

# 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  $\Omega$  typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10<sup>9</sup>  $\Omega$  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                                               |
|------------------------------|--------------------------------------------------------------|----------------------------------------|------------------------------------------------|--------------------------------------|----------------------------|---------------------------|----------------------------------|--------------------------------------------------------------|
| <b>7101</b> SP On-None-On    | <b>M</b> .200" high                                          | <b>D</b> .280 high, keyway             | <b>A</b> Right angle, PC thru-hole             | <b>B</b> Gold                        | <b>E</b> Epoxy             | <b>NONE</b> Bright chrome | <b>NONE</b> Natural aluminum     | <b>NONE</b> Nickel on all bushings (except D8, satin chrome) |
| <b>7103</b> SP On-Off-On     | <b>P3</b> Flatted, anti-rotation, .450" high                 | <b>H</b> .296 high, flat               | <b>AV2</b> Vert. right angle, PC thru-hole     | <b>P</b> Gold, matte-tin             | <b>I</b> Epoxy potted base | <b>2</b> Black            | <b>2</b> Black anodized aluminum | <b>2</b> Black                                               |
| <b>7105</b> SP Mom.-Off-Mom. | <b>S</b> .420" high                                          | <b>Y</b> .350 high, keyway             | <b>C</b> PC Thru-hole                          | <b>Q</b> Silver                      |                            | <b>3</b> Red              | <b>3</b> Red anodized aluminum   |                                                              |
| <b>7107</b> SP On-Off-Mom.   | <b>T</b> .687" high, 15/32 bushing                           | <b>NONE</b> No bushing choice required | <b>V3</b> .460 high, V-bracket                 | <b>S</b> Silver, matte-tin           |                            | <b>S</b> Satin chrome     | <b>7</b> Blue anodized aluminum  |                                                              |
| <b>7108</b> SP On-None-Mom.  | <b>K2</b> Locking lever, .704" high                          | <b>CW</b> Splashproof                  | <b>Z</b> Solder lug                            | <b>G</b> Gold over silver            |                            |                           |                                  |                                                              |
| <b>7109</b> SP None-On-Mom.  | <b>D8</b> .280" high, flat                                   | <b>D9</b> .280" high, keyway           | <b>A2</b> Right angle, PC thru-hole            | <b>R</b> Gold over silver, matte-tin |                            |                           |                                  |                                                              |
| <b>7201</b> DP On-None-On    | <b>K9</b> Locking lever, .704" high                          | <b>H3</b> .315" high, keyway           | <b>A3</b> Right angle, PC thru-hole            |                                      |                            |                           |                                  |                                                              |
| <b>7203</b> DP On-Off-On     | <b>K12</b> Locking lever, .732" high                         | <b>H4</b> 8mm high, keyway             | <b>A4</b> Right angle, PC thru-hole            |                                      |                            |                           |                                  |                                                              |
| <b>7205</b> DP Mom.-Off-Mom. | <b>K19</b> Locking lever, .732" high                         | <b>Y1</b> .378" high, keyway           | <b>AW1</b> Right angle, extended, PC thru-hole |                                      |                            |                           |                                  |                                                              |
| <b>7207</b> DP On-Off-Mom.   | <b>L</b> .840" high                                          | <b>Y3</b> 8.9mm high, keyway           | <b>AW4</b> Right angle, extended, PC thru-hole |                                      |                            |                           |                                  |                                                              |
| <b>7208</b> DP On-None-Mom.  | <b>L1</b> .640" high                                         | <b>Y4</b> .378" high, flat             | <b>V2</b> .555" high, V-bracket                |                                      |                            |                           |                                  |                                                              |
| <b>7211</b> DP On-On-On      | <b>L1P</b> Anti-rotation, .640" high                         | <b>Y9</b> .350" high, keyway           | <b>V4</b> .630" high, V-bracket                |                                      |                            |                           |                                  |                                                              |
| <b>7213</b> DP On-On-Mom.    | <b>L2</b> .550" high                                         |                                        | <b>V6</b> .460" high, V-bracket                |                                      |                            |                           |                                  |                                                              |
| <b>7215</b> DP Mom.-On-Mom.  | <b>L2P</b> Anti-rotation, .550" high                         |                                        | <b>V7</b> .630" high, V-bracket                |                                      |                            |                           |                                  |                                                              |
| <b>7301</b> 3P On-None-On    | <b>L3</b> Plastic .940" inch                                 |                                        | <b>V8</b> .953" high, V-bracket                |                                      |                            |                           |                                  |                                                              |
| <b>7303</b> 3P On-Off-On     | <b>L40</b> Lever handle without cap                          |                                        | <b>V9</b> 1.150" high, V-bracket               |                                      |                            |                           |                                  |                                                              |
| <b>7305</b> 3P Mom.-Off-Mom. | <b>L41</b> .531" high lever handle with cap                  |                                        | <b>V21</b> .555" high, snap-in V-bracket       |                                      |                            |                           |                                  |                                                              |
| <b>7308</b> 3P On-None-Mom.  | <b>L42</b> .838" high lever handle with cap                  |                                        | <b>V31</b> .460" high, snap-in V-bracket       |                                      |                            |                           |                                  |                                                              |
| <b>7401</b> 4P On-None-On    | <b>MP</b> Anti-rotation, .200" high                          |                                        | <b>V41</b> .630" high, snap-in V-bracket       |                                      |                            |                           |                                  |                                                              |
| <b>7403</b> 4P On-Off-On     | <b>P1</b> Flatted, anti-rotation, .840" high                 |                                        | <b>V71</b> .630" high, snap-in V-bracket       |                                      |                            |                           |                                  |                                                              |
| <b>7405</b> 4P Mom.-Off-Mom. | <b>P4</b> Flatted, anti-rotation, .250" high                 |                                        | <b>V81</b> .953" high, snap-in V-bracket       |                                      |                            |                           |                                  |                                                              |
| <b>7408</b> 4P On-None-Mom.  | <b>SP</b> Anti-rotation, .420" high                          |                                        |                                                |                                      |                            |                           |                                  |                                                              |
| <b>7411</b> 4P On-On-On      | <b>T1</b> .487" high, 15/32 bushing                          |                                        |                                                |                                      |                            |                           |                                  |                                                              |
| <b>7413</b> 4P On-On-Mom.    | <b>T1P</b> Anti-rotation, .487" high, 15/32 bushing          |                                        |                                                |                                      |                            |                           |                                  |                                                              |
| <b>7415</b> 4P Mom.-On-Mom.  | <b>T2P</b> Flatted, anti-rotation, .610" high, 15/32 bushing |                                        |                                                |                                      |                            |                           |                                  |                                                              |
|                              | <b>TP</b> 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



