

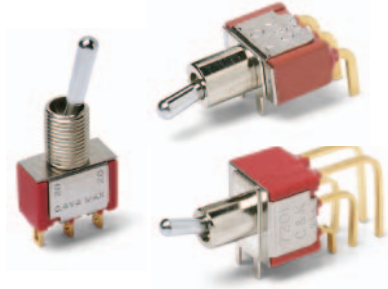
7000 Series Miniature Toggle Switches

Features/Benefits

- Multi-pole and multi-position
- Wide variety of actuator and termination options
- Epoxy terminal-seal compatible with bottom wash cleaning
- RoHS complaint models available

Typical Applications

- Telecommunications
- Instrumentation
- Medical equipment



Specifications

CONTACT RATING: B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material: 5 AMPS @ 120 V AC or 28 V DC; 2 AMPS @ 250 V AC. See page F-15 for additional ratings.

ELECTRICAL LIFE: 7X01 and UX1 models: 100,000 make-and-break cycles at full load. All other models: 40,000 cycles.

CONTACT RESISTANCE: Below 10 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10⁹ Ω min.

DIELECTRIC STRENGTH: 1000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

For materials see page F-4.

NOTE: Any models supplied with P, S R, Q, B or G contact material are RoHS compliant and compatible.

NOTE: Specifications listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages F-4 thru F-16. For additional options not shown in catalog, consult our Customer Service Center.

Switch Function	Actuator	Bushing	Terminations	Contact Material	Seal	Actuator Color/Finish	KXX Actuator Color/Finish	Bushing Finish
7101 SP On-None-On	M .200" high	D .280 high, keyway	A Right angle, PC thru-hole	B Gold	E Epoxy	NONE Bright chrome	NONE Natural aluminum	NONE Nickel on all bushings (except D8, satin chrome)
7103 SP On-Off-On	P3 Flatted, anti-rotation, .450" high	H .296 high, flat	AV2 Vert. right angle, PC thru-hole	P Gold, matte-tin	I Epoxy potted base	2 Black	2 Black anodized aluminum	2 Black
7105 SP Mom.-Off-Mom.	S .420" high	Y .350 high, keyway	C PC Thru-hole	Q Silver		3 Red	3 Red anodized aluminum	
7107 SP On-Off-Mom.	T .687" high, 15/32 bushing	NONE No bushing choice required	V3 .460 high, V-bracket	S Silver, matte-tin		S Satin chrome	7 Blue anodized aluminum	
7108 SP On-None-Mom.	K2 Locking lever, .704" high	CW Splashproof	Z Solder lug	G Gold over silver				
7109 SP None-On-Mom.	D8 .280" high, flat	D9 .280" high, keyway	A2 Right angle, PC thru-hole	R Gold over silver, matte-tin				
7201 DP On-None-On	K9 Locking lever, .704" high	H3 .315" high, keyway	A3 Right angle, PC thru-hole					
7203 DP On-Off-On	K12 Locking lever, .732" high	H4 8mm high, keyway	A4 Right angle, PC thru-hole					
7205 DP Mom.-Off-Mom.	K19 Locking lever, .732" high	Y1 .378" high, keyway	AW1 Right angle, extended, PC thru-hole					
7207 DP On-Off-Mom.	L .840" high	Y3 8.9mm high, keyway	AW4 Right angle, extended, PC thru-hole					
7208 DP On-None-Mom.	L1 .640" high	Y4 .378" high, flat	V2 .555" high, V-bracket					
7211 DP On-On-On	L1P Anti-rotation, .640" high	Y9 .350" high, keyway	V4 .630" high, V-bracket					
7213 DP On-On-Mom.	L2 .550" high		V6 .460" high, V-bracket					
7215 DP Mom.-On-Mom.	L2P Anti-rotation, .550" high		V7 .630" high, V-bracket					
7301 3P On-None-On	L3 Plastic .940" inch		V8 .953" high, V-bracket					
7303 3P On-Off-On	L40 Lever handle without cap		V9 1.150" high, V-bracket					
7305 3P Mom.-Off-Mom.	L41 .531" high lever handle with cap		V21 .555" high, snap-in V-bracket					
7308 3P On-None-Mom.	L42 .838" high lever handle with cap		V31 .460" high, snap-in V-bracket					
7401 4P On-None-On	MP Anti-rotation, .200" high		V41 .630" high, snap-in V-bracket					
7403 4P On-Off-On	P1 Flatted, anti-rotation, .840" high		V71 .630" high, snap-in V-bracket					
7405 4P Mom.-Off-Mom.	P4 Flatted, anti-rotation, .250" high		V81 .953" high, snap-in V-bracket					
7408 4P On-None-Mom.	SP Anti-rotation, .420" high							
7411 4P On-On-On	T1 .487" high, 15/32 bushing							
7413 4P On-On-Mom.	T1P Anti-rotation, .487" high, 15/32 bushing							
7415 4P Mom.-On-Mom.	T2P Flatted, anti-rotation, .610" high, 15/32 bushing							
	TP Anti-rotation, .687" high, 15/32 bushing							

Note: UL models available, see pages F-4 & F-5.

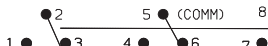


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

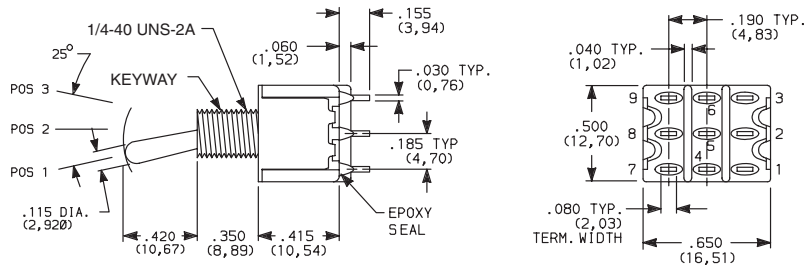


7000 Series Miniature Toggle Switches

SWITCH FUNCTION

NO. POLES	MODEL NO.	UL** MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
			POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
			KEYWAY 	KEYWAY 	KEYWAY 	KEYWAY 	KEYWAY 	KEYWAY 	
3P	7301	U31	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	
	7303	U33	ON	OFF	ON	2-3,5-6,8-9	OPEN	2-1,5-4,8-7	
	7305	U35	MOM.	OFF	MOM.				
	7307	U37	ON	OFF	MOM.				
	7308	U38	ON	NONE	MOM.	2-3,5-6,8-9	N/A	2-1,5-4,8-7	

