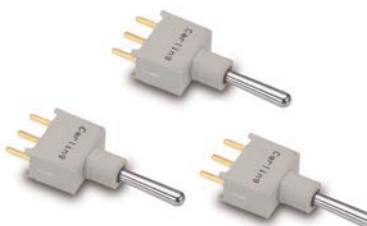


2M1-Series
Miniature Toggle Switch



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

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

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

Switching Position:

	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 ¹	ON	ON	ON

NOTE:

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

4 ACTUATOR

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

5 BUSHING

B1	Threaded Standard, keyway
B2	Non-Threaded Standard, keyway
B3	Threaded Short, keyway
B4	Non-Threaded Short, keyway
B5	High Torque, 7.5mm, flat
B6	High Torque, 8.0mm, keyway
B7	Long threaded
B8²	Metric
B9	Splashproof
B0	15/32" Threaded (Standard for T7 and T8 actuator styles)

6 TERMINATION

M1	Solder Lug
M2	PCB
M3	Quick Connect
M5-1	Wire Wrap .750 [19.05]
M5-2	Wire Wrap [24.48]
M5-3	Wire Wrap [10.80]
M5-4	Wire Wrap [26.97]
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

7 CONTACT

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

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	
G	silver ¹	gold over silver ³	5A @ 125VAC or 28VDC, 2A @ 250VAC	UL CUL	IP67
K	gold ²	tin-lead ⁴	0.4VA max. @20V max (AC/DC)	—	—
P	silver ¹	tin-lead ⁴	5A @ 125VAC or 28VDC, 2A @ 250VAC	UL CUL	IP67
R	gold ²	gold ²	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

