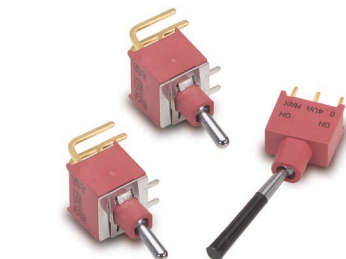
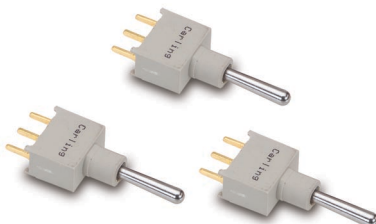


**2M1-Series**  
Miniature Toggle  
Switch



**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

**2M1** - **T1** **2**

1  
Series

2  
Toggle  
Cap Size

3  
Color

**1 SERIES OR SWITCH CATALOG NUMBER**  
2M1, 2MS or 2M2

**2 TOGGLE CAP SIZE**

**T1** 10.6mm **T2** 7.6mm

**3 CAP COLOR¹**

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

NOTE

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

### Optional Dress and Knurled Nuts

**2M1** - **HDW3**

1  
Series

2  
Nut

**1 SERIES OR SWITCH CATALOG NUMBER**  
2M1, 2MS or 2M2

**2 NUT**

**HDW3** dress nut for 1/4" bushing  
**HDW5** knurled nut for 15/32" bushing (2M1-Series only)

### Optional Rubber Hood

**2M1** - **E1A**

1  
Series

2  
Rubber Hood

**1 SERIES OR SWITCH CATALOG NUMBER**  
2M1, 2MS or 2M2

**2 RUBBER HOOD**

**E1A** 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	2-1, 5-4, 8-7, 11-10
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)
6 <sup>1</sup>	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<sup>2</sup></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 &amp; terminals: copper alloy, silver plate

2 Moveable contact &amp; 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

	<b>Switching Position:</b>		
	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**

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

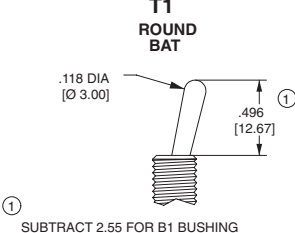
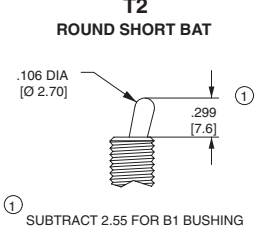
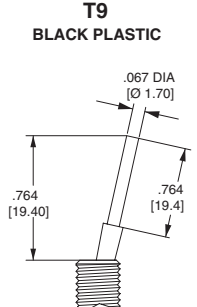
**8 EPOXY SEAL**