3PDT



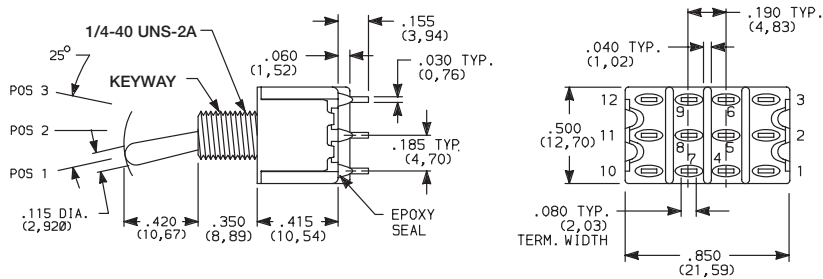
Part number shown: 7301SYZQE

Terminal Numbers
For Reference Only

4P	7401	U41	ON	NONE	ON	2-3,5-6,8-9,11-12	N/A	2-1,5-4,8-7,11-10		
	7403	U43	ON	OFF	ON	2-3,5-6,8-9,11-12	OPEN	2-1,5-4,8-7,11-10		
	7405	U45	MOM.	OFF	MOM.					
	7408	U48	ON	NONE	MOM.					
	7411*	U411*	ON	ON	ON	2-3,5-6,8-9,11-12	2-3,5-4,8-9,11-10	2-1,5-4,8-7,11-10		
	7413*	U413*	ON	ON	MOM.					
	7415*	U415*	MOM.	ON	MOM.					

4PDT

4PDT



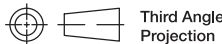
Part number shown: 7401SYZQE

Terminal Numbers
For Reference Only

MOM. = Momentary

Wiring for 3-way switch, see Section N.

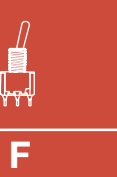
** U11-U415 model nos. with all options when ordered with G, Q, R or S contact material.



Third Angle
Projection

Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

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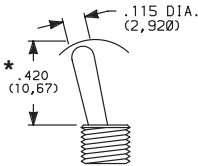
Toggle

7000 Series Miniature Toggle Switches

ACTUATOR

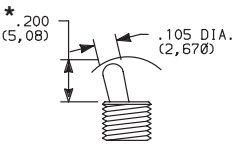
ACTUATOR FINISH

S .420" HIGH ¹
SP ANTIROTATION, .420" HIGH ^{2,3}



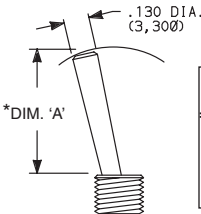
S actuator standard when ordered with C, W-W5, Z & Z3 terminations.
 Caps are available separately, see page F-16.

M .200" HIGH ¹
MP ANTIROTATION, .200" HIGH ^{2,3}



M actuator standard when ordered with all terminations except C, W-W5, Z & Z3.
 Caps are available separately, see page F-16.

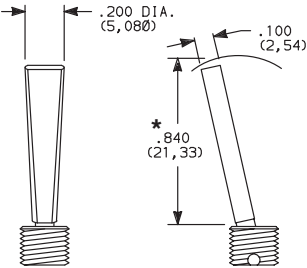
L, L1, L2 .840", .640", .550" HIGH ¹
L1P, L2P ANTIROTATION, .840", .640", .550" HIGH ^{2,3}



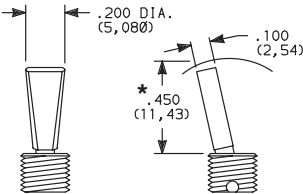
OPTION CODE	DIM 'A'
L	.840 (21,34)
L1, L1P	.640 (16,26)
L2, L2P	.550 (13,97)

Caps are available separately, see page F-16.

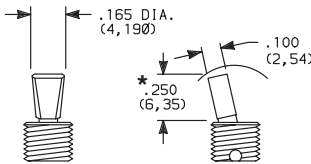
***P1** FLATTED WITH ANTIROTATION, .840" HIGH ^{2,3}



***P3** FLATTED WITH ANTIROTATION, .450" HIGH ^{2,3}

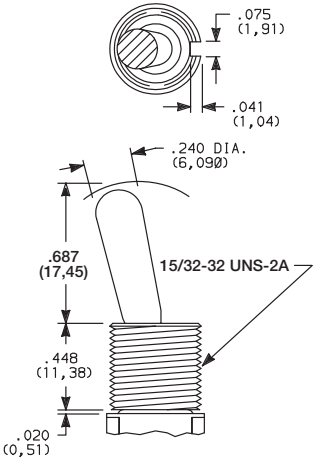


***P4** FLATTED WITH ANTIROTATION, .250" HIGH ^{2,3}



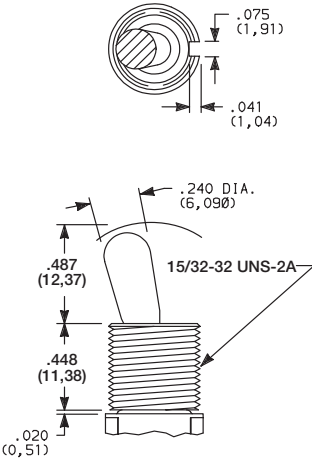
*Dress nut part number 709901201 supplied standard with threaded bushing. (Part number 709903201 with metric threaded bushings.)