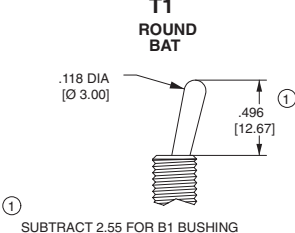
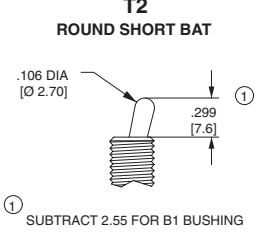
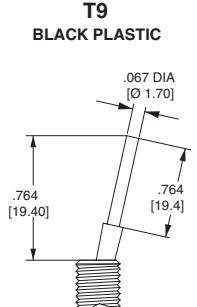
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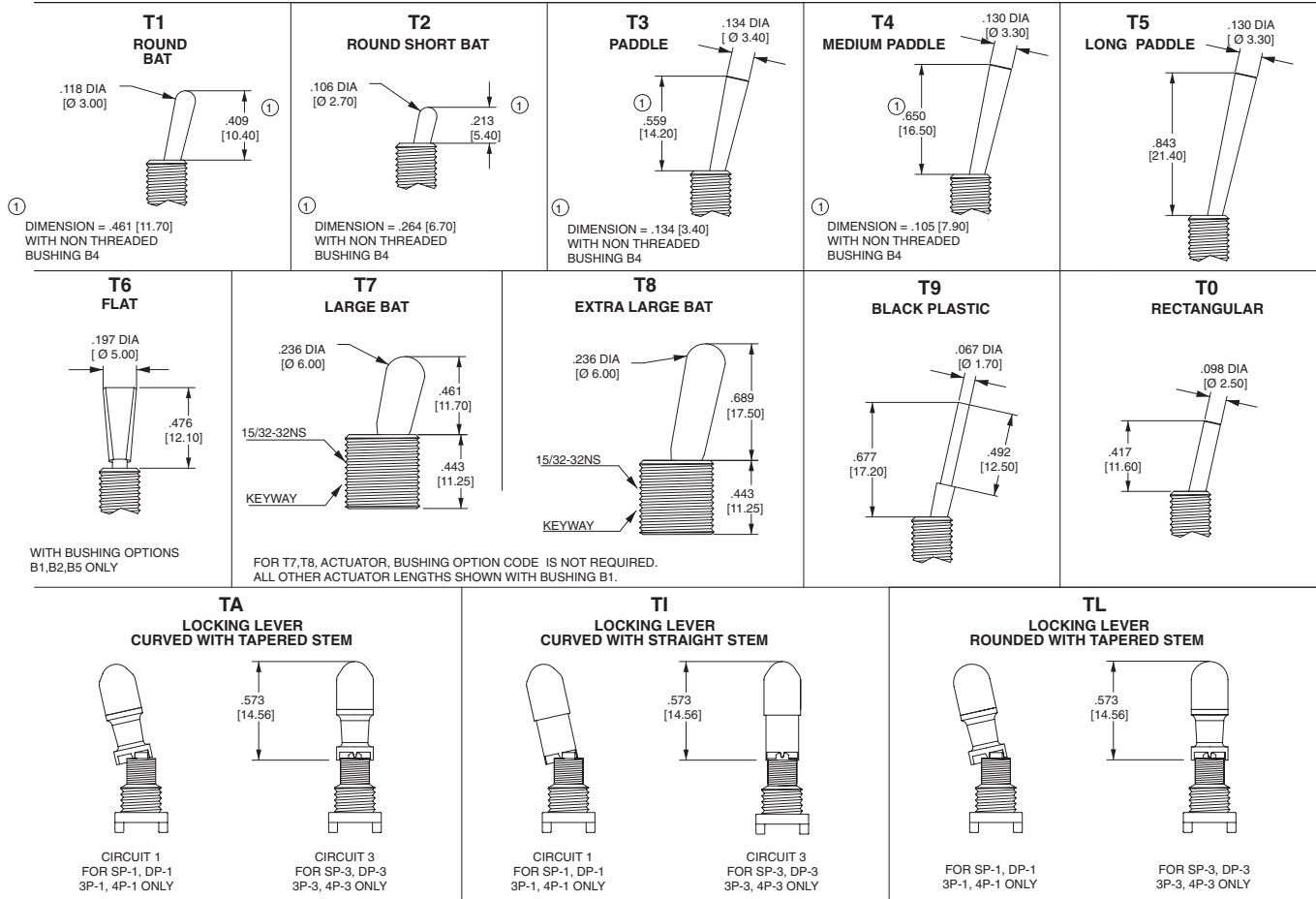