## F-4

# 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

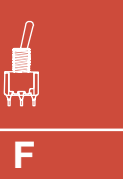
Wiring for 3-way switch, see Section N.

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



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

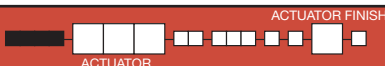
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Toggle

# 7000 Series Miniature Toggle Switches

## ACTUATOR



**S** .420" HIGH <sup>1</sup>

**SP** ANTIROTATION, .420" HIGH <sup>2,3</sup>



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

**M** .200" HIGH <sup>1</sup>

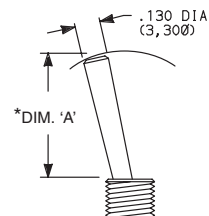
**MP** ANTIROTATION, .200" HIGH <sup>2,3</sup>



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 <sup>1</sup>

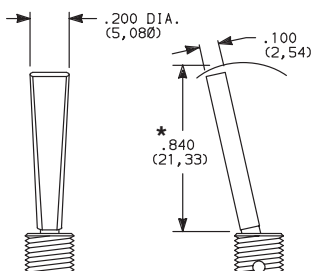
**L1P, L2P** ANTIROTATION, .840", .640", .550" HIGH <sup>2,3</sup>



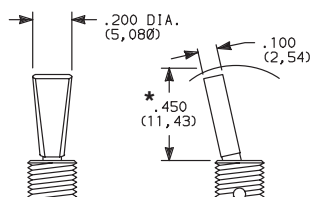
| OPTION CODE | DIM 'A'      |
|-------------|--------------|
| L           | .840 (21,34) |
| L1, L1P     | .640 (16,26) |
| L2, L2P     | .550 (13,97) |

Caps are available separately, see page F-16.

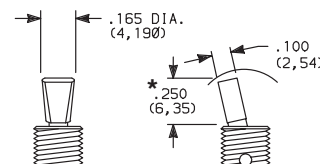
**\*P1** FLATTED WITH ANTIROTATION, .840" HIGH <sup>2,3</sup>



**\*P3** FLATTED WITH ANTIROTATION, .450" HIGH <sup>2,3</sup>



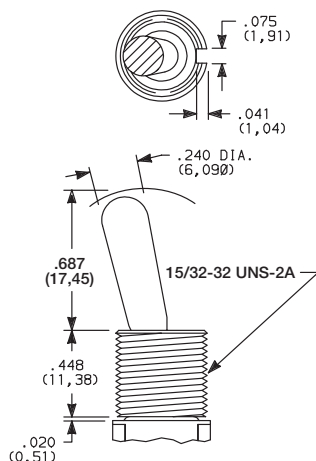
**\*P4** FLATTED WITH ANTIROTATION, .250" HIGH <sup>2,3</sup>