T .687 (17,45) HIGH ^{1,2}
TP ANTIROTATION, .687 (17,45) HIGH, 15/32 BUSHING ^{1,2,3}

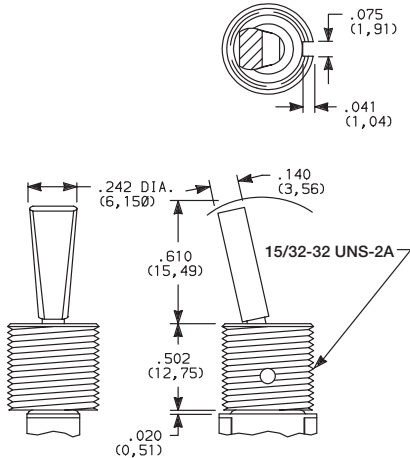


Bushing option code not required unless CW splashproof bushing ordered. TP & T1P actuators not available with CW splashproof bushing. All TXX actuators not available on single pole models with A-A4, AW1-AW4 terminations.

T1 .487 (12,37) HIGH ^{1,2}
T1P ANTIROTATION, .487 (12,37) HIGH, 15/32 BUSHING ^{1,2,3}



T2P FLATTED, ANTIROTATION, .610" HIGH, 15/32 BUSHING ^{1,2,3}



Bushing option code not required. T2P actuator not available with CW splashproof bushing or single pole models with A-A4, AW1-AW4 terminations.

F

Toggle

¹ L, L1, L2, M, S & TXX actuators not available with Y1 bushing.
² L1P, L2P, MP, P1, P3, P4, SP & TXX actuators not available with D8 & H4 bushing.
³ Antirotation: Provides anti-"push-in" feature on actuator.
 * Add .070 (1,78) for D, D8 & D9 bushings, subtract .020 (0,51) for H3 bushing.

OPTION CODE	ACTUATOR FINISH
NONE	BRIGHT CHROME-With Nickel Plated Bushing
2	BLACK
S	SATIN CHROME

NOTE: Black hardware is supplied when either black actuators or bushings are specified. For additional hardware, see Section N.



Dimensions are shown: Inches (mm)
 Specifications and dimensions subject to change



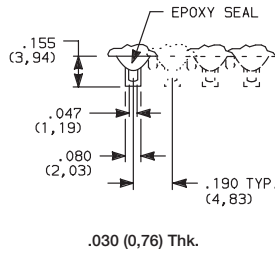
ACTUATOR

Toggle

7000 Series Miniature Toggle Switches

TERMINATIONS

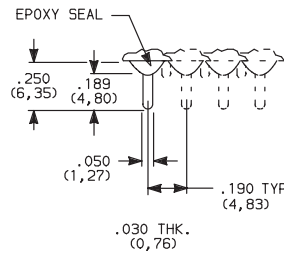
Z SOLDER LUG



SPDT thru 4PDT

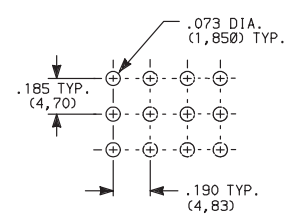
Not available with P, R or S contact materials.

C PC THRU-HOLE

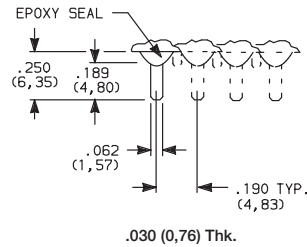


SPDT thru 4PDT

PC MOUNTING



Z3 QUICK CONNECT

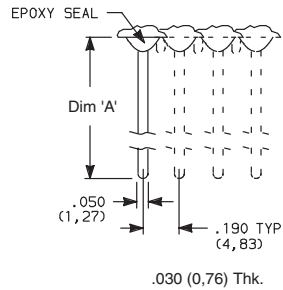


SPDT thru 4PDT

Not available with P, R or S contact materials.
Mating quick connector available, order part number 530100000, page F-16.

W, W1, W3, W4, W5

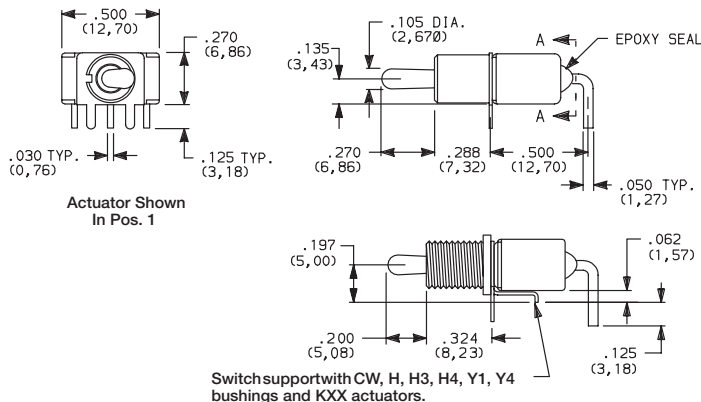
WIRE WRAP



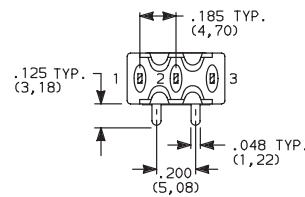
SPDT thru 4PDT

OPTION CODE	DIM 'A'
W	.750 (19,05)
W1	.964 (24,48)
W3	.425 (10,80)
W4	1.062 (26,97)
W5	1.305 (33,15)

A RIGHT ANGLE, PC THRU-HOLE



Part No. Shown: 7101MHABE



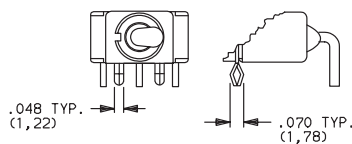
SECTION A-A

Terminal Nos.
For Reference Only



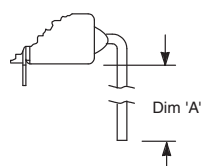
7101MD9ABE
Horizontal Actuation
SPDT

A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



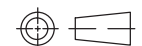
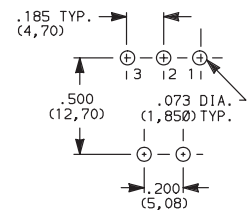
Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

