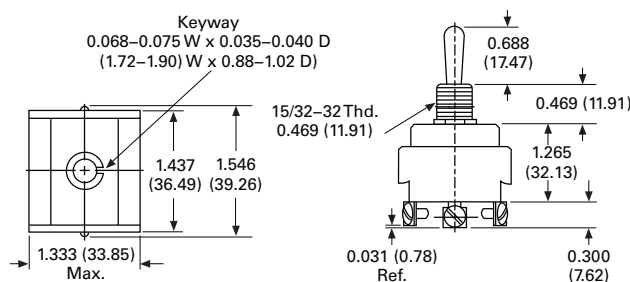
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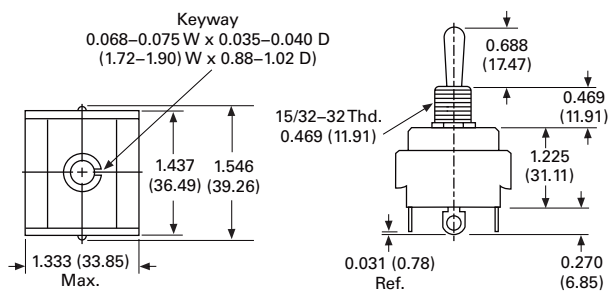
2PDT Momentary (Solder Lugs)



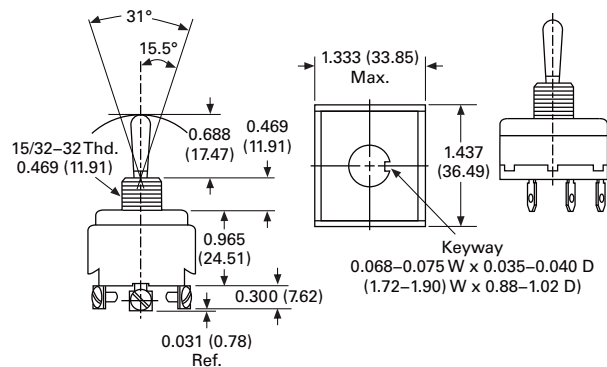
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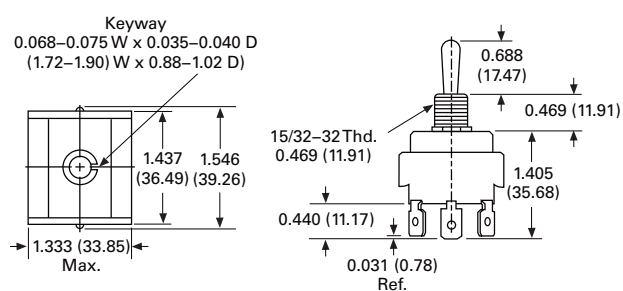
4PDT Maintained and Momentary (Solder Lugs)



3PDT Maintained and Momentary (Screw Terminals)



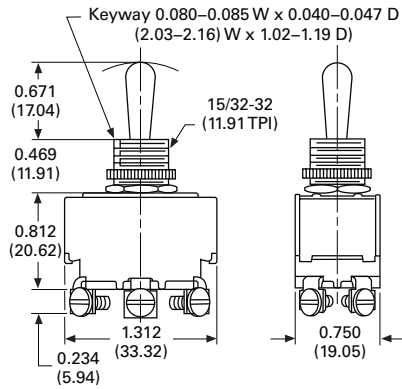
4PDT Maintained and Momentary (Spade Terminals)



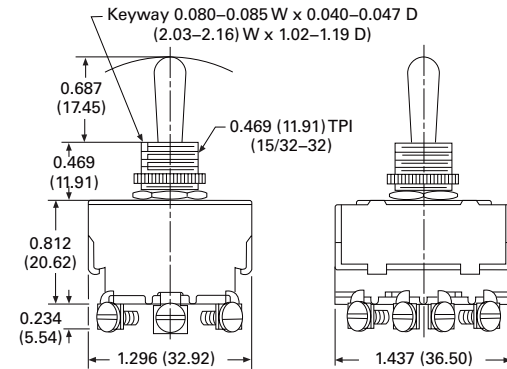
Approximate Dimensions in Inches (mm)

7800 Series

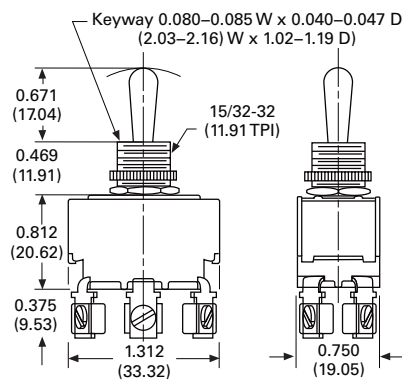
2PDT Maintained (Screw Terminals)



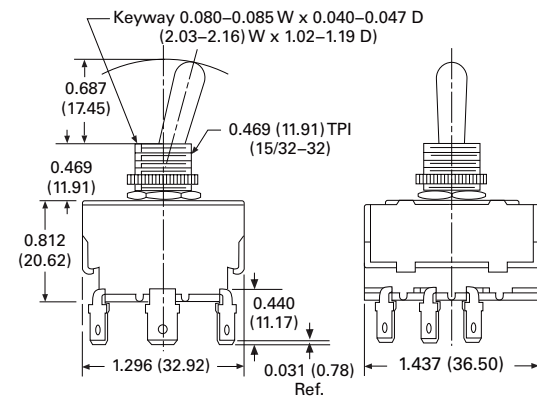
4PDT Maintained (Screw Terminals)



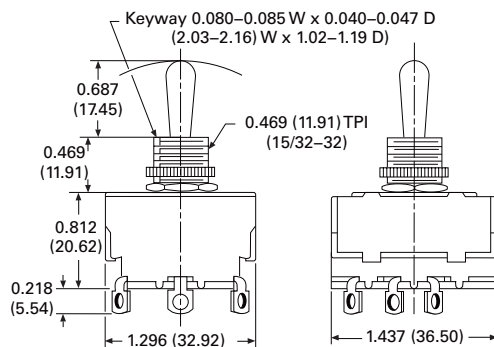
2PDT Maintained (Combi-Terminals)