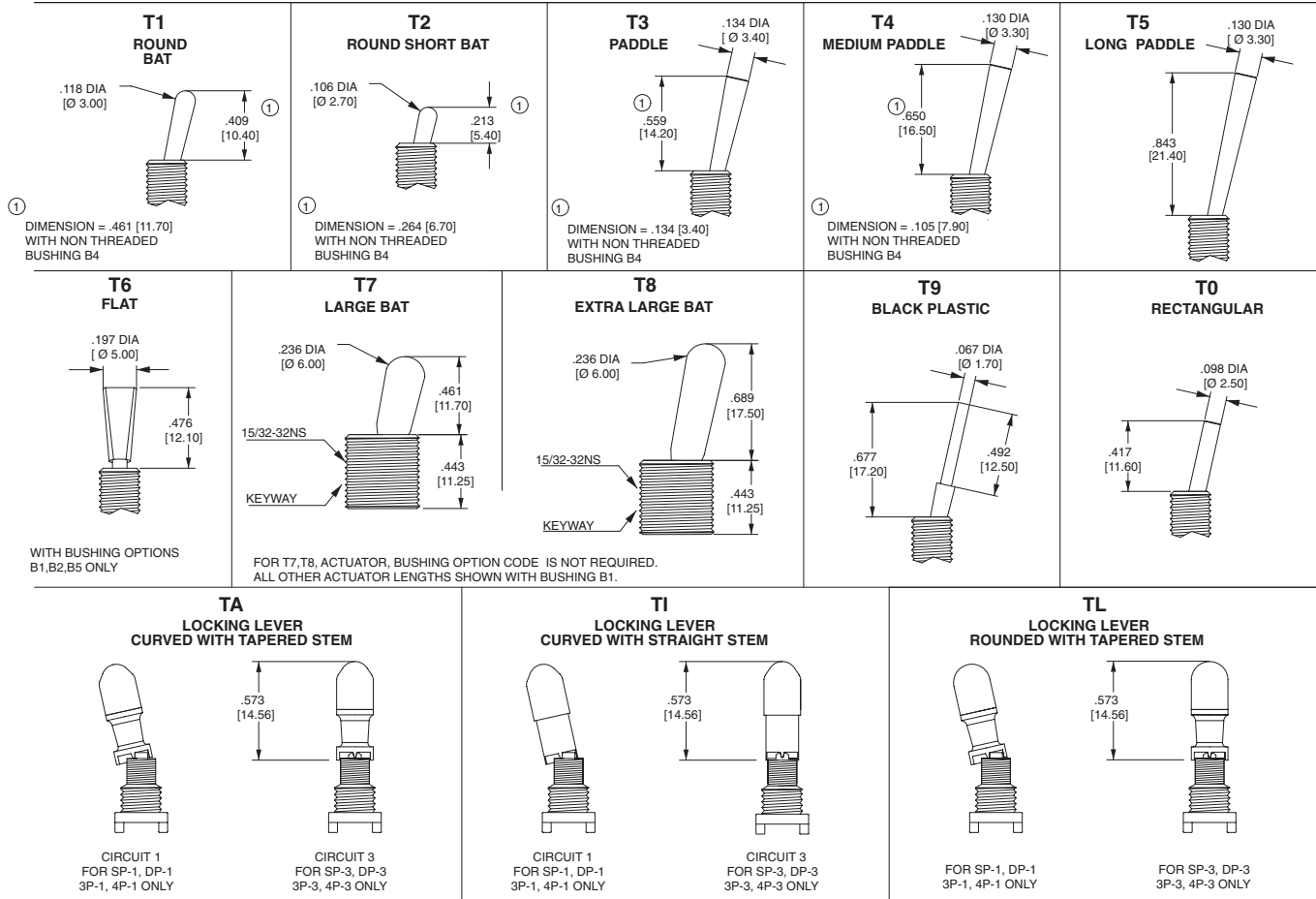
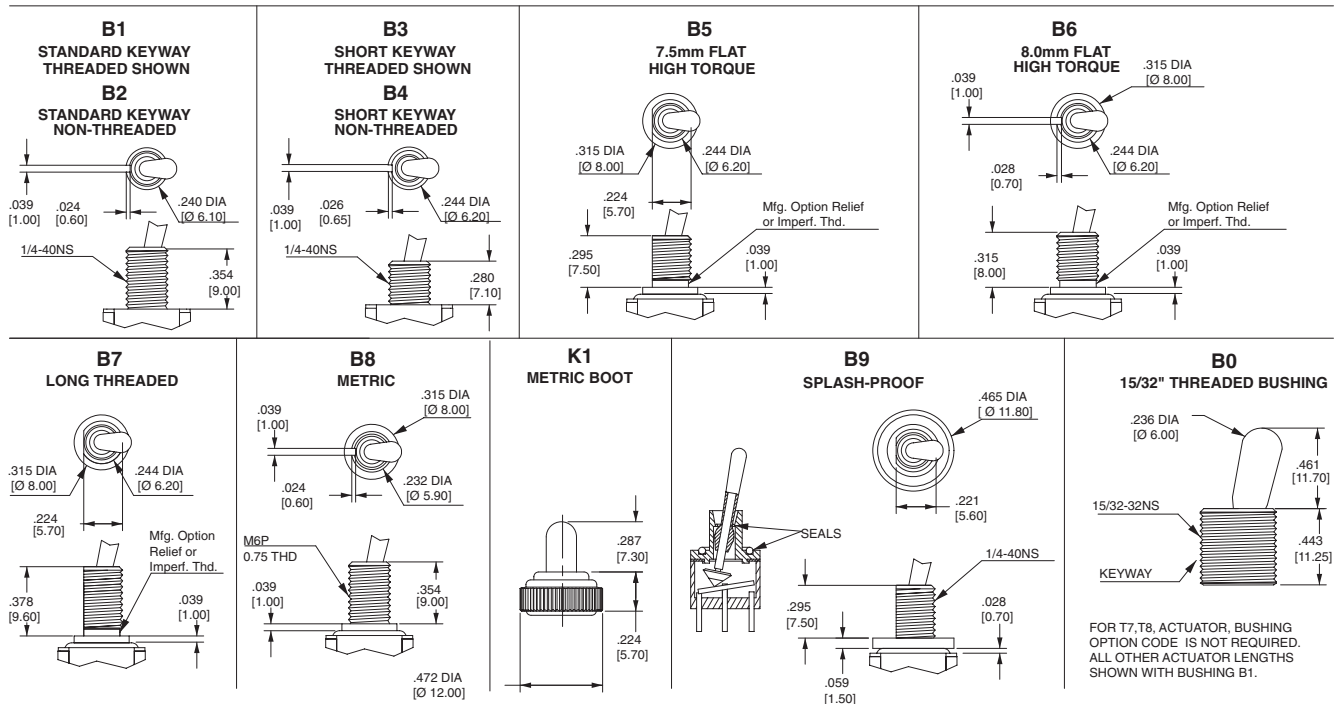
**E** epoxy seal