AW1, AW4 RIGHT ANGLE, EXTENDED, PC THRU-HOLE



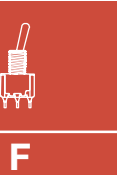
OPTION CODE	DIM 'A'
AW1	.72 (18,3)
AW4	.83 (21,1)

PC MOUNTING



Third Angle
Projection

Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change



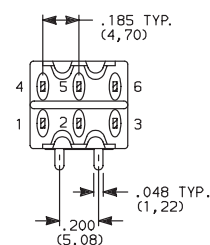
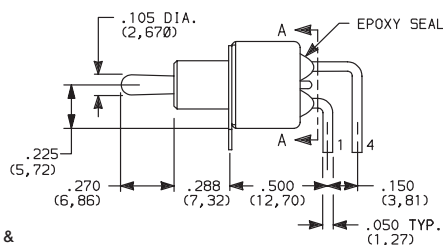
Toggle

TERMINATIONS

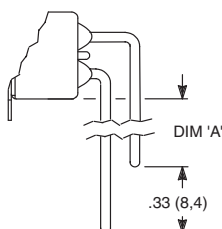
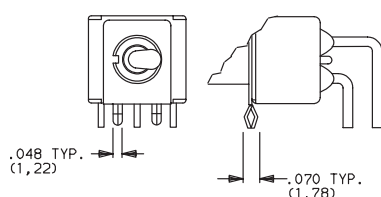
Diagram of a square component with dimensions:

- Width: .500 (12, 70)
- Height: .450 (11, 43)
- Pin Thickness: .030 TYP. (0, 76)

.125 TYP.
(3, 18)
Terminals &
Support

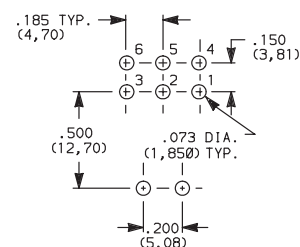


AW1, AW4 RIGHT ANGLE, EXTENDED,
PC THRU-HOLE



OPTION CODE	DIM 'A'
AW1	.40 (10,2)
AW4	.50 (12,7)

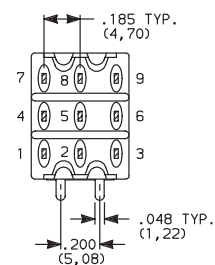
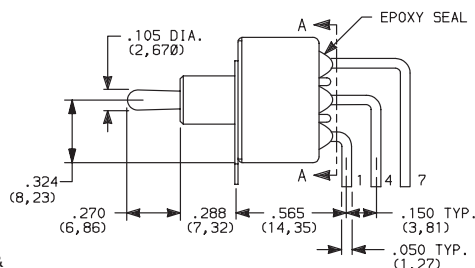
PC MOUNTING



A RIGHT ANGLE, PC THRU-HOLE

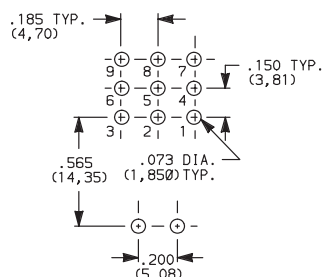


Actuator Shown
In Pos. 1



SECTION A-A

PC MOUNTING



F-10

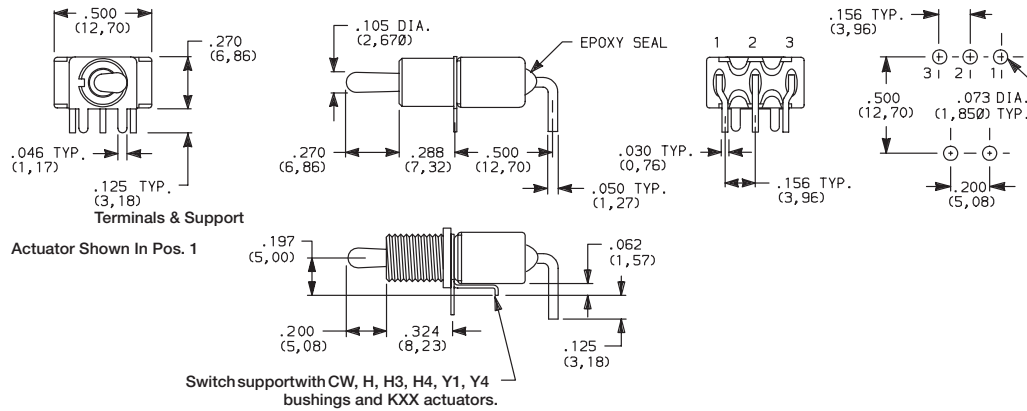
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

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7000 Series Miniature Toggle Switches

TERMINATIONS

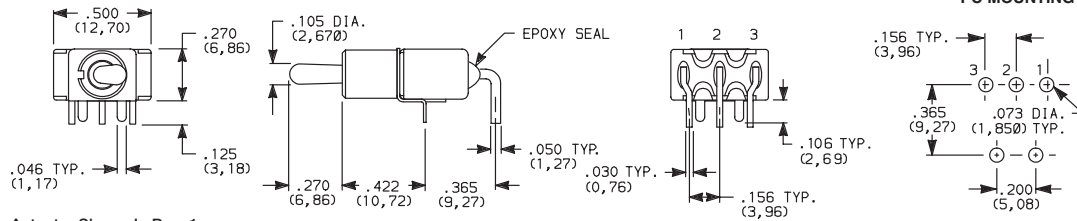
A2 RIGHT ANGLE, PC THRU-HOLE, .156" PITCH



