



**2M1-Series**  
Miniature Toggle Switch

**2MS-Series**  
**Sealed Nylon**  
Miniature Toggle Switch

**2M2-Series**  
**Nylon** Miniature Toggle Switch

**Specifications**

Contact Rating . . . . . refer to ordering scheme  
 Electrical Life . . . . . 50,000 make & break cycles @ full load  
 Contact Resistance. . . . . 10 mΩ max. initial @ 2-4 VDC  
 100mA for both silver & gold plated contacts.  
 Insulation Resistance . . . . . 1000 MΩ min.  
 Dielectric Strength . . . . . 1500 Volts RMS @ sea level  
 Operating Temperature . . . -30°C to +85°C  
 Index of Protection . . . . . **2MS-Series:** IP67  
 Solder Heat Resistance. . . MIL-STD-202, Method 210  
 Actuator Travel . . . . . 25°

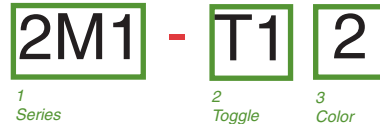
**Materials**

Case . . . . . **2M1-Series:** Diallyl phthalate (DAP) (UL 94V-0)  
**2MS & 2M2-Series:** Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)  
 Toggle. . . . . **2M1-Series:** Brass, chrome plated.  
**2MS & 2M2-Series:** Brass, chrome plated, internal o-ring sealed  
 Bushing . . . . . **2M1-Series:** Brass, nickel plated  
**2MS & 2M2-Series:** Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)  
 Housing. . . . . Stainless Steel  
 Switch Support . . . . . Brass, tin plated  
 Terminal Seal . . . . . Epoxy

**2M1-Series Accessories**

To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word "assembled".  
 Ex: 2M1-SP1-T1-B1-M1QE-T12ASSEMBLED  
 To order accessories in bulk, specify the Series, followed by the accessory. Ex.) 2M1-T12.

**Optional Toggle Cap**

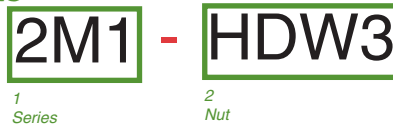


<b>1 SERIES OR SWITCH CATALOG NUMBER</b> 2M1, 2MS or 2M2	
<b>2 TOGGLE CAP SIZE</b>	
T1     10.6mm	T2     7.6mm

<b>3 CAP COLOR<sup>1</sup></b>					
1	white	3	red	6	green
2	black	5	yellow	7	blue

NOTE  
 1 Black, white & red are standard. Additional colors available. Consult factory.

**Optional Dress and Knurled Nuts**



<b>1 SERIES OR SWITCH CATALOG NUMBER</b> 2M1, 2MS or 2M2
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<b>2 NUT</b>
<b>HDW3</b> dress nut for 1/4" bushing
<b>HDW5</b> knurled nut for 15/32" bushing (2M1-Series only)

**Optional Rubber Hood**



<b>1 SERIES OR SWITCH CATALOG NUMBER</b> 2M1, 2MS or 2M2
---

<b>2 RUBBER HOOD</b>
<b>E1A</b> rubber hood sealing (for all bushings except B0).

**2M1-Series Ordering Scheme**

**1 SERIES**
**2M1** Miniature Toggle Switch

**2 POLES**

**SP** single pole - uses terminals 1, 2 & 3.  
**DP** double pole uses terminals 1,2, 3, 4, 5 & 6.  
**3P** three pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9.  
**4P** four pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 & 11.