**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.

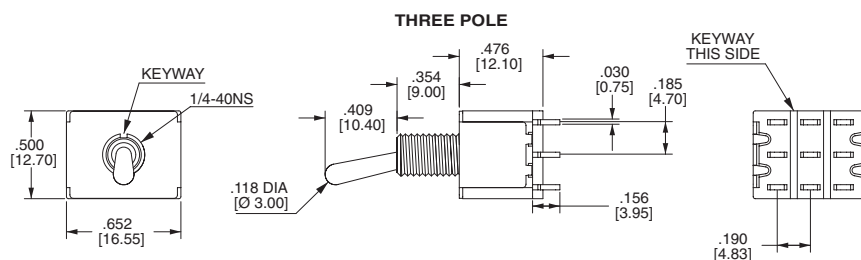
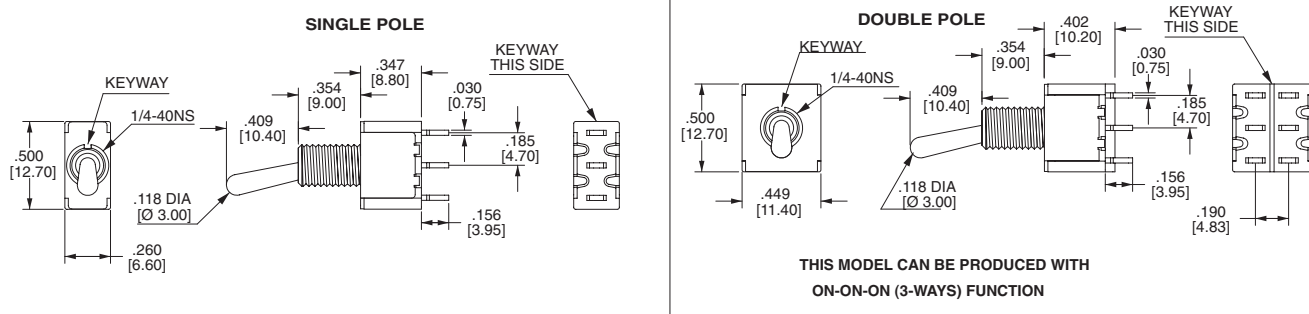
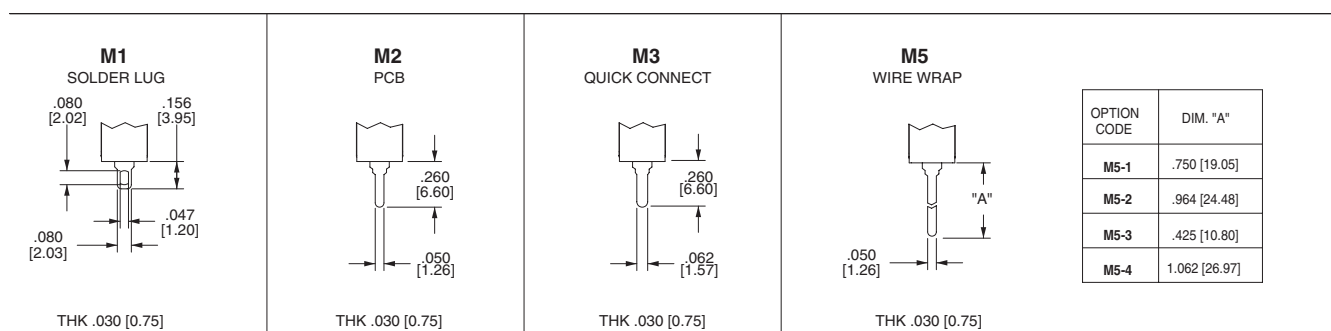
**2M-Series Dimensional Specifications: in. [mm]**
**2MS & 2M2-Series**
**ACTUATOR**