7101MHA2BE
Horizontal Actuation
SPDT

Not available with TXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

A4 RIGHT ANGLE, PC THRU-HOLE .156" PITCH

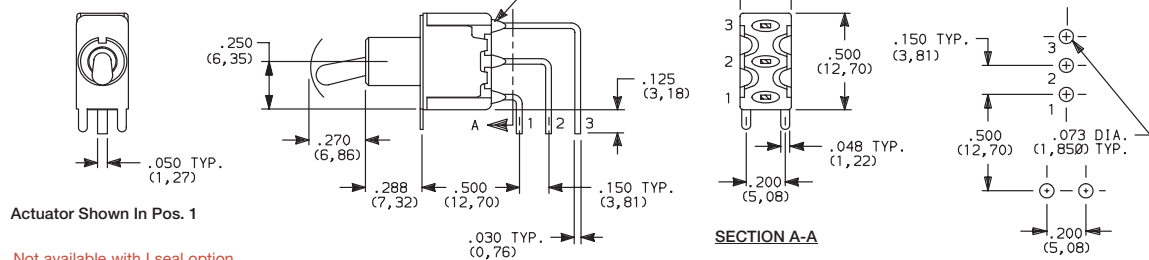


7101MD9A4BE
Horizontal Actuation
SPDT

Actuator Shown In Pos. 1
Not available with KXX & TXX actuators, CW, H, H3, H4, Y1 & Y4 bushings, and I seal. Terminal bend radii and lead-in manufacturing option.

NOTE: The A4 option is available with any contact material and can be UL recognized and CSA certified. The PC pattern must clear switch support legs.

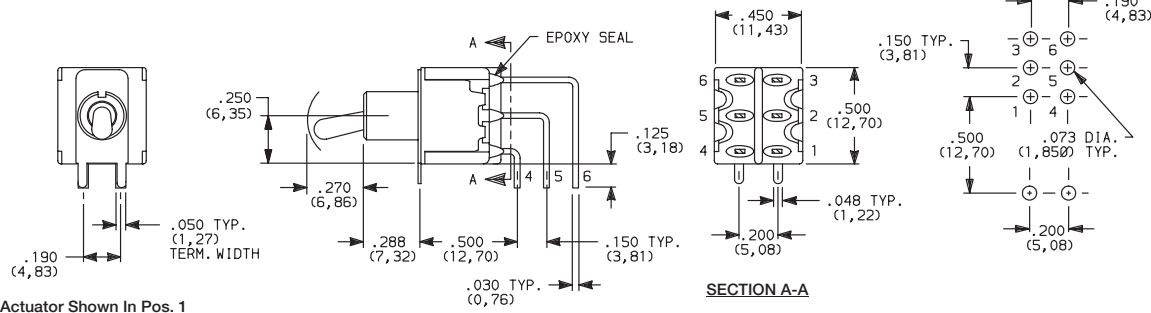
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



7101MD9AV2BE
Horizontal Actuation
SPDT

Actuator Shown In Pos. 1
Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



7201MD9AV2BE
Vertical Actuation
DPDT

Actuator Shown In Pos. 1
Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change



Toggle

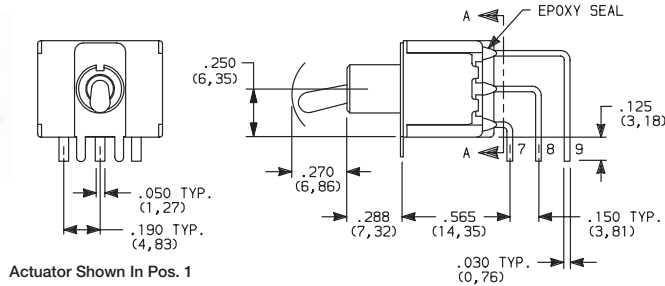
7000 Series Miniature Toggle Switches

TERMINATIONS

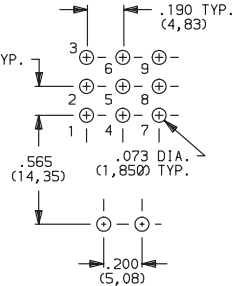
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH



7301MD9AV2BE
Vertical Actuation
3PDT



PC MOUNTING

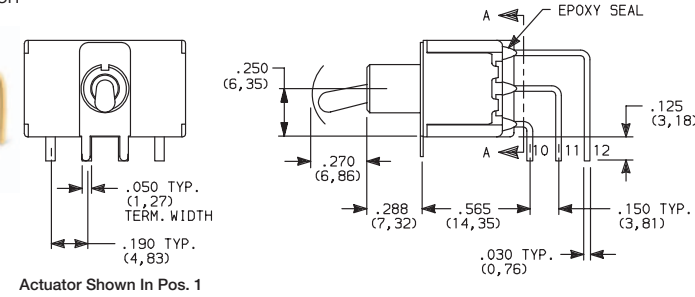


Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

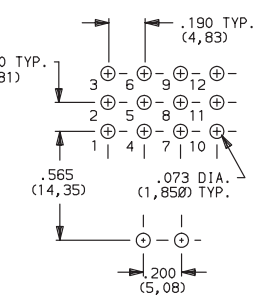
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH



7401MD9AV2BE
Vertical Actuation
4PDT



PC MOUNTING



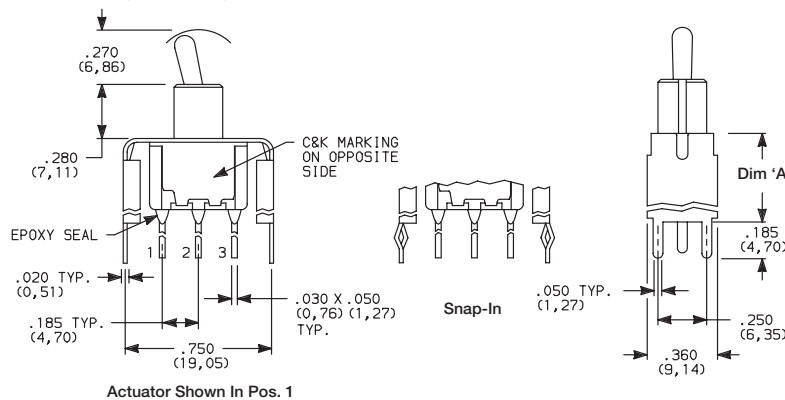
Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET

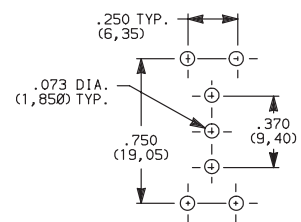
V21, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



7101MD9_BE
SPDT



PC MOUNTING



OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V6	.460 (11,68)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)

Not available with I seal option.