**3 CIRCUIT**

( ) - momentary

	<b>Switching Position:</b>		
	2-3, 5-6, 8-9, 11-12	OPEN NONE OFF ON	2-1, 5-4, 8-7, 11-10 ON (ON) (ON) ON
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>	(ON)		(ON)
<b>5</b>	ON	OFF	(ON)
<b>6</b>	ON	ON	ON

**NOTE:**

1 ON-ON-ON available with DP and 4P switches only.

**4 ACTUATOR**

<b>T1</b> round bat	<b>T8</b> extra-large bat (with B0 bushing)
<b>T2</b> round short bat	<b>T9</b> black plastic
<b>T3</b> paddle	<b>T0</b> rectangular
<b>T4</b> medium paddle	<b>TA</b> locking lever
<b>T5</b> long paddle	<b>TI</b> locking lever
<b>T6</b> flat (with B1, B2 or B5 bushing)	<b>TL</b> locking lever
<b>T7</b> large bat (with B0 bushing)	

**5 BUSHING**

<b>B1</b>	Threaded Standard, keyway
<b>B2</b>	Non-Threaded Standard, keyway
<b>B3</b>	Threaded Short, keyway
<b>B4</b>	Non-Threaded Short, keyway
<b>B5</b>	High Torque, 7.5mm, flat
<b>B6</b>	High Torque, 8.0mm, keyway
<b>B7</b>	Long threaded
<b>B8</b>	Metric
<b>B9</b>	Splashproof
<b>B0</b>	15/32" Threaded (Standard for T7 and T8 actuator styles)

**6 TERMINATION**

<b>M1</b>	Solder Lug
<b>M2</b>	PCB
<b>M3</b>	Quick Connect
<b>M5-1</b>	Wire Wrap .750 [19.05]
<b>M5-2</b>	Wire Wrap [24.48]
<b>M5-3</b>	Wire Wrap [10.80]
<b>M5-4</b>	Wire Wrap [26.97]
<b>M6</b>	PC Mount, 90° horizontal
<b>M7</b>	PC Mount, 90° vertical
<b>VS2</b>	PC Mount, U bracket, .620 mounting x .460 high
<b>VS3</b>	PC Mount, U bracket, .620 mounting x .630 high
<b>VS4</b>	PC Mount, U bracket, .750 mounting x .460 high
<b>VS5</b>	PC Mount, U bracket, .750 mounting x .630 high
<b>VS21</b>	Snap-In, U bracket

**7 CONTACT**

	Material	Terminal Plating	Rating	Approvals
<b>G</b>	silver <sup>1</sup>	gold over silver <sup>2</sup>	5A @ 125VAC or 28VDC, 2A @ 250VAC	UL CSA
<b>K</b>	gold <sup>2</sup>	tin-lead <sup>4</sup>	0.4VA max. @20V max (AC/DC)	-
<b>P</b>	silver <sup>1</sup>	tin-lead <sup>4</sup>	5A @ 125VAC or 28VDC, 2A @ 250VAC	UL CSA
<b>Q</b>	silver <sup>1</sup>	silver <sup>1</sup>	5A @ 125VAC or 28VDC, 2A @ 250VAC	UL CSA
<b>R</b>	gold <sup>2</sup>	gold <sup>2</sup>	0.4VA max. @20V max (AC/DC)	-

**NOTE:**

Tin-lead option available with PC type terminations only.

- 1 Moveable contact & terminals: copper alloy, silver plate
- 2 Moveable contact & terminals: copper alloy with gold plate over nickel plate
- 3 Terminals: silver plate with outer layer in gold plating
- 4 Outer terminals: copper alloy with tin-lead over nickel plate

**8 EPOXY SEAL**
**E** epoxy seal

**NOTES:**

All switches come with standard nut, washer and locking ring shipped bulk.  
 T7 and T8 actuator styles come with a larger nut, washer and locking ring, to accommodate the switch.  
 Additional nut styles available. See page 26.  
 Custom colors available, consult factory.  
 Rubber seal available. Order part number E1A separately.

## 2MS & 2M2-Series Ordering Scheme



**1 SERIES**  
**2MS** Sealed Nylon Miniature Toggle Switch  
**2M2** Nylon Miniature Toggle Switch

**2 POLES**  
**WSP** single pole - uses terminals 1, 2 & 3.  
**WDP** double pole uses terminals 1, 2, 3, 4, 5 & 6.  
**W3P** three pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9.