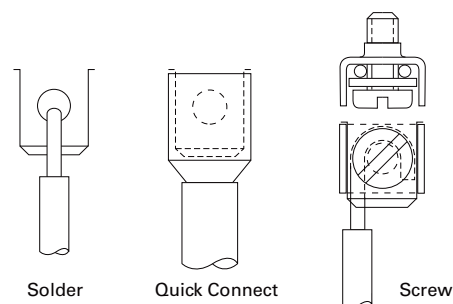
3PDT Maintained (0.25 in Spade Terminals)



3PDT Maintained (Screw Terminals)



Combi-Term Termination Options

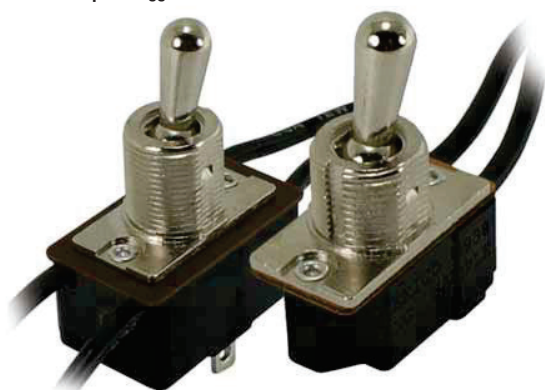


4.5

Toggle Switches

General Purpose Toggles—AC/DC Rated

General Purpose Toggles



4

Contents

Description

Page

General Purpose Toggles—AC/DC Rated

Technical Data and Specifications	V11-T4-21
Dimensions	V11-T4-21

Product Description

This line of switches employs a quick-make/quick-break contact mechanism. The resultant high-speed movement eliminates the “teasing” of the switch and reduces the pitting of the

contact surfaces due to arcing. Self-cleaning and wiping contact action assures positive contact on switch operation. These switches are especially suited for use in small motor applications.

Options

- Lever—11/16 in
- Lever seal
- Mounting hardware; furnished assembled
- Other lead lengths

Standards and Certifications

- UL Recognized
- CSA Certified
- RoHS Compliant ^①



Note

^① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Product Selection

AC/DC Rated Toggle Switches—Single-Pole



Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length “B” Inches (mm)	Lever Length “A” Inches (mm)	Catalog Number		
		UP Position	CENTER Position	DOWN Position				Solder Lugs	Screw Terminals	Wire Leads
3A, 250 Vdc	1PST	ON	NONE	OFF	A	0.344 (8.74)	0.500 (12.70)	8280K115	8295K107	8290K115
6A, 125 Vac/Vdc 3A, 250 Vdc	1PST	ON	NONE	OFF	A	0.344 (8.74)	0.500 (12.70)	8381K107	8396K107	8391K107
		ON	NONE	OFF		0.469 (11.91)	0.500 (12.70)	8381K108	8396K108	8391K108
		MOM. ON	NONE	OFF		0.469 (11.91)	0.500 (12.70)	8928K478	—	—
	1PDT	ON	NONE	ON	B	0.469 (11.91)	0.500 (12.70)	8928K479	—	—

AC/DC Rated Toggle Switches—Two-Pole



Rating	Poles and Throw	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length “B” Inches (mm)	Lever Length “A” Inches (mm)	Catalog Number		
		UP Position	CENTER Position	DOWN Position				Solder Lugs	Screw Terminals	Wire Leads
7A, 125V 3A, 250 Vdc	2PST	ON	NONE	OFF	C	0.469 (11.91)	0.500 (12.70)	8370K107	8372K107	8371K107
		MOM. ON	NONE	OFF		0.469 (11.91)	0.500 (12.70)	8928K481 ^①	8928K482 ^①	—
		ON	NONE	ON		0.344 (8.74)	0.500 (12.70)	8373K108	8375K108	8374K108
	2PDT	ON	NONE	ON	D	0.469 (11.91)	0.500 (12.70)	8373K107	8375K107	8374K107

Note

^① Rating: 6A, 125 Vac/Vdc and 3A, 250 Vdc.

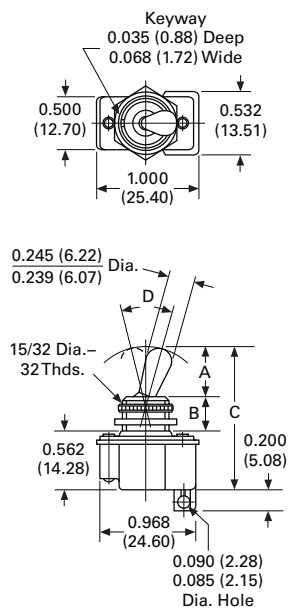
Technical Data and Specifications

General Purpose Toggles—AC/DC Rated

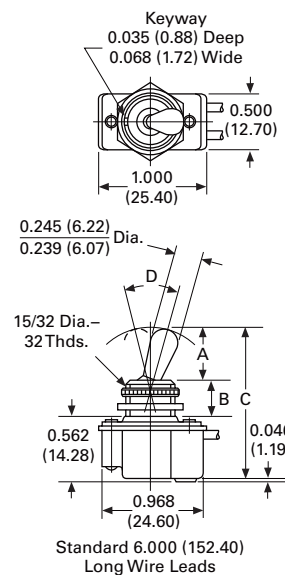
Description	Specification
Ratings	See Product Selection table; Switch ratings at 125 Vac also apply to 28 Vdc
Circuits	1PST, 1PDT, 2PST, 2PDT Maintained and momentary toggle action
Contact mechanism	Quick-make/quick-break wiping action
Contact material	Bronze silver-plated
Terminal types	Screw terminals—brass designed to accept #5-40 x 5/32 in (Cat. No. 11-26) screws Furnished unassembled Solder lug terminals—brass silver-plated with 0.085–0.090 in (2.16–2.29 mm) dia. hole Integrated wire leads—18 gauge, 6 in long and skinned 3/4 in Special wire leads lengths beyond 6 in are available at additional charge
Base material	Thermoset molding material
Mounting means	Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/inch Keyway—0.068 x 0.035 in (1.73 x 0.89 mm) deep, provides anti-rotation feature Hardware supplied—1 hexagon locknut (Cat. No. 15-192) and 1 bright nickel-plated knurled facenut (Cat. No. 15-124F1) Furnished unassembled
Finish	Bright nickel-plated toggle lever and bushing
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Dimensions