F

Toggle



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

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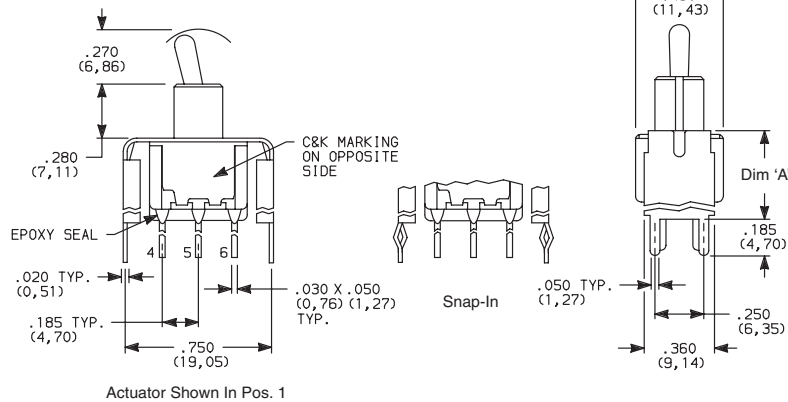
7000 Series Miniature Toggle Switches

TERMINATIONS



V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET

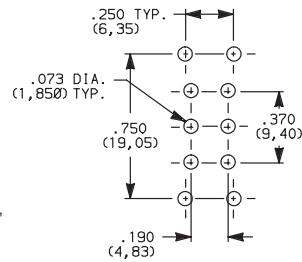
V21, V61, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

PC MOUNTING



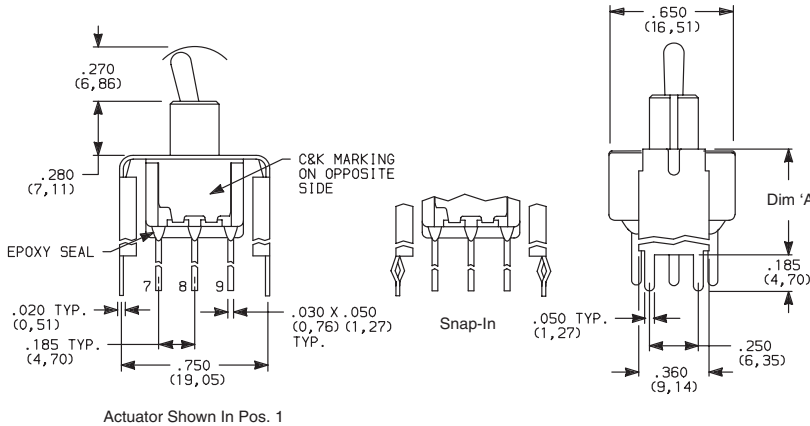
OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V6, V61	.460 (11,68)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)



7201MD9_BE
DPDT

V2, V7, V8 VERTICAL MOUNT, V-BRACKET

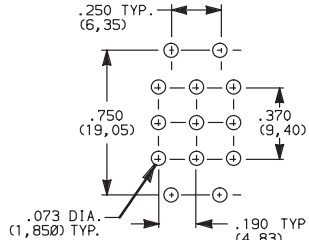
V21, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

PC MOUNTING



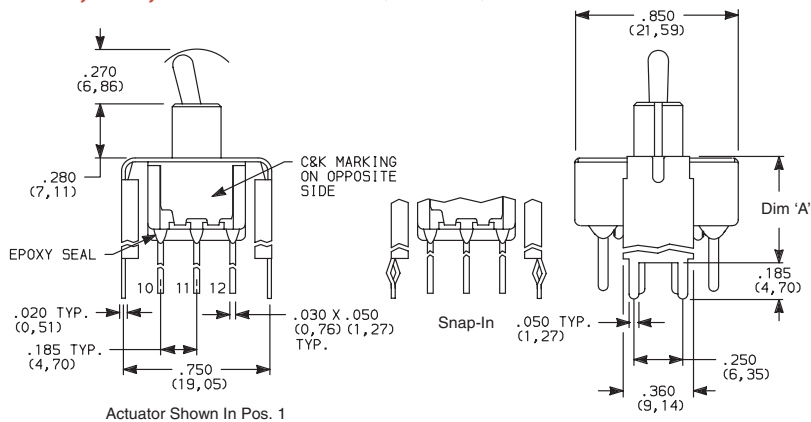
OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)



7301MD9_BE
3PDT

V2, V7, V8 VERTICAL MOUNT, V-BRACKET

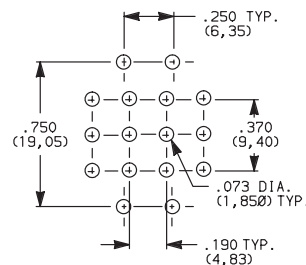
V21, V71, V81 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

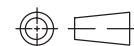
PC MOUNTING



OPTION CODE	DIM 'A'
V2, V21	.555 (14,10)
V7, V71	.630 (16,00)
V8, V81	.953 (24,21)