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

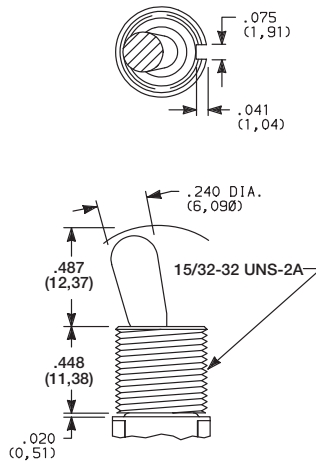
**T** .687 (17,45) HIGH <sup>1,2</sup>

**TP** ANTIROTATION, .687 (17,45) HIGH, 15/32 BUSHING <sup>1,2,3</sup>

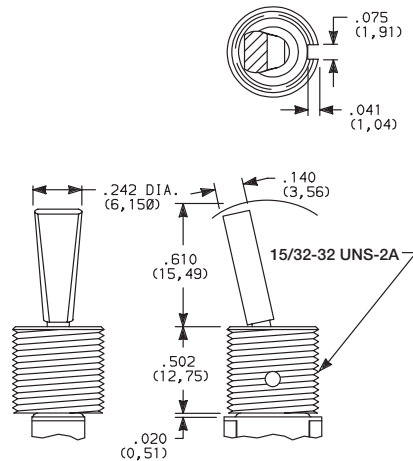


**T1** .487 (12,37) HIGH <sup>1,2</sup>

**T1P** ANTIROTATION, .487 (12,37) HIGH, 15/32 BUSHING <sup>1,2,3</sup>



**T2P** FLATTED, ANTIROTATION, .610" HIGH, 15/32 BUSHING <sup>1,2,3</sup>



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.

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                          |
|-------------|------------------------------------------|
| <b>NONE</b> | BRIGHT CHROME-With Nickel Plated Bushing |
| <b>2</b>    | BLACK                                    |
| <b>S</b>    | SATIN CHROME                             |

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



Third Angle Projection

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

**C&K**

# 7000 Series Miniature Toggle Switches

## ACTUATOR



- K2** LOCKING LEVER, .704" HIGH (threaded)  
**K9** LOCKING LEVER, .704" HIGH (unthreaded)

- K12** LOCKING LEVER, .732" HIGH (threaded)  
**K19** LOCKING LEVER, .732" HIGH (unthreaded)



Replaces K, K8



Replaces K1, K18

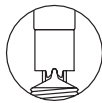
| OPTION CODE | ACTUATOR CAP FINISH                         |
|-------------|---------------------------------------------|
| <b>NONE</b> | NATURAL ALUMINUM—With Nickle Plated Bushing |
| <b>2</b>    | BLACK ANODIZED ALUMINUM                     |
| <b>3</b>    | RED ANODIZED ALUMINUM                       |
| <b>7</b>    | BLUE ANODIZED ALUMINUM                      |

\* All KXX models including KXXCW have a keyway

## Locking Positions



-01 Models  
2 Position lock



-03 & -11 Models  
3 Position lock



-05, -09 & -15 Models  
1 Position lock



-07 & -13 Models  
2 Position lock



-08 Models  
1 Position lock

**NOTE:** To prevent accidental actuation, toggle must be lifted before being actuated. When released, toggle will lock in place. Overtightening mounting nut may cause actuator to bind.

Locking levers supplied with bushing shown.

Bushing option code not required unless CW splashproof bushing ordered.

- L40** LEVER HANDLE WITHOUT CAP

- L41** PLASTIC LEVER HANDLE WITH ANTIROTATION AND CAP, P/N 4810

- L42** PLASTIC LEVER HANDLE WITH ANTIROTATION AND CAP, P/N 4811



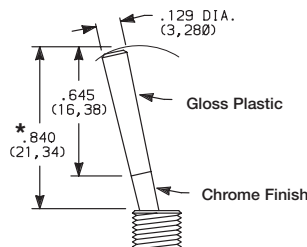
No color choice required



Finish: Matte (L41 & L42).



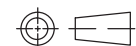
- L3** PLASTIC .940" HIGH



| OPTION CODE | PLASTIC ACTUATOR COLORS        |
|-------------|--------------------------------|
| <b>NONE</b> | No Actuator Color (L40 option) |
| <b>2</b>    | BLACK                          |
| <b>3</b>    | RED                            |

\* Add .070 (1,78) for D, D8 & D9 bushings, subtract .020 (0,51) for H3 bushing.

**NOTE:** Lever handle for L41 & L42 actuators supplied, but not installed. For interchangeability, order L40 actuator option and lever handles separately, see page F-16. L4X actuators not available with H4, Y1, Y4 bushings. Antirotation: Provides anti-'push-in' feature on actuator.



Third Angle  
Projection

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

**C&K**



**F**

Toggle

# 7000 Series Miniature Toggle Switches

## BUSHING



**Y** .350" HIGH, THREADED, KEYWAY

**Y9** .350" HIGH, UNTHREADED, KEYWAY

No bushing choice required with KXX, TXX actuators. (exception: Specify CW if splashproof bushing desired).

**NONE** NO BUSHING

**D** .280" HIGH, THREADED, KEYWAY

**D8** .280" HIGH, UNTHREADED, FLAT <sup>3</sup>

**D9** .280" HIGH, UNTHREADED, KEYWAY

**D8** **D, D9**

D9 bushing standard with all terminations except C, W-W5, Z or Z3. Add .070 (1,78) to all actuators lengths with D, D8 & D9 bushings.

**H** .296" HIGH, FLAT THREADED, HIGH TORQUE <sup>1,2</sup>

1/4-40 UNS-2A  
MF6. OPTION-RELIEF OR IMPERFECT THD.

**H3** .315" HIGH, KEYWAY THREADED, HIGH TORQUE <sup>1,2</sup>

1/4-40 UNS-2A  
MF6. OPTION-RELIEF OR IMPERFECT THD.

Subtract .020 (0,51) from all actuator lengths for H3 bushing.