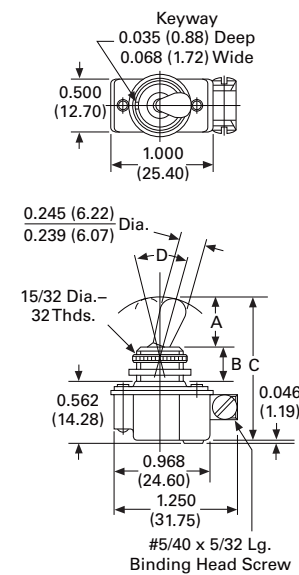
Approximate Dimensions in Inches (mm)

8280K115
1PST Maintained
(Solder Lug)

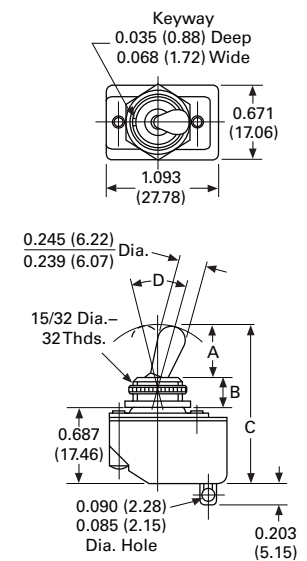
"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.411 (35.84)	29-1/2°

8290K115
1PST Maintained
(Wire Lead)

"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.406 (35.71)	29-1/2°

8295K107
1PST Maintained
(Screw Terminals)

"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.406 (35.71)	29-1/2°

8381K107 and K108
1PST Maintained
(Solder Lug)

"A" Lever Dim.	"B" Bushing Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.531 (38.89)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

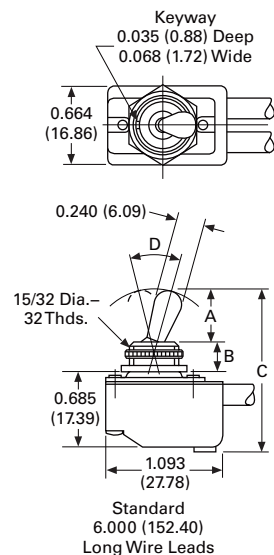
4.5

Toggle Switches

General Purpose Toggles—AC/DC Rated

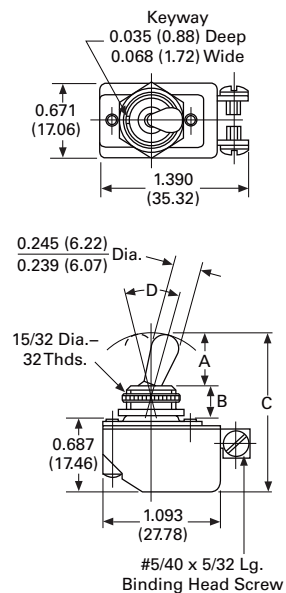
Approximate Dimensions in Inches (mm)

8391K107 and K108 1PST Maintained (Wire Lead)



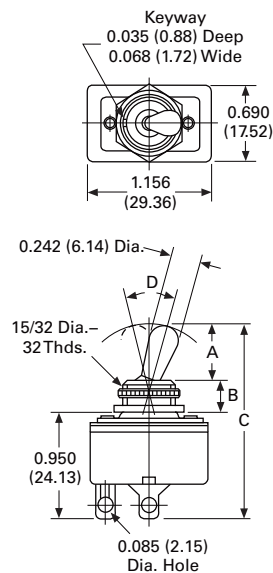
"A" Lever Dim.	"B" Bushings Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.531 (38.89)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

8396K107 and K108 1PST Maintained (Screw Terminals)



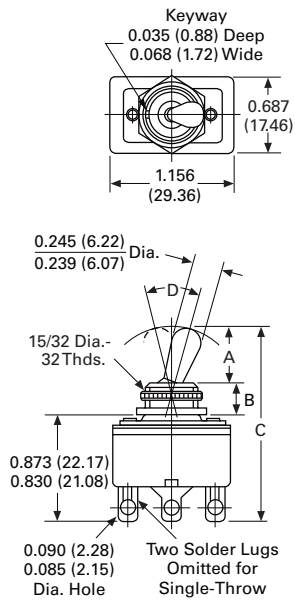
"A" Lever Dim.	"B" Bushings Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.531 (38.89)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

8928K478 1PST Momentary (Solder Lug)



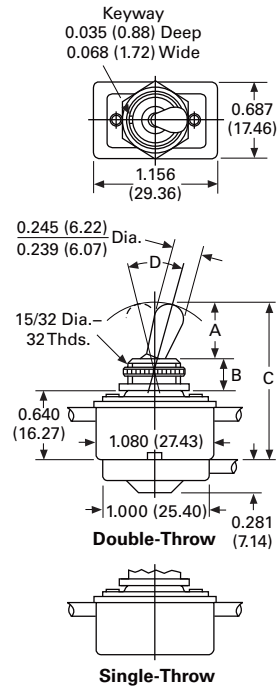
"A" Lever Dim.	"B" Bushings Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.980 (50.29)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.656 (42.06)	25-1/2°

8370 and 8373K107 and K108 2PST/2PDT Maintained (Solder Lug)



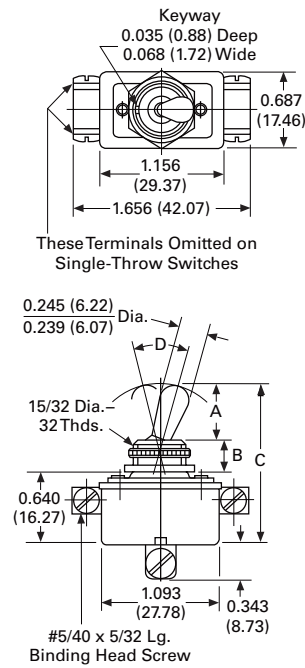
"A" Lever Dim.	"B" Bushings Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.694 (43.03)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.820 (46.23)	25-1/2°

8371 and 8374K107 and K108 1PST Maintained (Wire Lead)



"A" Lever Dim.	"B" Bushings Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.484 (37.69)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.515 (38.48)	25-1/2°

8373 and 8375K107 and K108 2PST/2PDT Maintained (Screw Terminals)



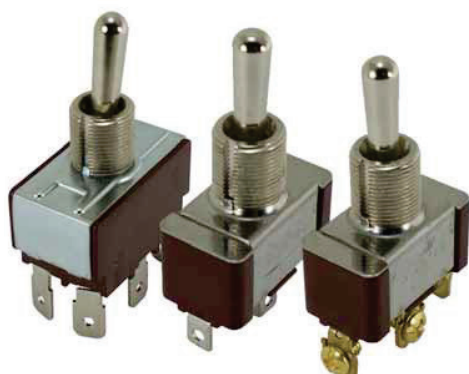
"A" Lever Dim.	"B" Bushings Dim.	"C" Overall Dim.	"D" Throw Dim.
0.500 (12.70)	0.344 (8.74)	1.484 (37.69)	29-1/2°
0.500 (12.70)	0.469 (11.91)	1.609 (40.87)	25-1/2°

4.6

Toggle Switches

X Series Toggles

X Series Toggles



4

Product Description

Eaton's new, competitively priced, AC rated X Series toggles offer a standard high rating for both single- and two-pole applications. The new X Series toggle line offers a wide range of switching circuits, functions and accessories. Ratings for single- and two-pole include 20A at 125 Vac and 10A at 277 Vac to handle more severe inductive, motor and lamp loads.