**3 CIRCUIT**  
 ( ) - momentary

	Switching Position:		
	2-3, 5-6, 8-9	OPEN	2-1, 5-4, 8-7
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

**4 ACTUATOR STYLE**  
**T1** round bat  
**T2** round short bat  
**T9** long black plastic

**5 BUSHING**  
**B1** Threaded Standard, keyway for ST, PC termination  
**B4** Non-Threaded Short, keyway for H9, V9 termination

**6 TERMINATION**

<b>M1</b>	Solder Lug
<b>M2</b>	PCB
<b>M3</b>	Quick Connect
<b>M6</b>	PC Mount, 90° horizontal
<b>M7</b>	PC Mount, 90° vertical
<b>VS2</b>	PC Mount, U bracket, .620 mounting x .460 high
<b>VS3</b>	PC Mount, U bracket, .620 mounting x .630 high
<b>VS4</b>	PC Mount, U bracket, .750 mounting x .460 high
<b>VS5</b>	PC Mount, U bracket, .750 mounting x .630 high
<b>VS21</b>	Snap-In, U bracket
<b>VS41</b>	Snap-In, U bracket

**7 CONTACT**

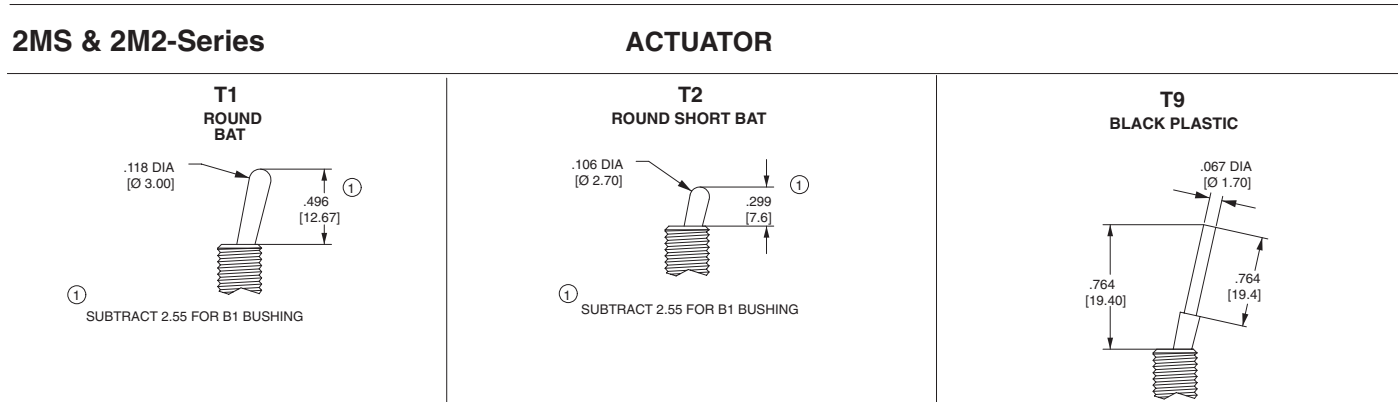
	Material	Terminal Plating	Rating	2MS-Series Approvals
<b>G</b>	silver <sup>1</sup>	gold over silver <sup>3</sup>	5A @ 125VAC or 28VDC, 2A @ 250VAC	UL CUL IP67
<b>K</b>	gold <sup>2</sup>	tin-lead <sup>4</sup>	0.4VA max. @20V max (AC/DC)	-
<b>P</b>	silver <sup>1</sup>	tin-lead <sup>4</sup>	5A @ 125VAC or 28VDC, 2A @ 250VAC	UL CUL IP67
<b>R</b>	gold <sup>2</sup>	gold <sup>2</sup>	0.4VA max. @20V max (AC/DC)	-

1 Moveable contact & terminals: copper alloy, silver plated  
 2 Moveable contact & terminals: copper alloy with gold plate over nickel plated  
 3 Terminals: silver plated with outer layer in gold plating  
 4 Outer terminals: copper alloy with tin-lead over nickel plated

**8 EPOXY SEAL**  
**E** epoxy seal

NOTE:  
 All switches come with standard nut, washer and locking ring. T7 and T8 actuator styles come with a larger nut, washer and locking ring, to accommodate the switch.