Y bushing standard with C, W-W5, Z or Z3 terminations.

**H4** 8mm HIGH, KEYWAY, THREADED, METRIC HIGH TORQUE <sup>1,2,3</sup>

(M6P 0.75 THD.)  
MF6. OPTION-RELIEF OR IMPERFECT THD.

**Y1** .378" HIGH, KEYWAY, THREADED, HIGH TORQUE <sup>1,2,4</sup>

MF6. OPTION-RELIEF OR IMPERFECT THD.

**Y3** 8.9mm HIGH, KEYWAY, THREADED, METRIC

(M6P 0.75 THD.)

**Y4** .378" HIGH, FLAT, THREADED, HIGH TORQUE <sup>1,2,5</sup>

MF6. OPTION-RELIEF OR IMPERFECT THD.

**CW** THREADED, SPLASHPROOF <sup>1,2</sup>  
For T & T1 actuators.

For actuators other than T, T1 and KXX.



IP67 Degree of protection, totally protected against dust, full-scale voltage protection, temporary immersion. Internal actuator seal standard. External bushing seal available separately from APM Hexseal, part # MFS-60064.



IP67 Degree of protection, totally protected against dust, full-scale voltage protection, temporary immersion. Internal actuator seal and external bushing seal washer standard. IP65 degree of protection for LXP, MP, PX or SP with CW option.

| OPTION CODE | BUSHING FINISH                                   |
|-------------|--------------------------------------------------|
| <b>NONE</b> | NICKEL on all bushings except 'D8' satin chrome. |
| <b>2</b>    | BLACK                                            |

- Will withstand 12 in.-lbs. of torque with no distortion.
- CW, H, H3, H4, Y1 & Y4 bushings not available on single pole models with A4 terminations.
- D8 & H4 bushings available only with L, L1, L2, M & S actuators.
- Y1 bushing available only with LXP, MP, PX & SP actuators.
- Y4 bushing not available with L4X actuators.

**NOTE:** Two mounting nuts, locking ring and lockwasher supplied standard with threaded bushings. Black hardware is supplied when either black bushings or actuators are specified. Optional mounting nut and locking ring styles and finishes available, see Section N.

## PANEL MOUNTING

**1/4 INCH BUSHING**

Without locking ring. With standard locking ring. With small locking ring. Without locking ring. With locking ring.

**METRIC BUSHING**

Without locking ring. With standard locking ring.

**15/32 INCH BUSHING**

Without locking ring. With standard locking ring.



Third Angle  
Projection

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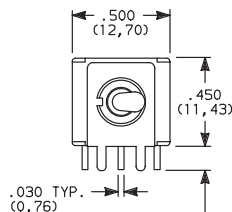
# 7000 Series Miniature Toggle Switches

## TERMINATIONS

**A** RIGHT ANGLE, PC THRU-HOLE

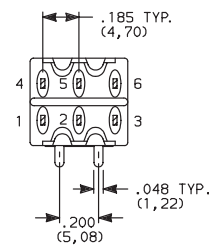
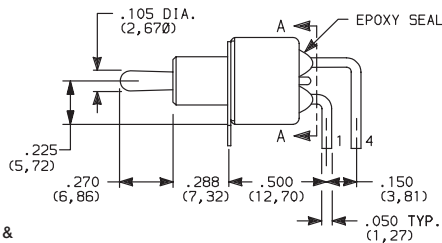


7201MD9ABE  
Horizontal Actuation  
DPDT



Actuator Shown  
In Pos. 1

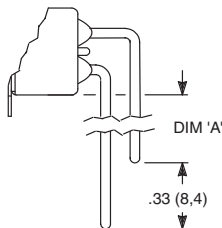
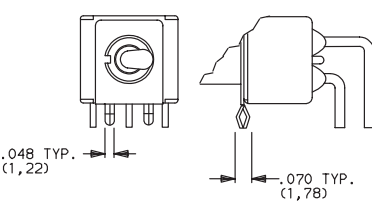
.125 TYP.  
(3,18)  
Terminals &  
Support



SECTION A-A

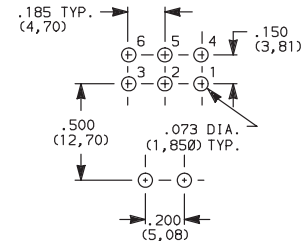
**A3** RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

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



| OPTION CODE | DIM 'A'    |
|-------------|------------|
| <b>AW1</b>  | .40 (10,2) |
| <b>AW4</b>  | .50 (12,7) |

PC MOUNTING

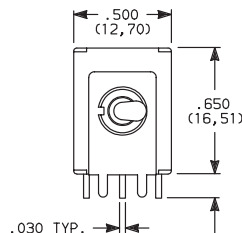


Not available with I seal option.  
Terminal bend radii and lead-in manufacturing option.