In addition, X Series toggles have a high standard horsepower rating of 1-1/2 hp, 125–250 Vac for two-pole applications.

The easy-to-install toggles also have an industry-standard 0.48 in diameter mounting hole. For added convenience and delivery support, select industry-standard switch circuit part numbers are available from stock. With so many features, X Series toggles can be used in a variety of applications.

Contents

Description

X Series Toggles

Product Selection	V11-T4-25
Accessories	V11-T4-25
Technical Data and Specifications	V11-T4-25
Dimensions	V11-T4-26

Page

Application Description

- Commercial and industrial equipment
- Household appliances
- Industrial machinery and automation
- Medical equipment
- Military communications and surveillance
- Rail systems
- Signaling and communications
- Test and lab equipment
- Telecommunications, cable and broadcasting

Standards and Certifications

- UL Recognized component for Canada File E2702
- RoHS Compliant ^①



Note

^① Visit www.eaton.com/vcbu for the most up-to-date list of verified part numbers.

Product Selection

Single-Pole ^①

Circuit with Toggle in ...

Poles and Throw	UP Position	CENTER Position	DOWN Position ^②	Terminal Type—Catalog Number		
				0.250 in Spade	Screw	Solder Lugs
1PST	ON	NONE	OFF	XTD1A1A2	XTD1A2A2	XTD1A3A2
1PST	ON ^③	NONE	OFF	XTD1F1A2	XTD1F2A2	XTD1F3A2
1PDT	ON	OFF	ON	XTD2B1A	XTD2B2A	XTD2B3A
1PDT	ON	NONE	ON	XTD2C1A	XTD2C2A	XTD2C3A
1PDT	ON	NONE	ON ^③	XTD2D1A	XTD2D2A	XTD2D3A
1PDT	ON ^③	OFF	ON ^③	XTD2E1A	XTD2E2A	XTD2E3A
1PDT	ON	OFF	ON ^③	XTD2G1A	XTD2G2A	XTD2G3A

Two-Pole ^④

Circuit with Toggle in ...

Poles and Throw	UP Position	CENTER Position	DOWN Position ^②	Terminal Type—Catalog Number		
				0.250 in Spade	Screw	Solder Lugs
2PST	ON	NONE	OFF	XTD3A1A2	XTD3A2A2	XTD3A3A2
2PST	ON ^③	NONE	OFF	XTD3F1A2	XTD3F2A2	XTD3F3A2
2PDT	ON	OFF	ON	XTD4B1A	XTD4B2A	XTD4B3A
2PDT	ON	NONE	ON	XTD4C1A	XTD4C2A	XTD4C3A
2PDT	ON	NONE	ON ^③	XTD4D1A	XTD4D2A	XTD4D3A
2PDT	ON ^③	OFF	ON ^③	XTD4E1A	XTD4E2A	XTD4E3A
2PDT	ON	OFF	ON ^③	XTD4G1A	XTD4G2A	XTD4G3A

Notes

^① Ratings: 20A at 125 Vac, 10A at 277 Vac, 3/4 hp 125–250 Vac; recommended up to 15A at 28 Vdc.

^② Keyway position.

^③ Indicates momentary position.

^④ Ratings: 20A at 125 Vac, 10A at 277 Vac, 1-1/2 hp, 125–250 Vac; recommended up to 15A at 28 Vdc.

Accessories

See Accessories on **Page V11-T4-31**.

Technical Data and Specifications

X Series Toggles

Description	Specification
Single-pole rating	20A, 125 Vac; 10A, 277 Vac; 3/4 hp 125–250 Vac; Recommended up to 15A at 28Vdc
Two-pole rating	20A, 125 Vac; 10A, 277 Vac; 1-1/2 hp 125–250 Vac; Recommended up to 15A at 28Vdc
Available circuits	1PST, 1PDT, 2PST, 2PDT
Terminal types	Brass screw, brass solder lugs, brass nickel-plated 0.250 in spade
Hardware included	Zinc nickel-plated knurl nut, zinc nickel-plated hex nut
Mounting means	Threaded bushing 12.0 +0.1, –0 mm; 16.5 +1, –1 mm
Keyway	1.8 mm located in DOWN position
Base material	Thermoset molding material
Finish	Bright nickel-plated toggle lever and bushing
Contact mechanism	Slow-make/slow-break butt contact
Contact resistance	50 ohm maximum
Dielectric strength	AC 1500V, 1 minute
Operating temperature	32° to 149°F (0° to 65°C)
Insulation resistance	DC 500V 100M ohm minute
Seal level rating	IP40
Packaging	Sealed in polybag labeled with part number