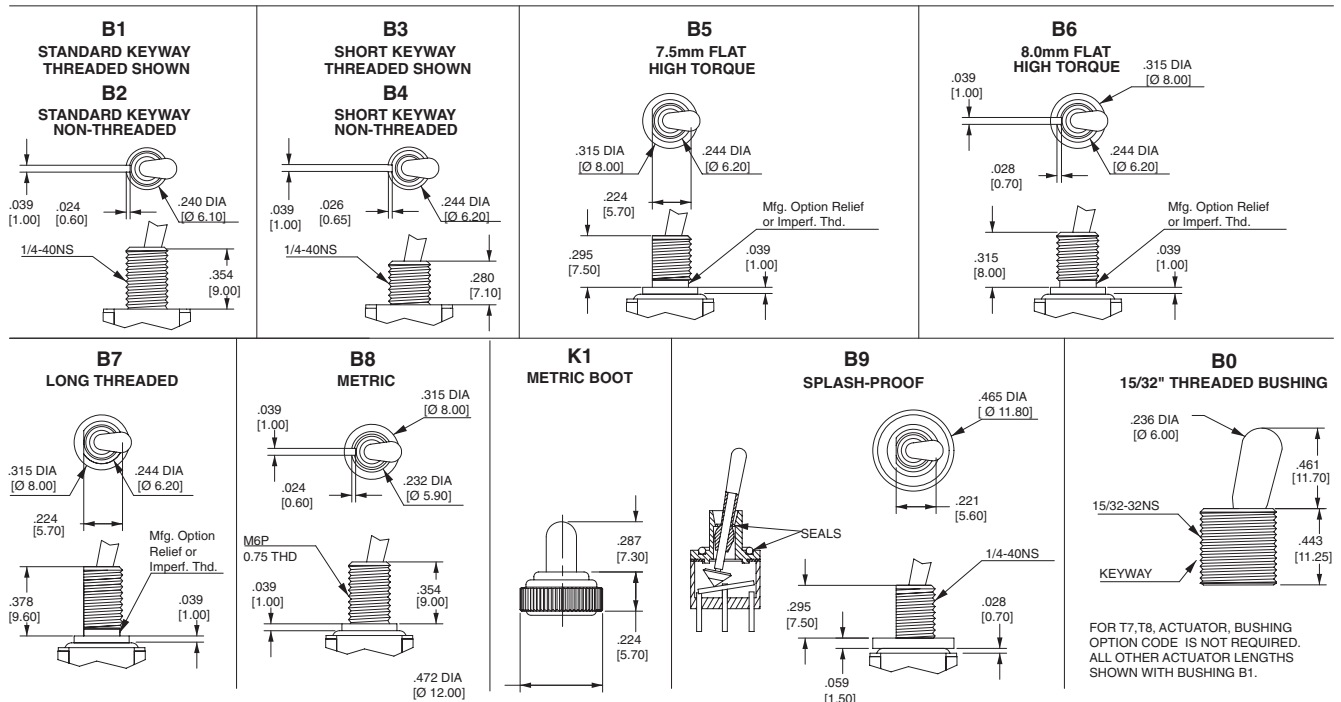
All switches come with standard nut, washer and locking ring. T7 and T8 actuator styles come with a larger nut, washer and locking ring, to accommodate the switch.