**A** RIGHT ANGLE, PC THRU-HOLE

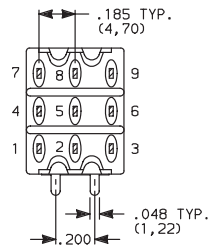
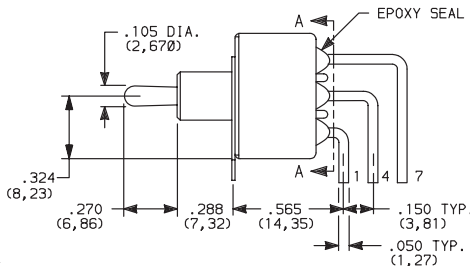


7301MD9ABE  
Horizontal Actuation  
3PDT



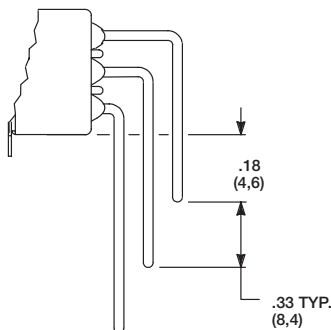
Actuator Shown  
In Pos. 1

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

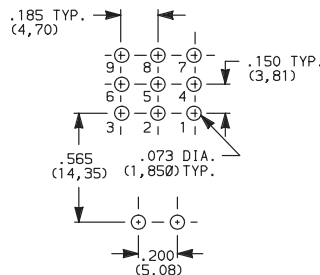


SECTION A-A

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



PC MOUNTING



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

## TERMINATIONS

Diagram illustrating the dimensions of the 2-pin connector:

- Overall width: .500 (12, 70)
- Overall height: .270 (6, 86)
- Pin diameter: .046 TYP. (1, 17)
- Pin spacing: .125 TYP. (3, 18)

**Terminals & Support**

Technical drawing showing two views of actuators with dimensions in inches and millimeters.

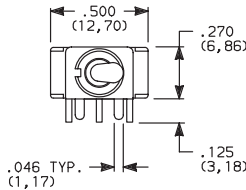
**Top View Dimensions:**

- Overall diameter: .105 DIA. (2, 670)
- Distance from left end to center: .270 (6, 86)
- Distance from center to right end: .288 (7, 32)
- Distance from right end to seal: .500 (12, 70)
- Seal thickness: .030 TYP. (0, 76)
- Seal material: EP0XY SEAL

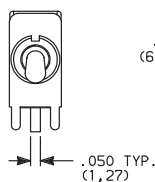
**Side View Dimensions:**

- Overall height: .197 (5, 00)
- Distance from left end to center: .200 (5, 08)
- Distance from center to right end: .324 (8, 23)
- Distance from right end to seal: .125 (3, 18)
- Seal thickness: .062 (1, 57)

support with CW, H, H3, H4, Y1, Y4 bushings and KXX actuators.



Technical drawing of a three-channel connector. The drawing shows a side view of the component with dimensions in inches and millimeters. Key dimensions include: .105 DIA. (2,670) for the top pin, .270 (6,86) for the pin diameter, .422 (10,72) for the pin length, .365 (9,27) for the pin thickness, .050 TYP. (1,27) for the channel width, .030 TYP. (0,76) for the channel depth, .288 (7,32) for the pin diameter, .500 (12,70) for the pin length, .150 TYP. (3,81) for the channel width, and .030 TYP. (0,76) for the channel depth. The drawing also shows a cross-section view with dimensions .125 (3,18) and .030 TYP. (0,76). Labels include "EPOXY SEAL" and "PC THRU-HOLE".



3/4 ANGLE, PC THRU-HOLE,

250  
(6,35)

.270  
(6,86)

.288  
(7,32)

.500  
(12,70)

.150 TYP.  
(3,81)

.030 TYP.  
(0,76)

.125  
(3,1)

A 1

A 1 2 3

EPOXY SEAL

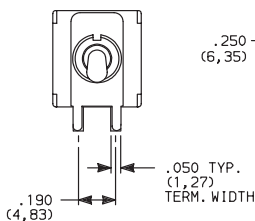
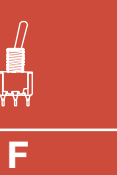


Figure 1 is a cross-sectional view of the assembly. It shows a central component with a conical tip on the left and a multi-layered structure on the right. Dimensions are given in inches and millimeters. Key dimensions include: a total height of .250 (6,35) on the left; a central width of .270 (6,86); a distance of .288 (7,32) from the center to the start of the multi-layered section; a total width of .500 (12,70) for the multi-layered section; a distance of .150 (3,81) from the end of the multi-layered section to the right edge; and a total width of .125 (3,18) for the rightmost section. A cross-section line A-A is shown. The multi-layered section is labeled "EPOXY SEAL". The rightmost section is labeled "4", "5", and "6". The total width of the assembly is .270 (6,86) + .288 (7,32) + .500 (12,70) + .150 (3,81) = 1.208 inches (30,68 mm). The total height is .250 (6,35) + .125 (3,18) = 0.375 inches (9,53 mm).