4.6

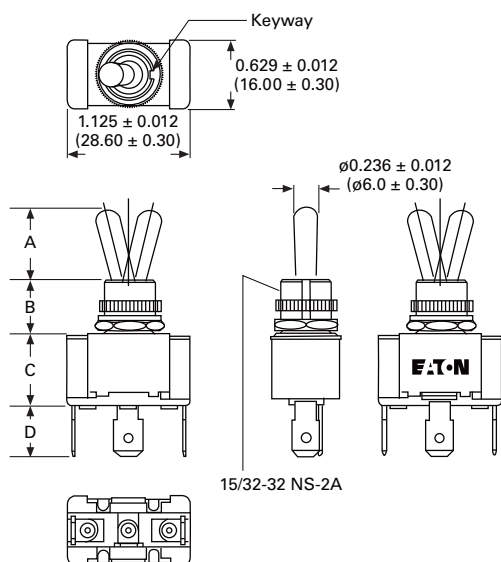
Toggle Switches

X Series Toggles

Dimensions

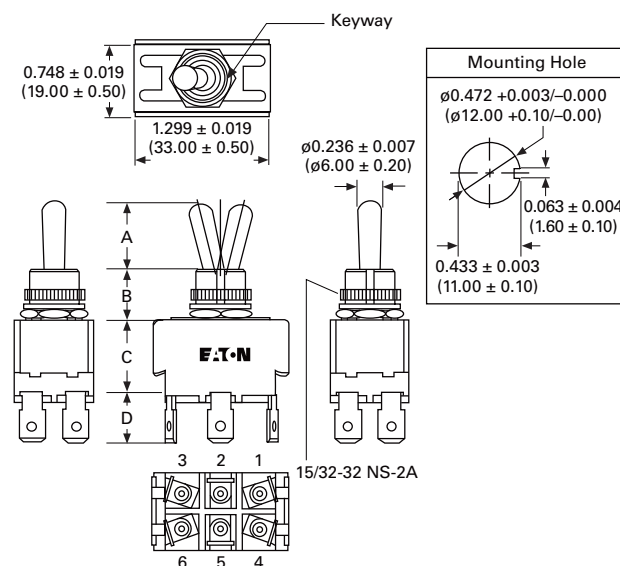
Approximate Dimensions in Inches (mm)

Single-Pole



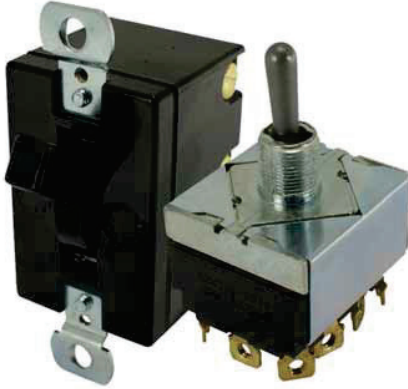
- A 0.649 ± 0.039
(16.50 ± 1.00)
- B 0.468 ± 0.012
(11.90 ± 0.30)
- C 0.677 ± 0.019
(17.20 ± 0.50)
- D 0.452 ± 0.019
(11.50 ± 0.50)

Two-Pole



- A 0.649 ± 0.039
(16.50 ± 1.00)
- B 0.468 ± 0.012
(11.90 ± 0.30)
- C 0.740 ± 0.019
(18.80 ± 0.50)
- D 0.452 ± 0.019
(11.50 ± 0.50)

Heavy Duty Hesitation Switches

**Product Description****One-Hole Panel Mount**

These heavy duty toggle switches are available in either two- or three-position. The three-position switches offer a unique positive center stop feature, which assures that the lever cannot be thrown from one side through the center OFF position without stopping. This design feature is a major factor in their widespread acceptance for motor reversing and speed control applications.

The most common application for the switch is to help prevent motor damage resulting from the high current generation by counter EMF of the armature at the time of reversing. This type of device is referred to within the industry as an anti-plugging, hesitation, positive stop or positive off switch. Typical applications include bench tools, coach and truck (electric lift) and X-ray equipment.

Contents**Description****Page**

Heavy Duty Hesitation Switches

Product Selection **V11-T4-28**Technical Data and Specifications **V11-T4-29**Dimensions **V11-T4-29****Flush Mount**

These three-position switches also offer the positive center stop feature where the lever cannot be thrown from one side through the center OFF position without stopping. The high ratings of this series allow it to be used with a broad range of heavy duty applications. Copper contacts and brass screw terminals are standard.

Standards and Certifications

- UL Recognized (except where noted)
- CSA Certified (where noted)



4.7

Toggle Switches

Heavy Duty Hesitation Switches

Product Selection

Heavy Duty Hesitation Switches—One-Hole Panel Mount



Rating	Poles and Throw ^②	Circuit with Toggle in ...			Base Circuit See Page V11-T4-35	Bushing Length "A" Inches (mm)	Lever Length "B" Inches (mm)	Lever Type	Catalog Number		
		UP Position 	CENTER Position 	DOWN Position (Keyway) 					Solder Terminals	Screw Lugs	0.250 in Spade Terminals
15A, 125 Vac ^① 10A, 250 Vac 3/4 hp, 250 Vac	2PDT	ON	OFF	ON	D	0.468 (11.89)	0.687 (17.45)	Bat	7992K11	7992K10	7992K12
15A, 125 Vac ^① 10A, 250 Vac 3/4 hp, 250 Vac	3PDT	ON	OFF	ON	F	0.468 (11.89)	0.687 (17.45)	Bat	7991K11	7991K10	7991K12
15A, 125 Vac ^① 10A, 250 Vac 3/4 hp, 250 Vac	4PDT	ON	OFF	ON	F	0.468 (11.89)	0.687 (17.45)	Bat	7990K11	7990K10	7990K12

Heavy Duty Hesitation Switches—Flush Mount



Rating	Poles and Throw	Circuit with Toggle in ...			Lever Type	Termination Type	Catalog Number
		UP Position 	CENTER Position 	DOWN Position (Keyway) 			
20A, 125 Vac/Vdc 10A, 250 Vac/Vdc	2PDT	ON	NONE	ON	Square	Screw	7810K1
		ON	OFF	ON	Square	Screw	7810K2 ^{③④}
30A, 125 Vac/Vdc 20A, 250 Vac/Vdc	2PDT	ON	OFF	ON	Square	Screw	7811K5 ^{③⑤}
	3PDT	ON	OFF	ON	Square	Screw	7812K2
	4PDT	ON	OFF	ON	Square	Screw	7813K2

Notes

- ^① Listed rating for 125 Vac also applies at 28 Vdc.
- ^② Supplied in a four-pole base.
- ^③ CSA Certified.
- ^④ Also rated 5A, 600 Vac; 1-1/2 hp, 250 Vdc; 2 hp, 240 Vac.
- ^⑤ Also rated 2 hp, 250 Vac/Vdc.