T1 ROUND BAT	T2 ROUND SHORT BAT	T9 BLACK PLASTIC
 <p>① SUBTRACT 2.55 FOR B1 BUSHING</p>	 <p>① SUBTRACT 2.55 FOR B1 BUSHING</p>	

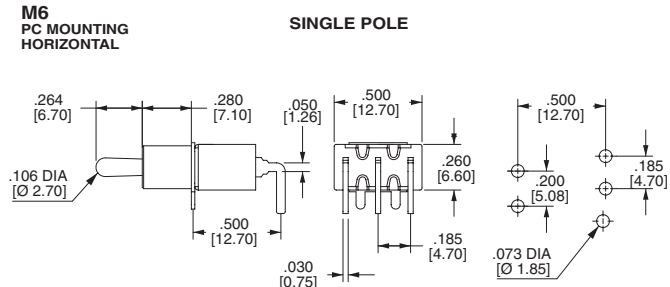
**2M-Series Dimensional Specifications: in. [mm]**
**2M1-Series**
**ACTUATOR**

**BUSHING**


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

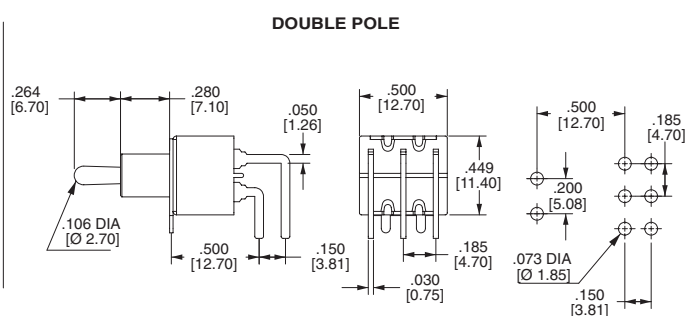
## TERMINATION



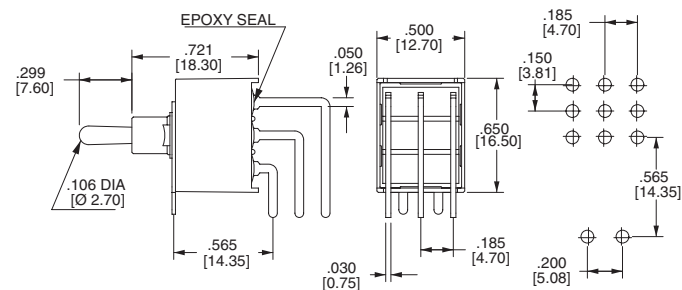
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**PC MOUNTING**  
**HORIZONTAL**



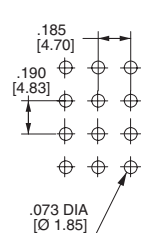
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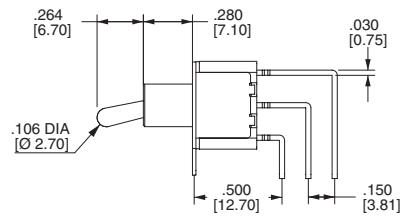
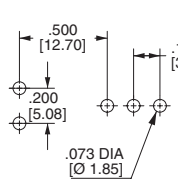
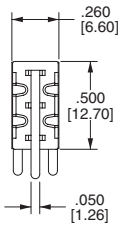
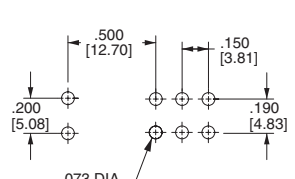
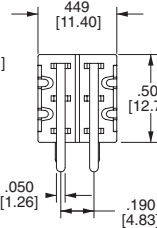
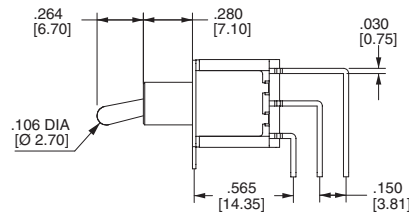
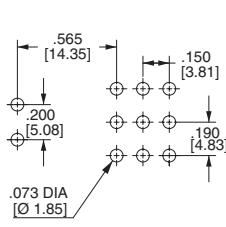
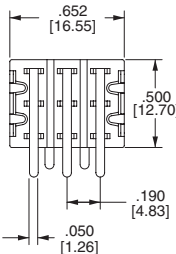
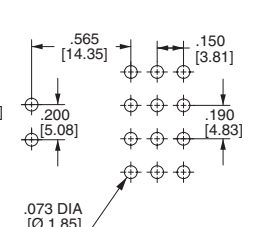
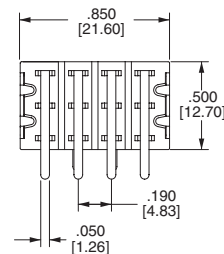