## 2M-Series Dimensional Specifications: in. [mm]



**2M-Series Dimensional Specifications: in. [mm]**

**2M1-Series**

**ACTUATOR**

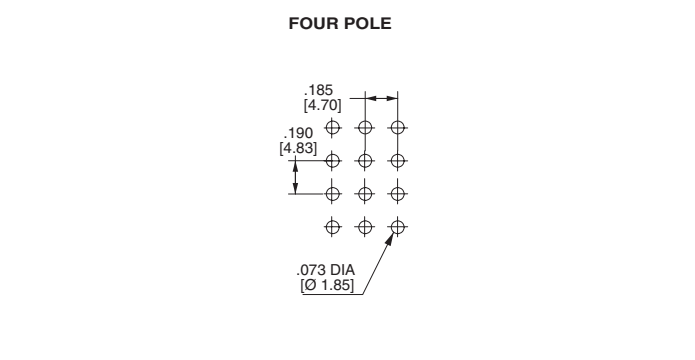
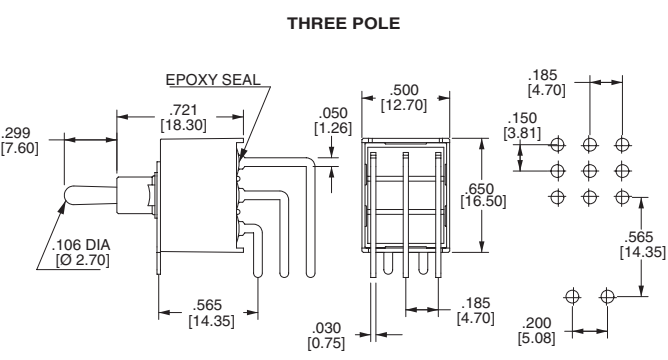
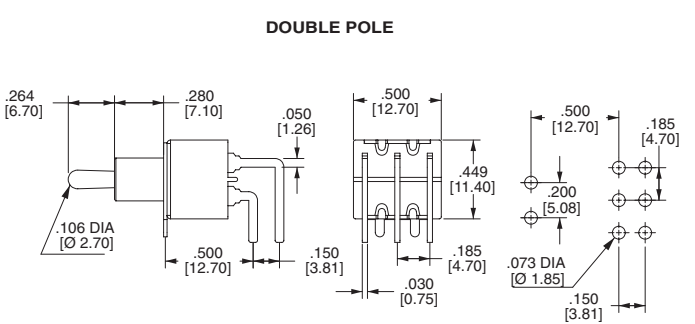
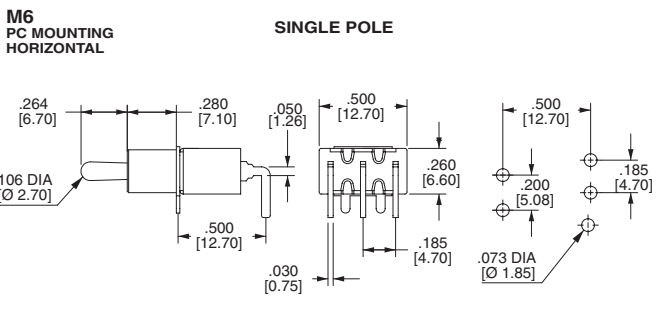
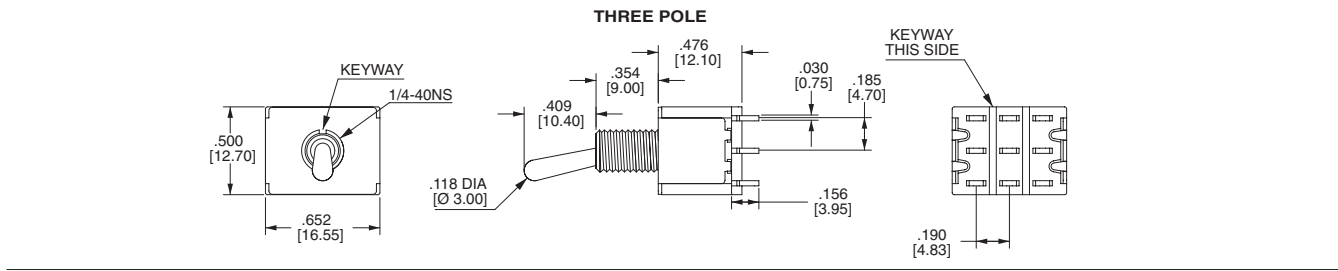
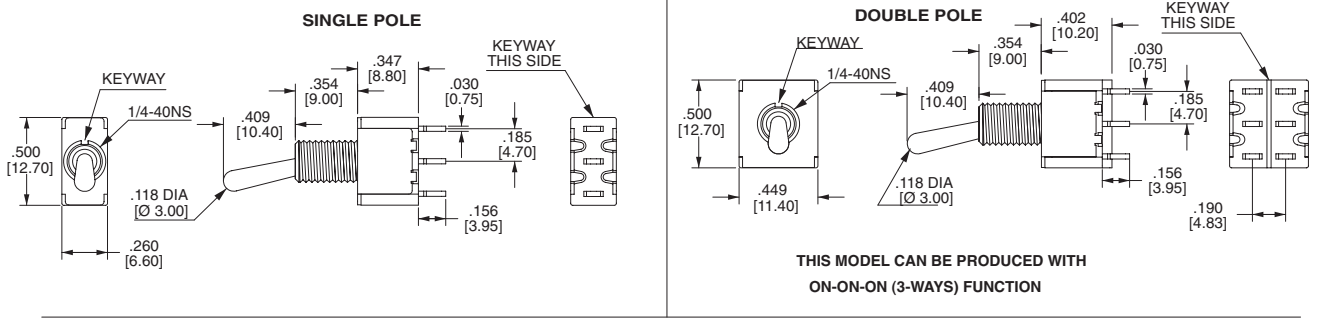
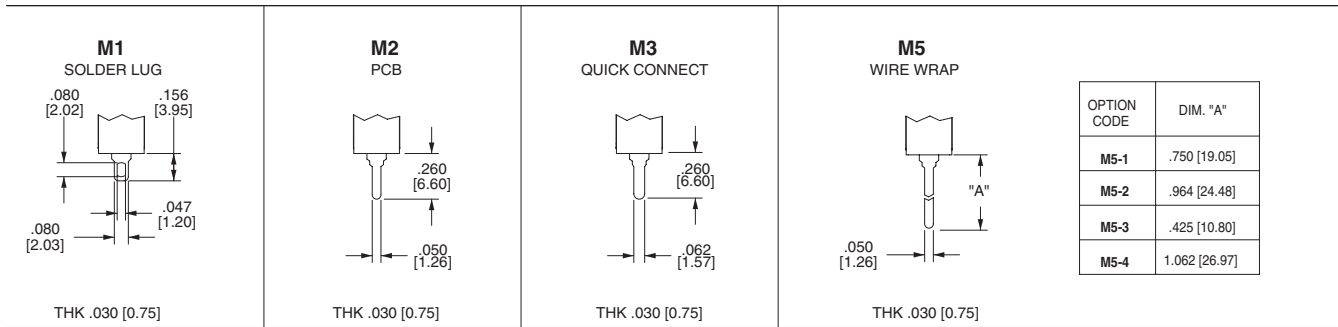
<p><b>T1</b> ROUND BAT</p> <p>DIMENSION = .461 [11.70] WITH NON THREADED BUSHING B4</p>	<p><b>T2</b> ROUND SHORT BAT</p> <p>DIMENSION = .264 [6.70] WITH NON THREADED BUSHING B4</p>	<p><b>T3</b> PADDLE</p> <p>DIMENSION = .134 [3.40] WITH NON THREADED BUSHING B4</p>	<p><b>T4</b> MEDIUM PADDLE</p> <p>DIMENSION = .105 [7.90] WITH NON THREADED BUSHING B4</p>	<p><b>T5</b> LONG PADDLE</p> <p>DIMENSION = .105 [7.90] WITH NON THREADED BUSHING B4</p>	