7401MD9_BE
4PDT



Third Angle
Projection

Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

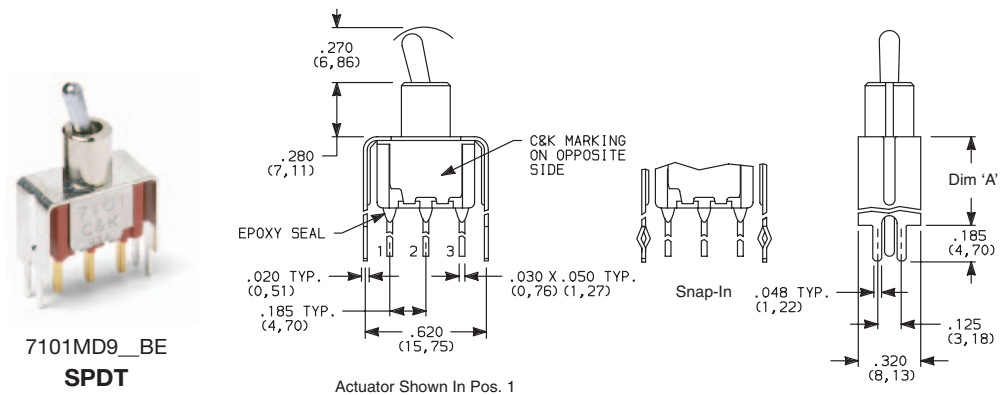


7000 Series Miniature Toggle Switches

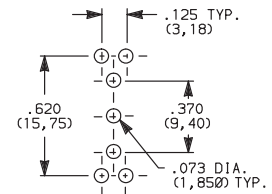
TERMINATIONS

V3, V4, V9 VERTICAL MOUNT, V-BRACKET

V31, V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



PC MOUNTING

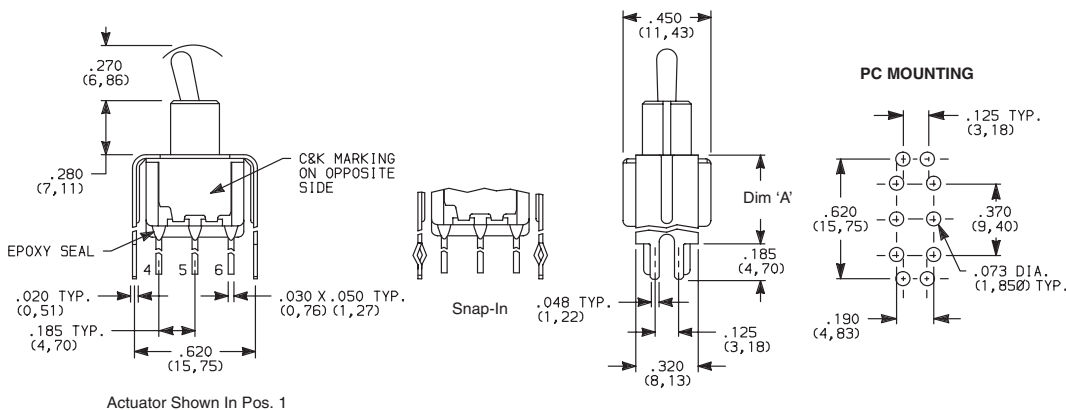


OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4, V41	.630 (16,00)
V9	1.150 (29,21)

Not available with I seal option.

V3, V4, V9 VERTICAL MOUNT, V-BRACKET

V31, V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



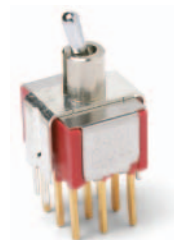
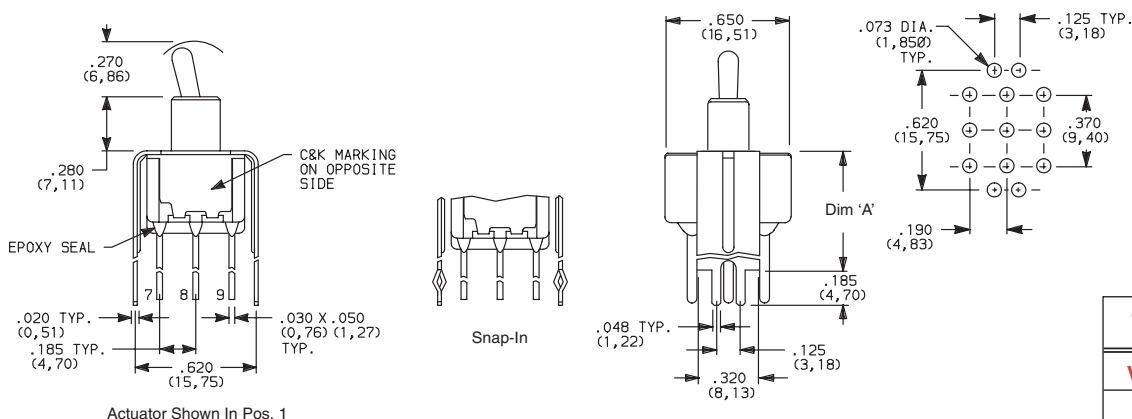
7201MD9_BE
DPDT

OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4, V41	.630 (16,00)
V9	1.150 (29,21)

Not available with I seal option.

V4, V9 VERTICAL MOUNT, V-BRACKET

V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



7301MD9_BE
3PDT

OPTION CODE	DIM 'A'
V4, V41	.630 (16,00)
V9	1.150 (29,21)

Not available with I seal option.



Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

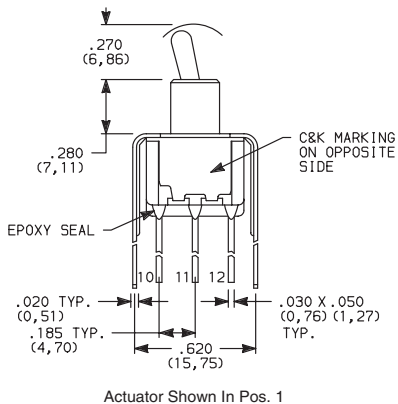
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7000 Series Miniature Toggle Switches

TERMINATIONS

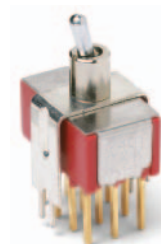
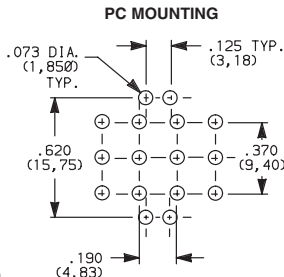
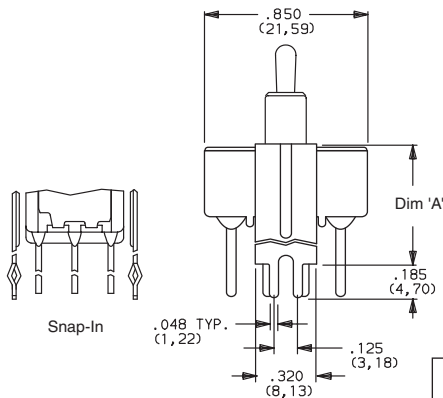
V4, V9 VERTICAL MOUNT, V-BRACKET

V41 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.