Technical Data and Specifications

Heavy Duty Hesitation Switches

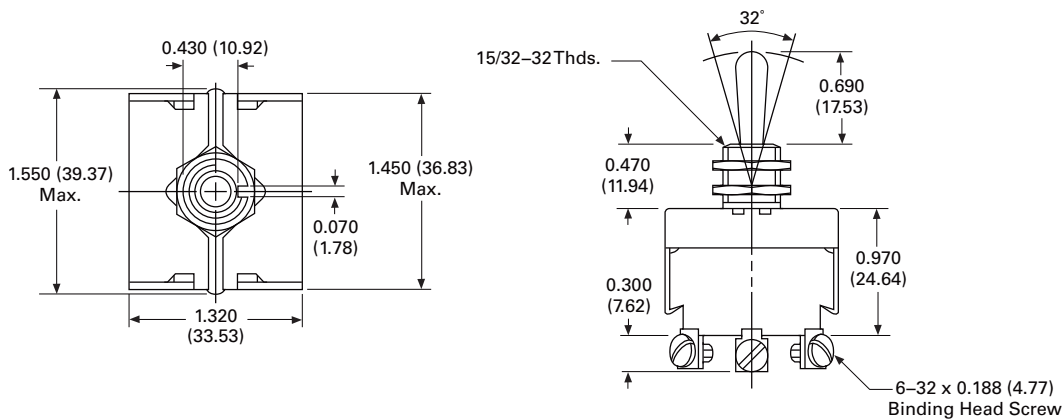
Description	Specification
Ratings	See Product Selection tables; Switch ratings at 125 Vac also apply to 28 Vdc
Circuits	2PDT, 3PDT, 4PDT; maintained action
Contact mechanism	
One-hole panel mount	AC rated devices—slow-make/Slow-break butt contact AC/DC rated devices—Quick-make/quick-break wiping contacts
Flush mount	Quick-make/quick-break wiping contacts
Contact material	
One-hole panel mount	AC rated devices: Movable—silver-plated copper with fine or coin silver contact face button Stationary—copper with fine or coin silver contact face button AC/DC rated devices: Movable—copper Stationary—bronze
Flush mount	Movable—copper Stationary—copper
Terminal types	Screw terminals—brass
Mounting means	
One-hole panel mount	AC rated devices: Threaded bushing—0.468 in (11.89 mm) dia., 32 threads/in Keyway—0.068 x 0.035 in (1.73 x 0.89 mm) deep, provide anti-rotation feature Hardware supplied— 1 hexagon locknut (Catalog Number 15-192) and 1 hex facenut (Catalog Number 15-966-6) Furnished unassembled
Flush mount	Flush mounting panel tabs
Dielectric withstand	1000V rms minimum
Operating temperature range	0° to 150°F (–17.8° to 65.6°C)

Dimensions

Approximate Dimensions in Inches (mm)

One-Hole Panel Mount

7990K10—4PDT



4.7

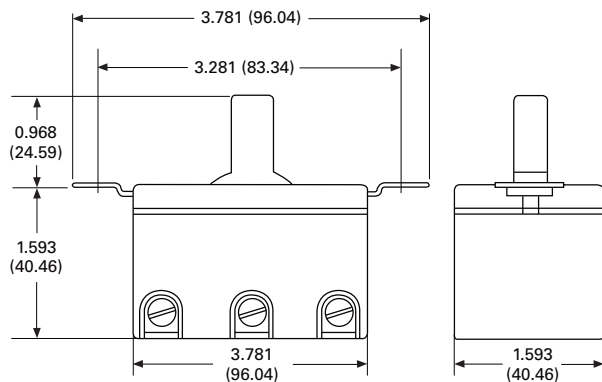
Toggle Switches

Heavy Duty Hesitation Switches

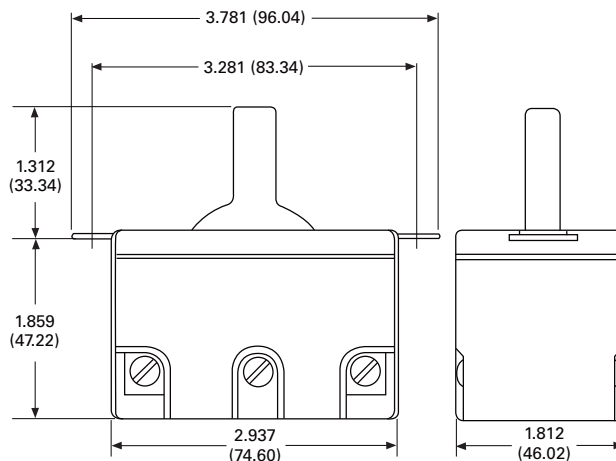
Approximate Dimensions in Inches (mm)

Flush Mount

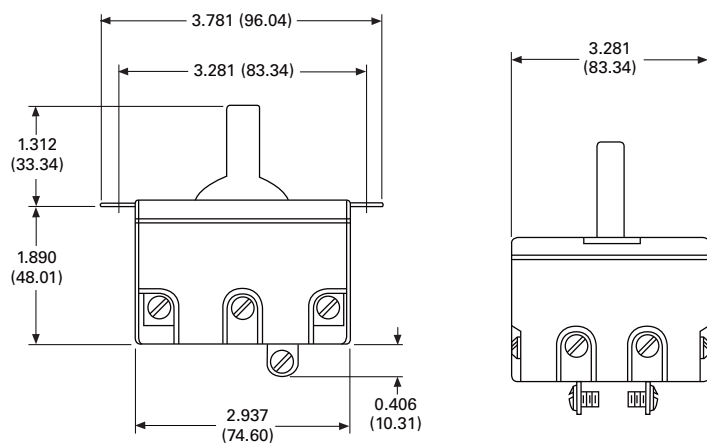
7810K2—2PDT



7811K2—2PDT



7813K2—4PDT



Mounting Hardware

Product Description

One-Hole Mounting Switches

All bushing mounted switches are furnished with two mounting nuts. One nut is mounted behind the panel to prevent the bushing sleeve from being distorted if the front panel is overtightened

Eaton accepts no responsibility for damage to switches mounted without the backup nuts.