<p><b>T6</b> FLAT</p> <p>WITH BUSHING OPTIONS B1, B2, B5 ONLY</p>	<p><b>T7</b> LARGE BAT</p> <p>FOR T7, T8, ACTUATOR, BUSHING OPTION CODE IS NOT REQUIRED. ALL OTHER ACTUATOR LENGTHS SHOWN WITH BUSHING B1.</p>	<p><b>T8</b> EXTRA LARGE BAT</p> <p>FOR T7, T8, ACTUATOR, BUSHING OPTION CODE IS NOT REQUIRED. ALL OTHER ACTUATOR LENGTHS SHOWN WITH BUSHING B1.</p>	<p><b>T9</b> BLACK PLASTIC</p>	<p><b>T0</b> RECTANGULAR</p>	
<p><b>TA</b> LOCKING LEVER CURVED WITH TAPERED STEM</p> <p>CIRCUIT 1 FOR SP-1, DP-1 3P-1, 4P-1 ONLY</p> <p>CIRCUIT 3 FOR SP-3, DP-3 3P-3, 4P-3 ONLY</p>		<p><b>TI</b> LOCKING LEVER CURVED WITH STRAIGHT STEM</p> <p>CIRCUIT 1 FOR SP-1, DP-1 3P-1, 4P-1 ONLY</p> <p>CIRCUIT 3 FOR SP-3, DP-3 3P-3, 4P-3 ONLY</p>		<p><b>TL</b> LOCKING LEVER ROUNDED WITH TAPERED STEM</p> <p>FOR SP-1, DP-1 3P-1, 4P-1 ONLY</p> <p>FOR SP-3, DP-3 3P-3, 4P-3 ONLY</p>	