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

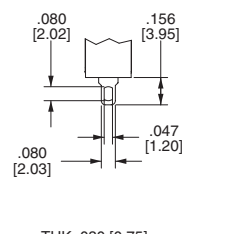
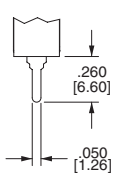
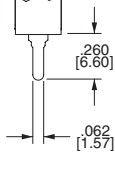
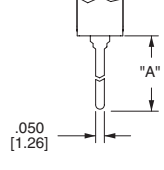
2MS & 2M2-Series

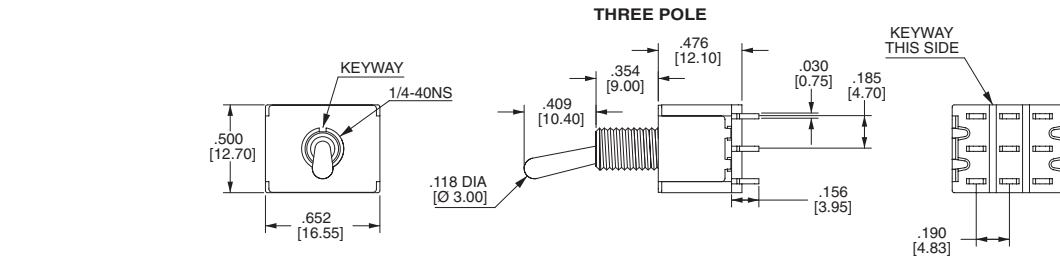
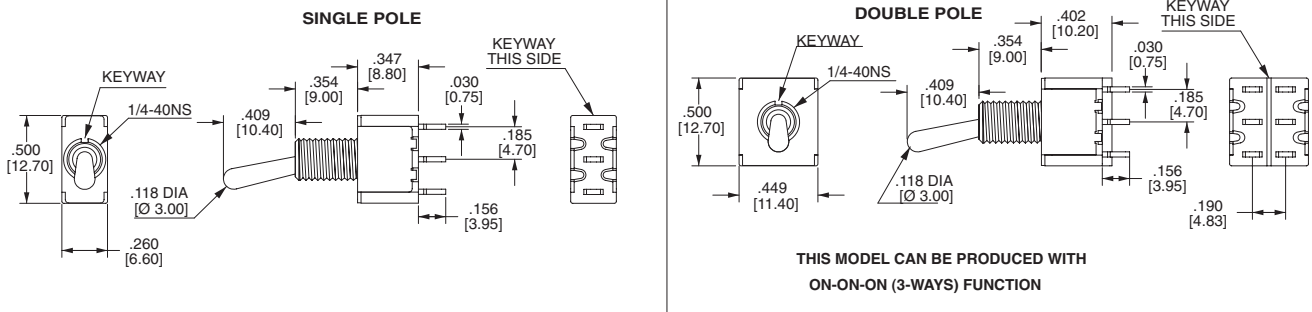
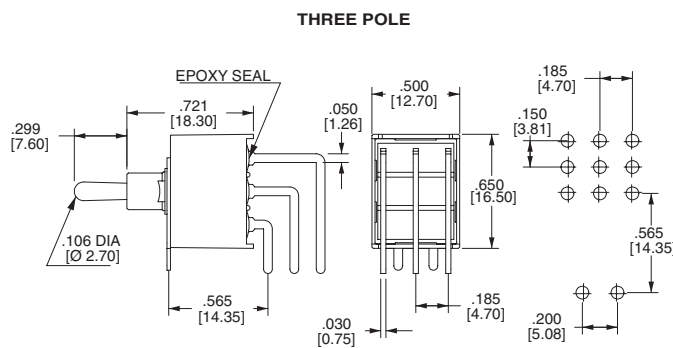
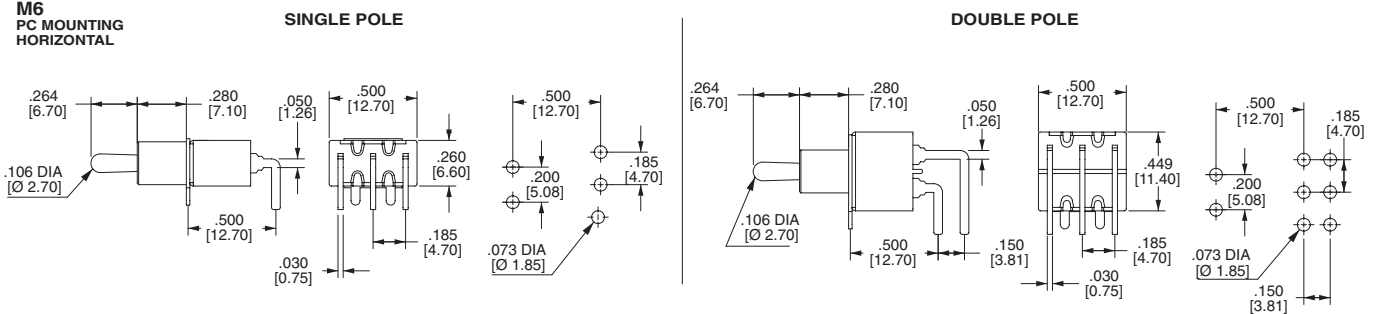
ACTUATOR