Product Selection

Mounting Hardware for One-Hole Mounting Switches—Mounting Nuts ^①

Size	Description	Material	Thickness Dim. "A" in Inches (mm)	Inside Diameter Dim "B" in Inches (mm)	OD or Dimension Across Flats Dim. "C" in Inches (mm)	Dimension Across Corners Dim. "D" in Inches (mm)	Catalog Number
3/8-27	Hexagon locknut	Nickel-plated brass	0.125 (3.18)	—	0.562 (14.27)	0.625 (15.88)	15-2526-2
3/8-24		Bright nickel-plated brass		—			15-1525-6
11/32-32		Nickel-plated brass	0.063 (1.60)	—	0.473 (12.01)	0.531 (13.49)	15-1525-2
15/32-32	Hexagon locknut	Zinc-chromate treated	0.075 (1.91)	—	0.625 (15.88)	—	15-192
		Bright nickel-plated brass	0.078 (1.98)	—	0.546 (13.87)	0.625 (15.88)	15-2525-58
		Zinc-chromate treated	0.188 (4.76)	0.783 (19.89)	1.125 (25.80)	—	15-2528-2
	Hexagon facenut	Nickel-plated brass	0.078 (1.98)	—	0.562 (14.27)	0.656 (16.66)	15-966-2
		Semi-lustre nickel-plated brass		—			19-966-6
	Knurled facenut	Bright nickel-plated brass	0.066 (1.68)	—	0.562 (14.27)	—	15-124F1
		Black cupric oxide-plated brass		—		—	15-124F5
		Brass nickel-plated brass	0.109 (2.77)	—	0.625 (15.88)	—	15-90
	Chamfered dress nut	Bright nickel-plated brass	0.151 (3.84)	0.312 (7.92)	0.687 (17.45)	—	15-994-2
	Standard knurl nut with shoulder	Nickel-plated brass	0.109 (2.77)	—	0.593 (15.06)	—	15-2534-14
	Dress nut	Satin chrome-plated brass	0.125 (3.18)	—	0.562 (14.27)	—	15-2523-4
		Black nylon	0.187 (4.75)	0.390 (9.91)	0.640 (16.26)	—	15-1048-3
	Knurled dress nut	Chrome-plated brass	0.187 (4.75)	0.312 (7.92)	0.640 (16.26)	—	15-189-5
3/4-32	Hexagon facenut	Nickel-plated steel	0.093 (2.36)	—	0.937 (23.80)	1.078 (27.38)	15-1043
#8-40	Hexagon locknut with facenut	Nickel-plated steel	0.060 (1.52)	—	0.245 (6.22)	0.216 (5.49)	15-1047

Note

^① Hardware items are sold for use with Eaton switches only. Minimum ordering quantity on all items is 100.

4.8

Toggle Switches

Accessories

Mounting Washers and Locking Ring ^①

Size	Description	Material	Approximate Dimensions in Inches (mm)				Catalog Number
			Thickness Dim. "A"	Inside Diameter Dim "B"	OD or Dimension Across Flats Dim. "C"	Dimension Across Corners Dim. "D"	
For 15/32 bushing	Locking ring	Zinc-plated steel	0.040 (1.02)	0.475 (12.07)	0.718 (18.24)	—	29-761-5

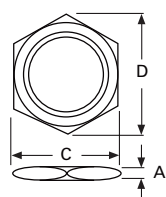
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Dimensions

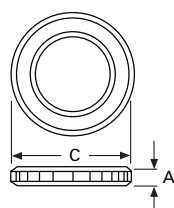
Approximate Dimensions in Inches (mm)

Mounting Hardware

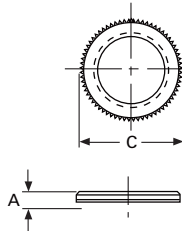
Hexagon Locknuts or Facenuts



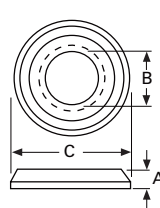
Knurled Facenut



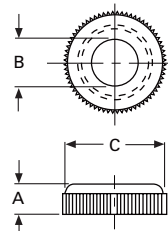
Knurled Nut with Shoulder



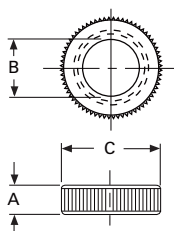
Chamfered Dress Nut Catalog No. 15-994-2



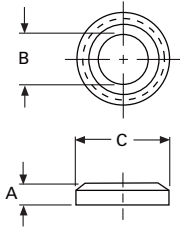
Knurled Dress Nut Catalog No. 15-189-5



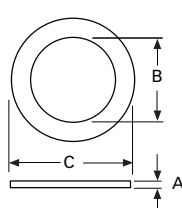
Knurled Dress Nut Catalog No. 15-1048-3



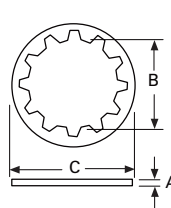
Dress Nut Catalog No. 15-2523-4



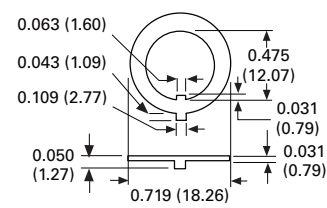
Plain Washer



Internal Tooth Lockwasher



Locking Ring



Note

^① Hardware items are sold for use with Eaton switches only.

Decorator Facenuts

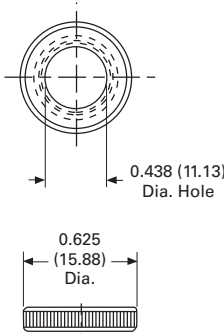
Product Selection ^①

Type	Color	Catalog Number
Knurled facenuts	Bright black	15-1048-3
	Bright clear	15-1048-7
Beveled facenuts	Bright black	15-1049-3
	Bright clear	15-1049-7

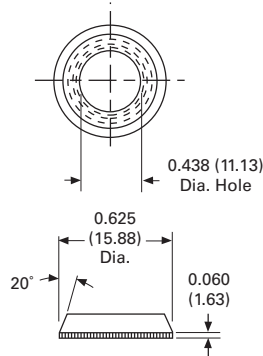
Dimensions

Approximate Dimensions in Inches (mm)

Catalog Number 15-1048



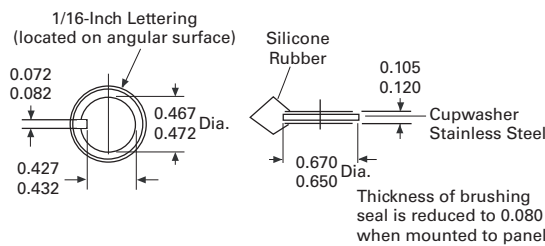
Catalog Number 15-1049



Panel Seal

- Prevents moisture and contaminants from entering panel enclosure
- Behind panel mounting
- Stainless-steel cup washer ensures proper seating of silicone rubber seal
- Seal withstands 20 psi water pressure
- Cat. No. 32-341