### Third Angle Projection

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

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# 7000 Series Miniature Toggle Switches

## TERMINATIONS

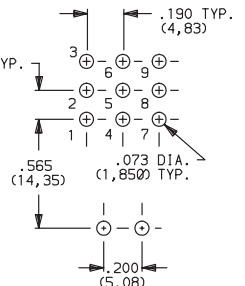
**AV2** VERTICAL RIGHT ANGLE, PC THRU-HOLE,  
.150" PITCH



7301MD9AV2BE  
Vertical Actuation  
**3PDT**



### PC MOUNTING



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

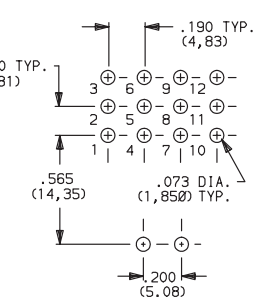
**AV2** VERTICAL RIGHT ANGLE, PC THRU-HOLE,  
.150" PITCH



7401MD9AV2BE  
Vertical Actuation  
**4PDT**



### PC MOUNTING



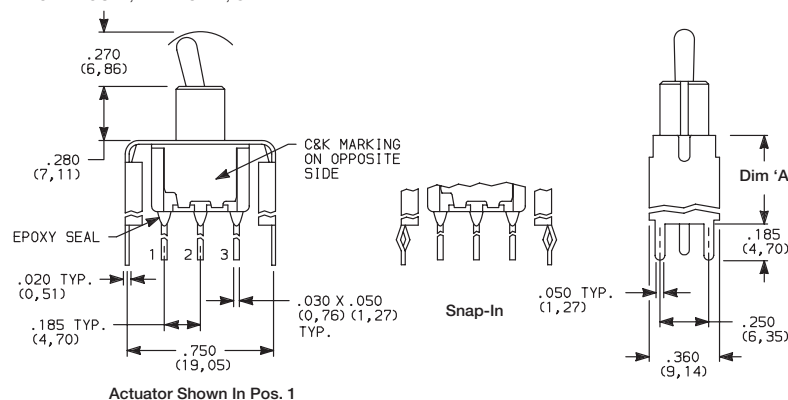
Not available with I seal option.  
Terminal bend radii and lead-in manufacturing option.

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

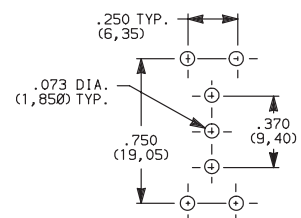
**V21, V71, V81** VERTICAL MOUNT, V-BRACKET, SNAP-IN



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

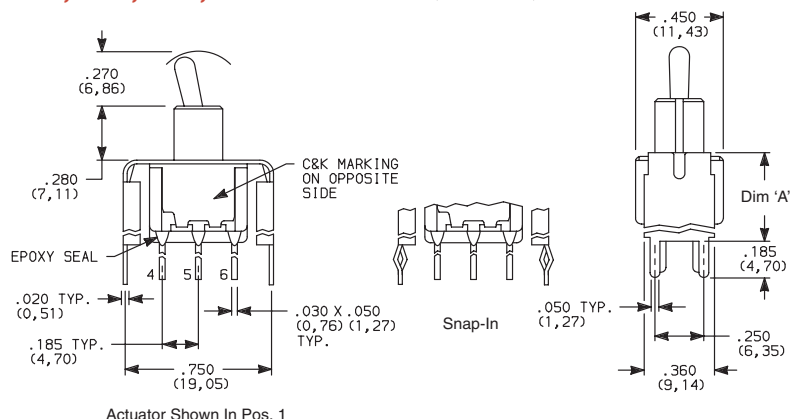
www.ck-components.com

## 7000 Series Miniature Toggle Switches

## TERMINATIONS

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

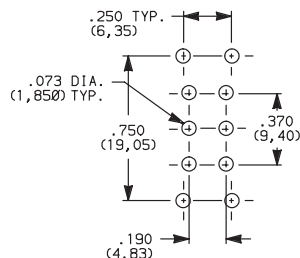
**V21, V61, V71, V81** VERTICAL MOUNT, V-BRACKET, SNAP-IN



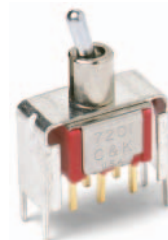
Actuator Shown In Pos. 1

Not available with I seal option.

## PC MOUNTING



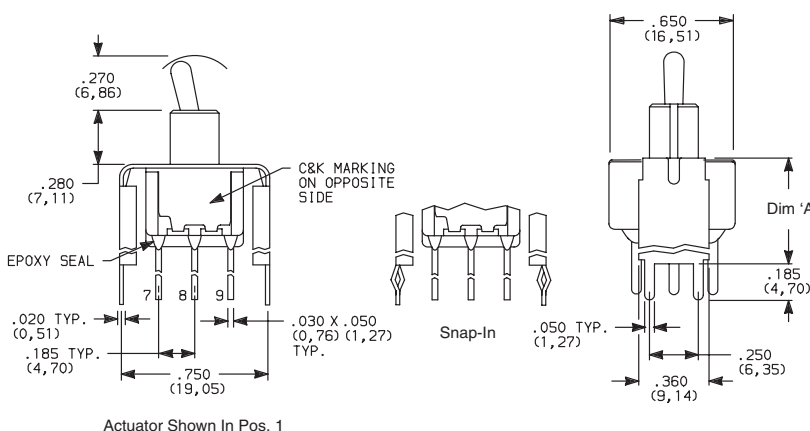
| OPTION CODE    | DIM 'A'      |
|----------------|--------------|
| <b>V2, V21</b> | .555 (14,10) |
| <b>V6, V61</b> | .460 (11,68) |
| <b>V7, V71</b> | .630 (16,00) |
| <b>V8, V81</b> | .953 (24,21) |