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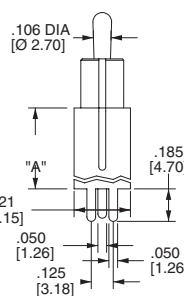
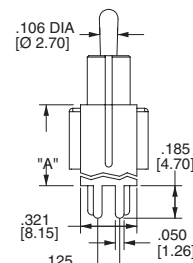
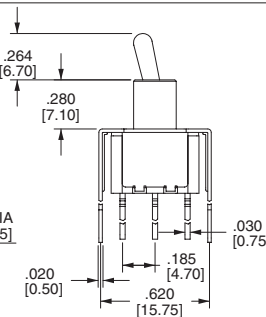
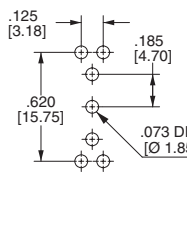
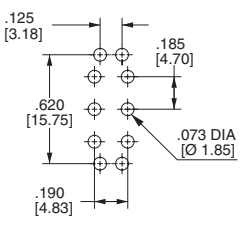


**FOUR POLE**

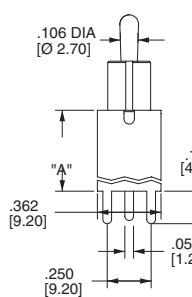
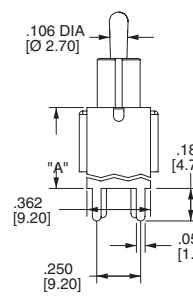
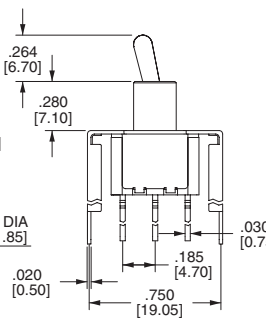
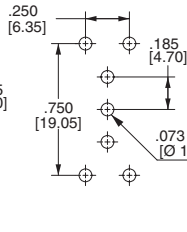
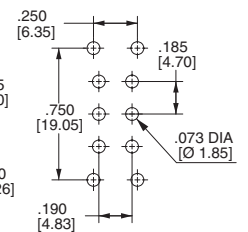


**2M-Series Dimensional Specifications: in. [mm]**
**TERMINATION**
**M7  
SINGLE POLE & DOUBLE POLE  
PC MOUNT VERTICAL**

**SINGLE POLE**

**DOUBLE POLE**

**PC MOUNT VERTICAL**

**THREE POLE**

**FOUR POLE**

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

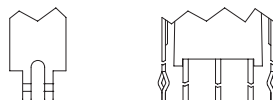
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VS3	.630 [16.00]