**BUSHING**

<p><b>B1</b> STANDARD KEYWAY THREADED SHOWN</p> <p><b>B2</b> STANDARD KEYWAY NON-THREADED</p>	<p><b>B3</b> SHORT KEYWAY THREADED SHOWN</p> <p><b>B4</b> SHORT KEYWAY NON-THREADED</p>	<p><b>B5</b> 7.5mm FLAT HIGH TORQUE</p>	<p><b>B6</b> 8.0mm FLAT HIGH TORQUE</p>	
<p><b>B7</b> LONG THREADED</p>	<p><b>B8</b> METRIC</p>	<p><b>K1</b> METRIC BOOT</p>	<p><b>B9</b> SPLASH-PROOF</p>	<p><b>B0</b> 15/32" THREADED BUSHING</p> <p>FOR T7, T8, ACTUATOR, BUSHING OPTION CODE IS NOT REQUIRED. ALL OTHER ACTUATOR LENGTHS SHOWN WITH BUSHING B1.</p>

## 2M-Series Dimensional Specifications: in. [mm]

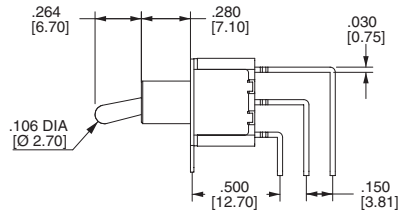
### TERMINATION



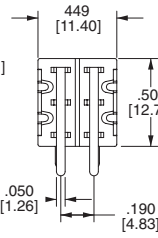
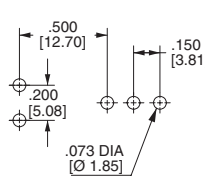
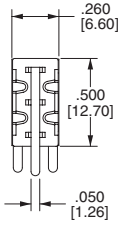
## 2M-Series Dimensional Specifications: in. [mm]

### TERMINATION

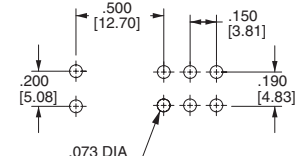
#### M7 SINGLE POLE & DOUBLE POLE PC MOUNT VERTICAL