T1 ROUND BAT	T2 ROUND SHORT BAT	T9 BLACK PLASTIC
 ① SUBTRACT 2.55 FOR B1 BUSHING	 ① SUBTRACT 2.55 FOR B1 BUSHING	

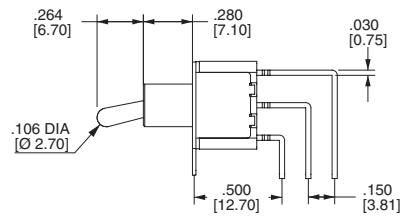
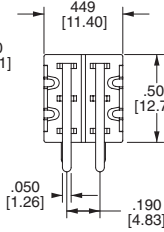
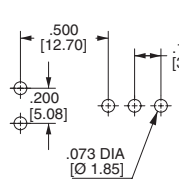
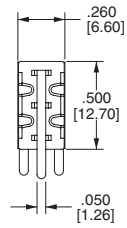
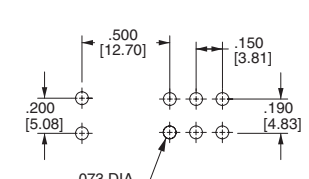
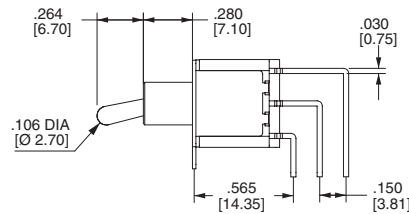
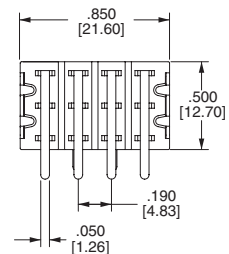
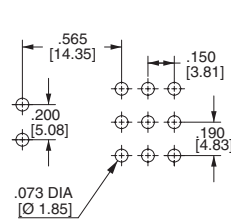
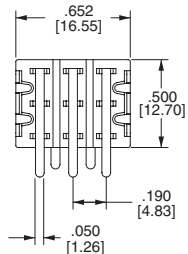
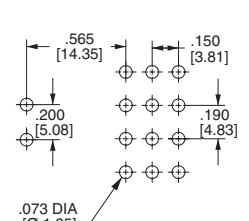
2M-Series Dimensional Specifications: in. [mm]
2M1-Series
ACTUATOR

BUSHING


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

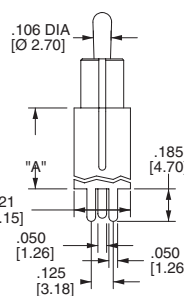
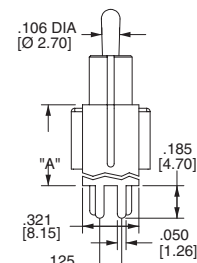
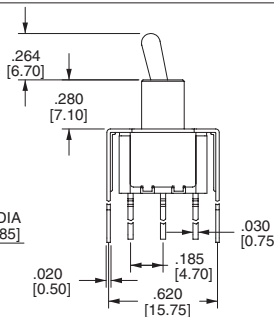
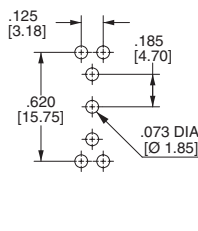
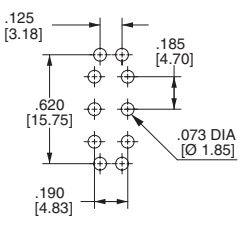
M1 SOLDER LUG  THK .030 [0.75]	M2 PCB  THK .030 [0.75]	M3 QUICK CONNECT  THK .030 [0.75]	M5 WIRE WRAP  THK .030 [0.75]	<table><tr><th>OPTION CODE</th><th>DIM. "A"</th></tr><tr><td>M5-1</td><td>.750 [19.05]</td></tr><tr><td>M5-2</td><td>.964 [24.48]</td></tr><tr><td>M5-3</td><td>.425 [10.80]</td></tr><tr><td>M5-4</td><td>1.062 [26.97]</td></tr></table>	OPTION CODE	DIM. "A"	M5-1	.750 [19.05]	M5-2	.964 [24.48]	M5-3	.425 [10.80]	M5-4	1.062 [26.97]
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M5-1	.750 [19.05]													
M5-2	.964 [24.48]													
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M5-4	1.062 [26.97]													


**M6
PC MOUNTING
HORIZONTAL**


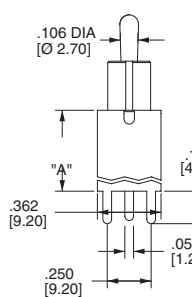
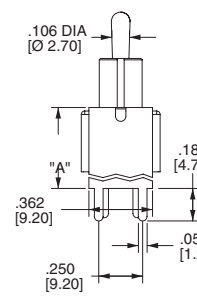
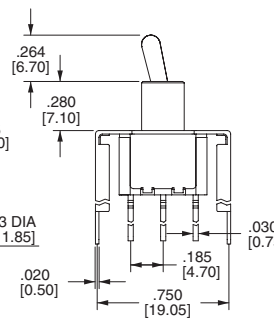
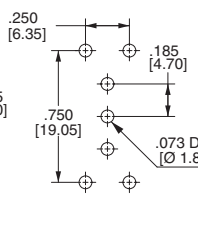
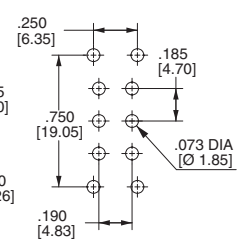
FOUR POLE