7401MD9_BE
4PDT

OPTION CODE	DIM 'A'
V4, V41	.630 (16,00)
V9	1.150 (29,21)

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD ¹	GOLD ¹	LOW LEVEL/ DRY CIRCUIT	0.4 VA MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN ⁶		
Q	SILVER ^{4,5}	SILVER ⁵	POWER	5 AMPS @ 120 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
S		MATTE-TIN ⁶		
G	GOLD OVER SILVER ^{2,3}	GOLD ³	LOW LEVEL/DRY CIRCUIT OR POWER	0.4 VA MAX @ 20 V AC OR DC MAX. OR 5 AMPS @ 120 V AC OR 28 V DC; 2 AMPS @ 250 V AC.
R		MATTE-TIN ⁶		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

¹ CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

² END CONTACTS: Coin silver, with gold plate over nickel plate.

³ CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

⁴ END CONTACTS: Coin silver, silver plated.

⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.

⁶ TERMINALS: Copper alloy, with matte tin alloy nickel plate.

NOTE: Any models supplied with P, S, R, Q, B or G contact material are RoHS compliant.

U11-U415 model numbers **cRLus** with all options when ordered with G, S, R, or Q contact material.

B contact material standard with all terminations except C, Z & Z3.

Q contact material standard with C, Z & Z3 terminations.

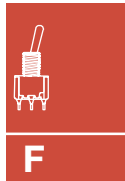
P, S & R contact materials not available with Z & Z3 terminations.



Third Angle
Projection

Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

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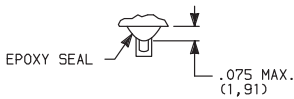


Toggle

7000 Series Miniature Toggle Switches

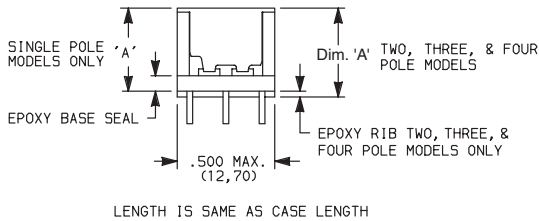
SEAL

E EPOXY SEAL



Compatible with "bottom-wash" PC board cleaning methods.

I EPOXY POTTED BASE



NO. POLES	DIM 'A'
SP	.410 (10,41)
DP	.440 (11,18)
3P	.505 (12,83)
4P	.505 (12,83)

Available with C, W-W5, Z & Z3 terminations only.

AVAILABLE HARDWARE

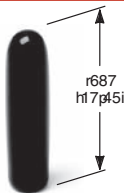
Cap



PART NO.
896801000 WHITE
896802000 BLACK
896803000 RED

Material: Polyethylene
 Finish: Matte

Cap



PART NO.
763701000 WHITE
763702000 BLACK
763703000 RED

Material: Vinyl
 Finish: Matte

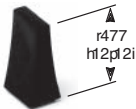
Cap



PART NO.
706201000 WHITE
706202000 BLACK
706203000 RED

Material: Vinyl
 Finish: Matte

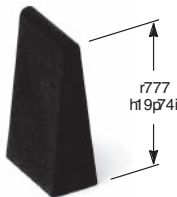
L41 Lever handle



PART NO.
481001000 WHITE
481002263 BLACK
481003000 RED

Material: Nylon
 Finish: Matte

L42 Lever handle



PART NO.
481101000 WHITE
481102263 BLACK
481103000 RED

Material: Nylon
 Finish: Matte

Fits Z3 Termination
female connector



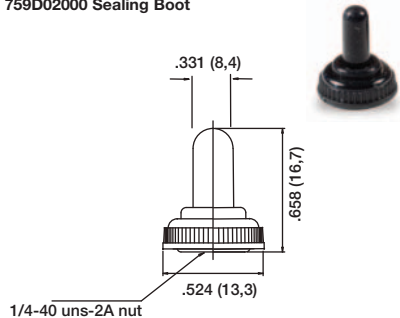
PART NO.
530100000

Available in loose pieces.

NOTE: Additional nuts, locking rings and lockwashers available separately, see Section N.

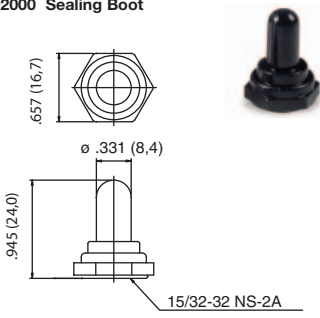
Other colors available, consult Customer Service Center.

759D02000 Sealing Boot



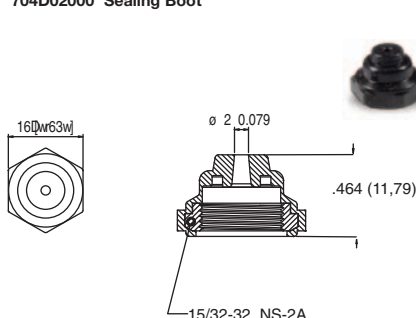
NOTE: For use with S actuator style when combined with D, H, H3, Y, and Y4 bushings

703D02000 Sealing Boot



NOTE: For use with T and TP style actuators. **Can not be used for Switch Functions: 7103, 7203, 7303, 7403, 7107, 7207, 7307, 7407.**

704D02000 Sealing Boot



NOTE: For use with T, TP and T2P style actuators. Can not be used for Switch Functions: 7103, 7203, 7303, 7403, 7107, 7207, 7307, and 7407.



Third Angle
Projection

Dimensions are shown: Inches (mm)
 Specifications and dimensions subject to change

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