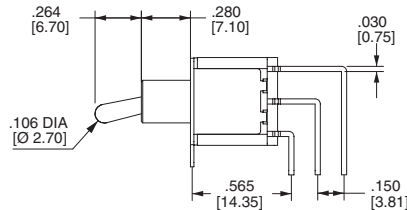
#### SINGLE POLE



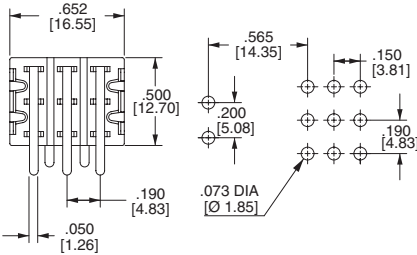
#### DOUBLE POLE



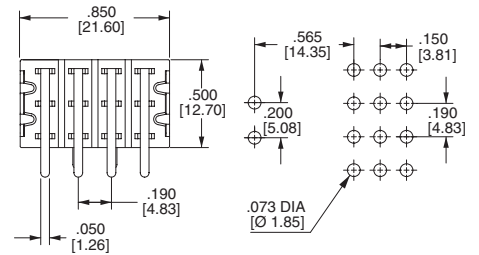
#### PC MOUNT VERTICAL



#### THREE POLE

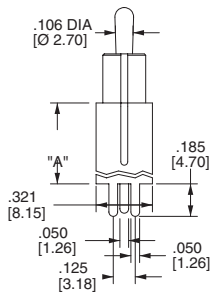


#### FOUR POLE

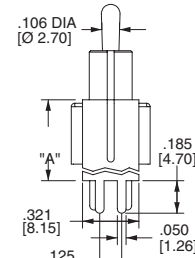
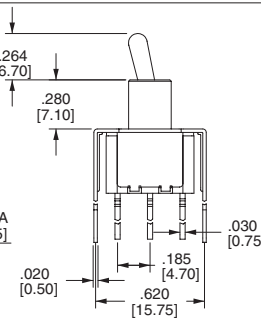
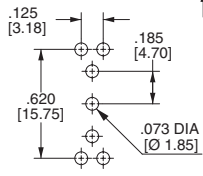


#### VS2 & VS3 "U" BRACKET PC MOUNT

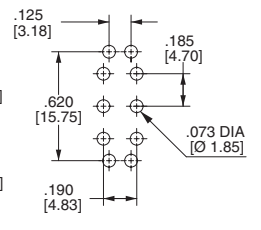
OPTION CODE	DIM. "A"
VS2	.460 [11.68]
VS3	.630 [16.00]



#### SINGLE POLE

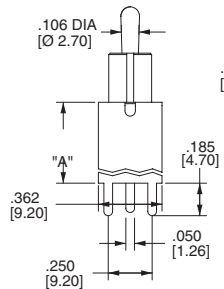


#### DOUBLE POLE

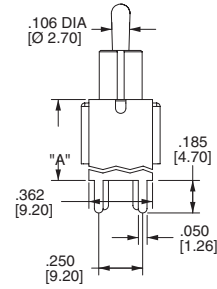
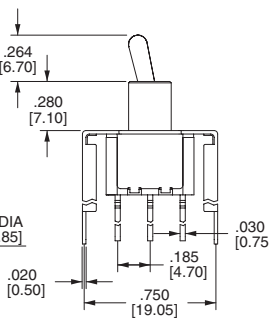
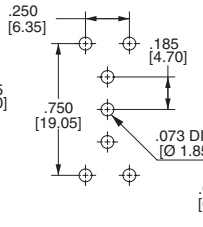


#### VS4 & VS5 "U" BRACKET PC MOUNT

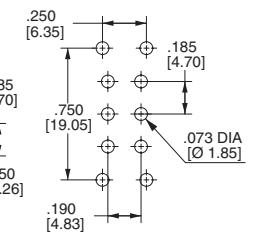
OPTION CODE	DIM. "A"
VS4	.460 [11.68]
VS5	.630 [16.00]