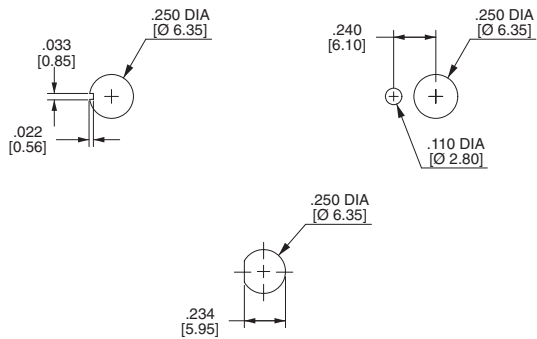
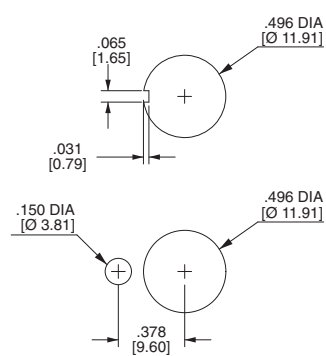
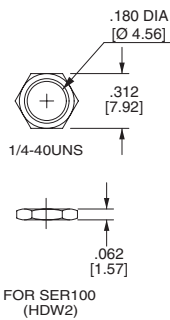
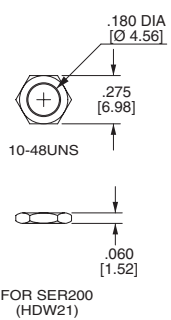
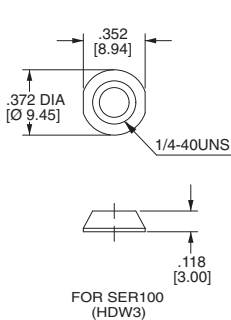
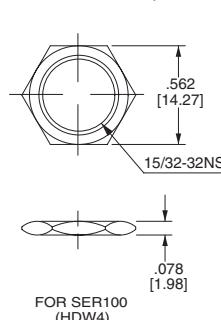
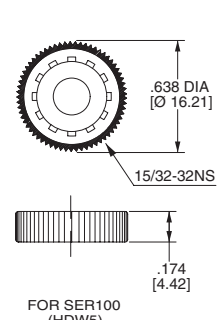
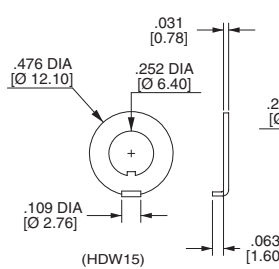
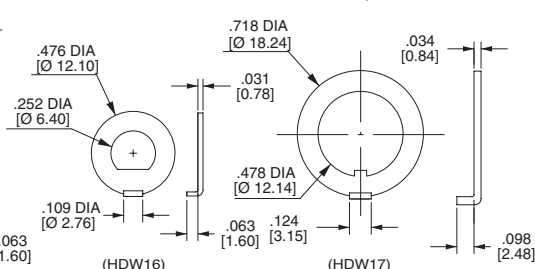
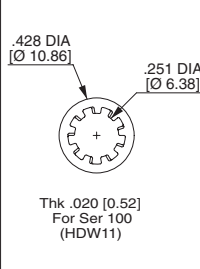
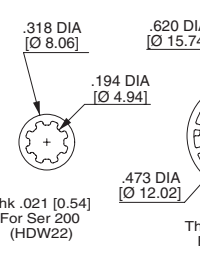
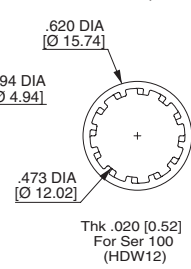
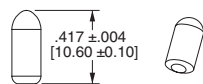
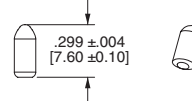

**SINGLE POLE**

**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**
**1/4 IN. BUSHING**

**15/32 IN. BUSHING**

**NUT**
**STANDARD .100**

**STANDARD .200**

**DRESS NUT**

**STANDARD FOR T7,T8**

**KNURLED NUT**

**LOCKING RING**
**STANDARD**

**FOR T7,T8**

**LOCK WASHER**
**STANDARD .100**

**STANDARD .200**

**FOR T7,T8**

**TOGGLE CAPS**
**T1**

**T2**


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Authorized Distributor

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## Carling Technologies:

[2M1-SP5-T1-B1-M1QE](#) [2M1-SP1-T1-B1-M2QE](#) [2M1SP3T2B1-M1QE](#) [2M1-SP1-T1-B4-VS5QE](#) [2M1-3P1-T1-B1-M1QE](#) [2M1-4P1-T1-B1-M1QE](#) [2M1-DP1-T1-B1-M1QE](#) [2M1-DP1-T1-B1-M2QE](#) [2M1-DP1-T6-B1-M1QE](#) [2M1-DP3-T1-B1-M1QE](#) [2M1-DP3-T1-B1-M2QE](#) [2M1-HDW3](#) [2M1-SP1-T1-B1-M1QE](#) [2M1-SP1-T2-B4-M6RE](#) [2M1-SP1-T6-B1-M1QE](#) [2M1-SP1-T8-B0-M1QE](#) [2M1-SP3-T1-B1-M1QE](#) [2M1-SP3-T1-B1-M2QE](#) [2M1-SP3-T6-B1-M1QE](#) [2M1-SP4-T1-B1-M1QE](#) [2M1-SP1-T4-B1-M1GE](#)