Dimensions—32-341



Replacement Terminal Screws

Product Selection

Screw Size	Catalog Number ^②
#5-40 x 1/8 in	11-1117
#5-40 x 5/32 in	11-26
#5-40 x 3/16 in binding head	811-7206
#5-40 x 1/4 in binding head	811-14
#6-32 x 3/16 in binding head	811-2
#6-32 x 1/4 in binding head	811-161
#6-32 x 1/4 in binding head	811-7248
#6-32 x 1/4 in pan head, brass	11-1893
#6-32 x 3/8 in binding head	811-129
#8-32 x 3/16 in binding head	11-1618
#8-32 x 1/4 in	11-1369
#8-32 x 1/4 in	811-408-2
#8-32 x 3/8 in binding head	11-1766
#8-32 x 3/8 in binding head	11-6074-4
#6-32 x 7/32 in binding head	11-6085-2

Toggle Boot

- Prevents moisture and contaminants from entering lever to bushing enclosure
- Front panel mounting
- Threaded mounting nut ensures proper assembly of silicon rubber boot
- Brass nut: 15/32-32 NS-2A
- Black color

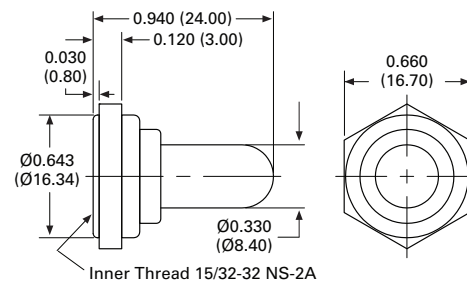
SW1RY3030



Product Selection

Mounting Description	Color	Catalog Number
Front panel mounting Molded in brass mounting nut (15/32-32 NS-2A) ensures proper assembly of silicon rubber boot	Black	SW1RY3030

Dimensions—15/32-32 NS-2A



Notes

- Decorator facenuts for 15/32 in bushing switches, 15/32-32 thread.
- Hardware items are sold for use with Eaton switches only.

4.8

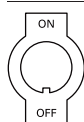
Toggle Switches

Accessories

Indicating Plates

Product Selection—Indicating Plates for 15/32-Inch Bushing Mounted Switches

4



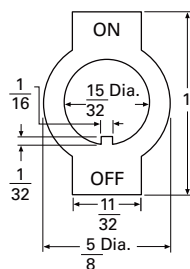
Keyway Location	Marking Opposite Keyway	Keyway Side	Material	Finish	Catalog Number
Keyway on bottom	ON	OFF	0.032 in steel	Plain	30-5632
				Statuary bronze	30-5632-3
				Burnished nickel	30-5632-4
			0.032 in brass	Black cupric oxide ^①	30-2899-3
	RAD	PHO	0.032 in steel	Statuary bronze	30-5632-7
				Burnished nickel	30-5632-6
	RUN	START	0.032 in steel	Burnished nickel	30-5632-11
	HOT	COLD			30-5632-15
	HI	LOW			30-5632-16
	ON	STOP			30-5632-17
	FOR	REV	0.032 in steel	Burnished nickel	30-2899-2
	AUTO	TEST			30-2899-6
	PUSH	START			30-2899-7
	RUN	TEST			30-2899-9
Keyway on side	BLANK	BLANK	0.032 in steel	Burnished nickel	30-5632-8
	ON	OFF			30-5632-13
Keyway on top	ON	OFF	0.032 in steel	Burnished nickel	30-5632-12
	OFF	ON			30-5632-14
	SET	RUN			30-2899-10
	BLANK	RESET			30-2899-12
Keyway on top	O	I	0.032 in steel	Burnished nickel	30-5632-23
	I	O			30-5632-19



Dimensions

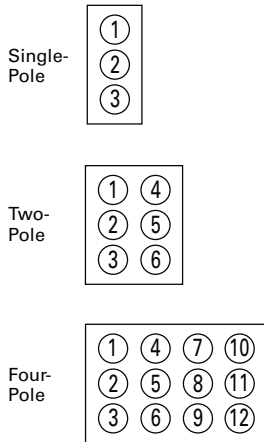
Approximate Dimensions in Inches

Indicating Plate



Note

^① White lettering.



Terminal Identification

When specified on order, switches will have the terminals identified as shown in the illustration at right. Terminal markings will be ink-stamped on the side of the switch case and unused terminal positions will not be identified.

All views are rear of switch with keyway or at down as applicable. Terminal numbers 2, 2 and 5 and 5 and 8 are considered inboard terminals for single-, two- and four-pole switches respectively. All others are considered outboard.

"Three Independent" ON-ON-ON Circuit Diagram

For switch modified with "Three Independent" ON-ON-ON special circuit. External jumpers are required. User to connect wiring per instructions given below.

ON-ON-ON Special Circuit

Connection Points	Single-Pole
Connect common to terminals	2
Connect circuit "A" to terminals	6
Connect circuit "B" to terminals	4
Connect circuit "C" to terminals	1

Circuit with Lever in ...			
3 ON Independent	No. of Poles	UP Position	CENTER Position (Maintained)
			DOWN Position (Keyway)
		Circuit A	Circuit B
1 PDT	1		

Circuit Diagrams

Special General Purpose Toggle Circuits

Circuit Number	Schematic
7530	
7571	
7555	

Toggle Circuit Diagrams

Circuit Letter	Schematic	Circuit Letter	Schematic
A 1PST		I 2 Circuit ⑤	
B 1PDT		J 1PST	
C 2PST		K 1PDT	
D 2PDT		L 2PST	
E 4PST ①		M 2PST	
F 4PDT ②		N ⑥ 2PDT	
G ③ 1PST		P 1PDT	
H ④ 1PDT		Q ⑦ 2 Circuit	

Legends

Toggle Switch Legend

Legend	Toggle Switch Type
●	Contact terminal—will make contact with switch lever
○	Isolated terminal—does not make contact with lever
⋈	Center terminal and switch lever
⊗	Bulb
⚡	Momentary contact
•	Denotes mechanical contact portion

Notes

- ① Poles 11 and 12 may be eliminated for three-pole devices.
- ② Poles 10, 11 and 12 may be eliminated for three-pole devices.
- ③ Dependent lamp.
- ④ Independent lamp.
- ⑤ Two circuit—indicates a special type of double-throw switch in which the two circuits being controlled may be independent of each other.
- ⑥ For 206 Series, an additional lamp is available.
- ⑦ Available in 1PDT or 2PDT.