#### SINGLE POLE

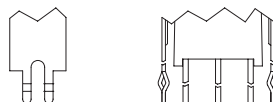


#### DOUBLE POLE



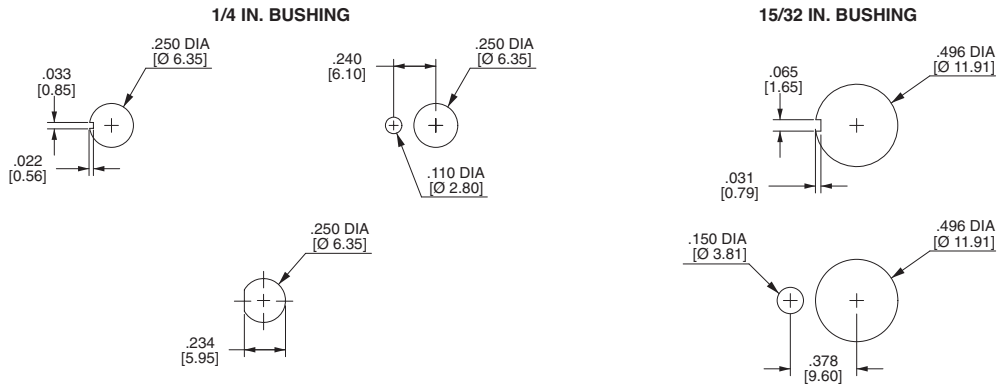
### SNAP-IN TERMINATION OPTIONS

#### VS21 SNAP-IN, WITH BRACKET (Same Mounting Pattern as VS2)

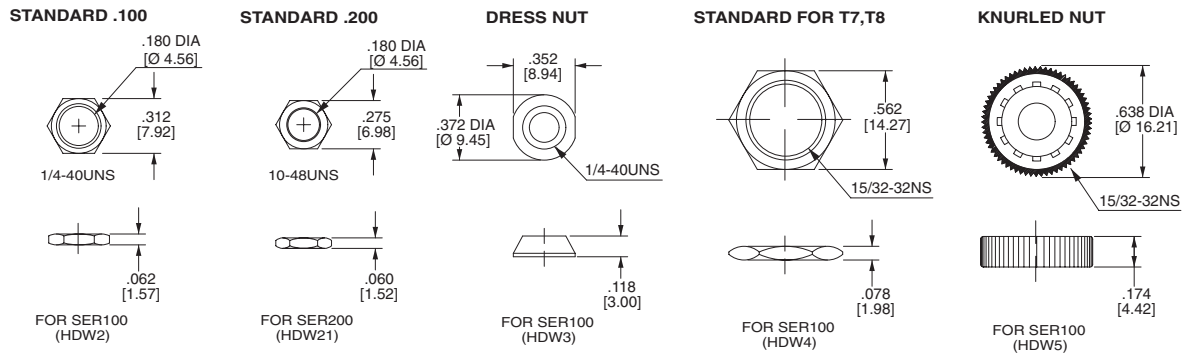


**2M-Series Dimensional Specifications: in. [mm]**

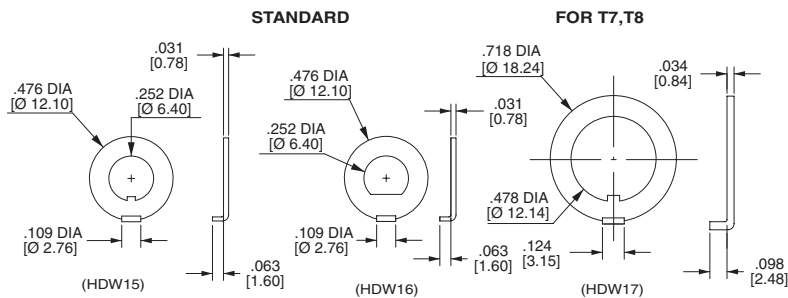
**PANEL MOUNTING**



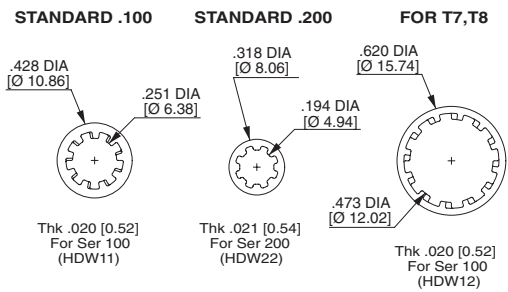
**NUT**



**LOCKING RING**

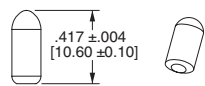


**LOCK WASHER**



**TOGGLE CAPS**

**T1**



**T2**