7201MD9\_\_BE  
DPDT

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

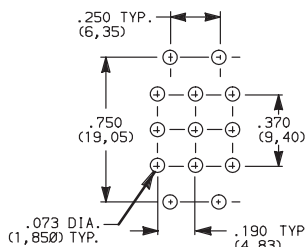
**V21, V71, V81** VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

## PC MOUNTING



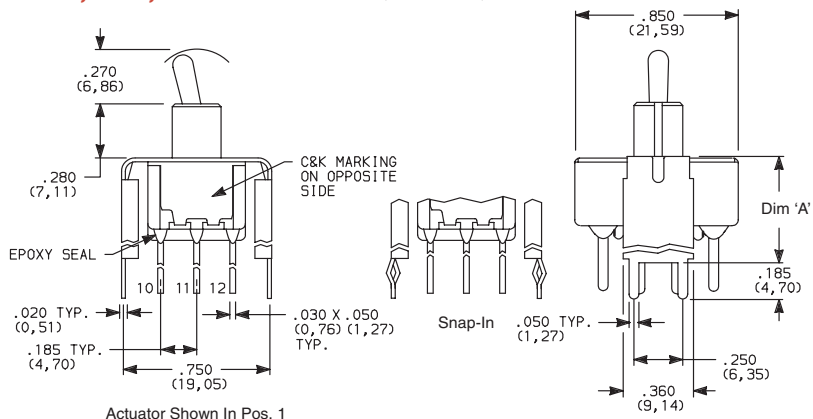
| OPTION CODE    | DIM 'A'      |
|----------------|--------------|
| <b>V2, V21</b> | .555 (14,10) |
| <b>V7, V71</b> | .630 (16,00) |
| <b>V8, V81</b> | .953 (24,21) |



7301MD9\_BE  
3PDT

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

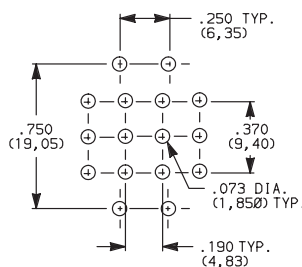
**V21, V71, V81** VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

Not available with I seal option.

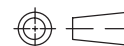
## PC MOUNTING



| OPTION<br>CODE | DIM 'A'      |
|----------------|--------------|
| <b>V2, V21</b> | .555 (14,10) |
| <b>V7, V71</b> | .630 (16,00) |
| <b>V8, V81</b> | .953 (24,21) |



7401MD9\_BE  
4PDT



### Third Angle Projection

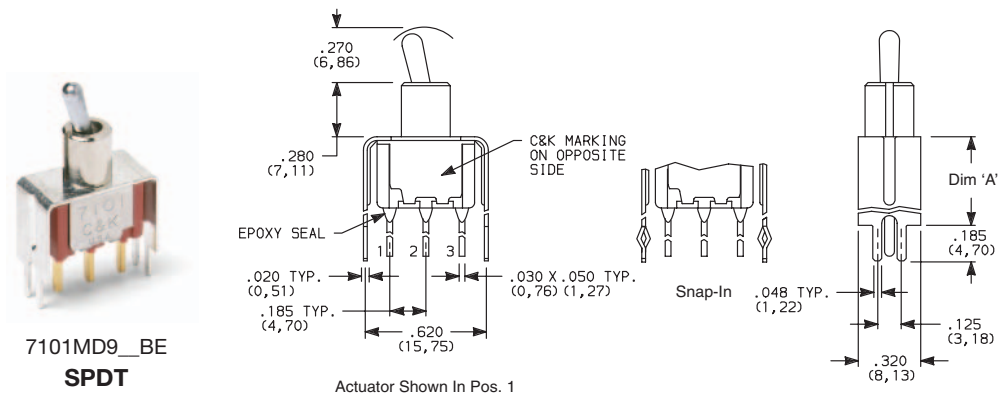
Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change

# 7000 Series Miniature Toggle Switches

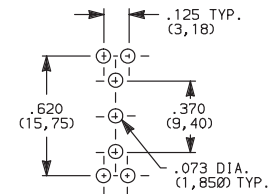
## TERMINATIONS

**V3, V4, V9** VERTICAL MOUNT, V-BRACKET

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



### PC MOUNTING



| OPTION CODE    | DIM 'A'       |
|----------------|---------------|
| <b>V3, V31</b> | .460 (11,68)  |
| <b>V4, V41</b> | .630 (16,00)  |
| <b>V9</b>      | 1.150 (29,21) |

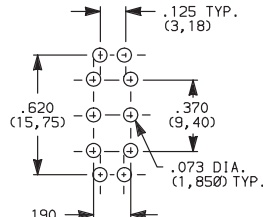
Not available with I seal option.

**V3, V4, V9** VERTICAL MOUNT, V-BRACKET

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



### PC MOUNTING

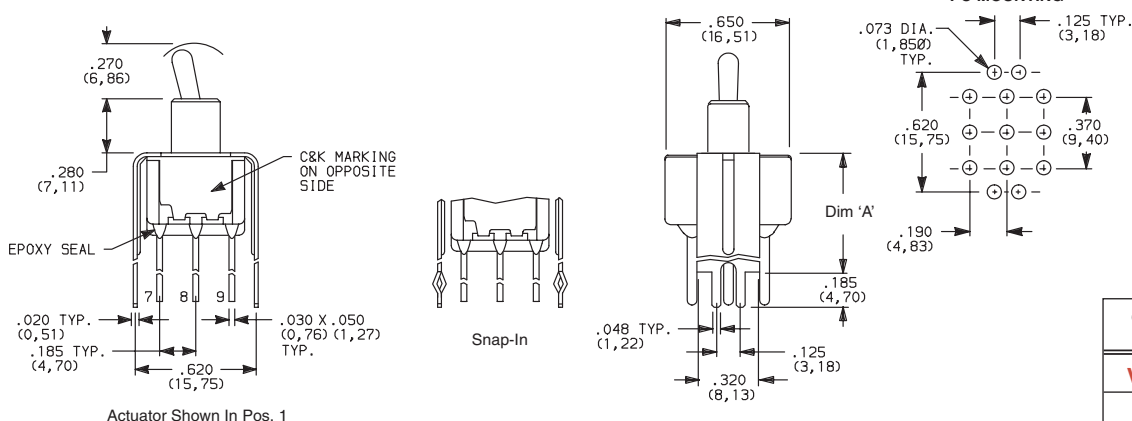


| OPTION CODE    | DIM 'A'       |
|----------------|---------------|
| <b>V3, V31</b> | .460 (11,68)  |
| <b>V4, V41</b> | .630 (16,00)  |
| <b>V9</b>      | 1.150 (29,21) |

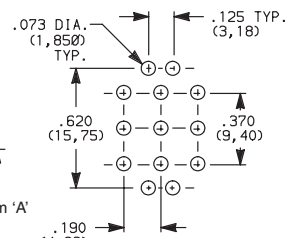
Not available with I seal option.

**V4, V9** VERTICAL MOUNT, V-BRACKET

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



### PC MOUNTING



| OPTION CODE    | DIM 'A'       |
|----------------|---------------|
| <b>V4, V41</b> | .630 (16,00)  |
| <b>V9</b>      | 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

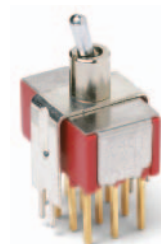
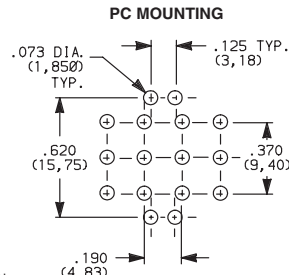
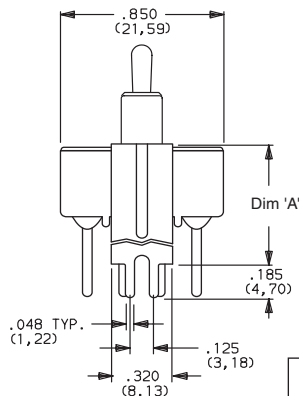


Actuator Shown In Pos. 1

Not available with I seal option.



Snap-In



7401MD9\_BE  
4PDT

| OPTION CODE    | DIM 'A'       |
|----------------|---------------|
| <b>V4, V41</b> | .630 (16,00)  |
| <b>V9</b>      | 1.150 (29,21) |

## CONTACT MATERIAL

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

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

<sup>1</sup> CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

<sup>2</sup> END CONTACTS: Coin silver, with gold plate over nickel plate.

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

<sup>4</sup> END CONTACTS: Coin silver, silver plated.

<sup>5</sup> CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.

<sup>6</sup> 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

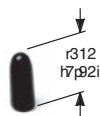
Cap



**PART NO.**  
**763701000** WHITE  
**763702000** BLACK  
**763703000** RED

Material: Vinyl  
 Finish: Matte

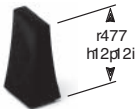
Cap



**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.

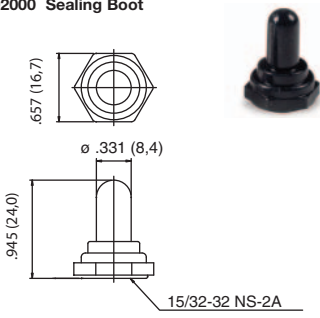
Other colors available, consult Customer Service Center.

759D02000 Sealing Boot



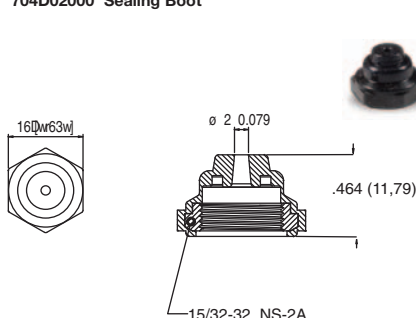
**NOTE:** For use with S actuator style when combined with D, H, H3, Y, and Y4 bushings

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

[www.ck-components.com](http://www.ck-components.com)