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**

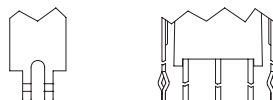
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VS3	.630 [16.00]

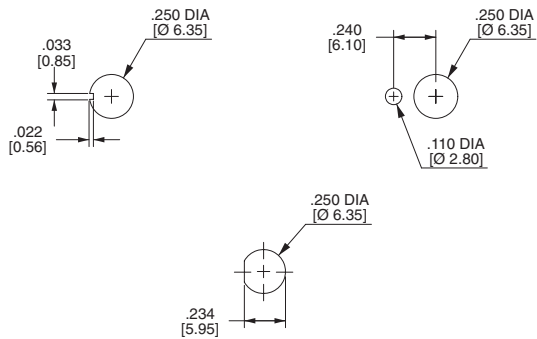
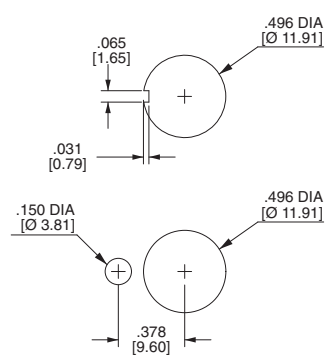
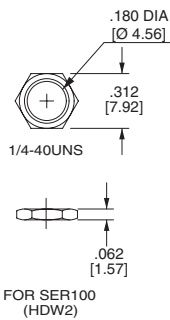
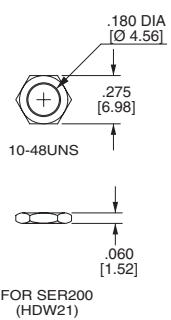
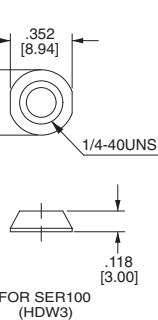
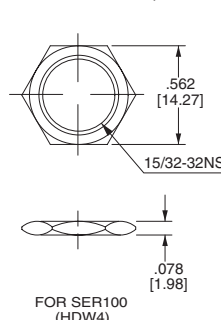
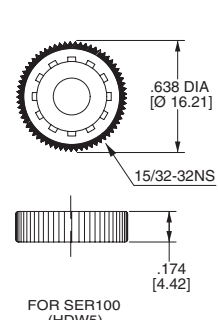
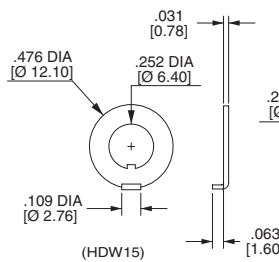
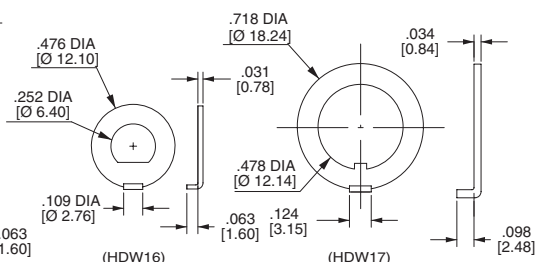
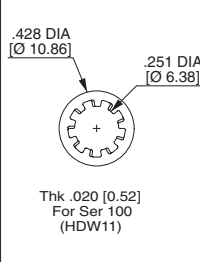
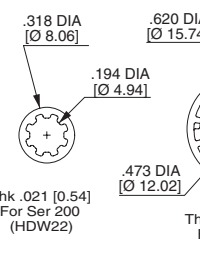
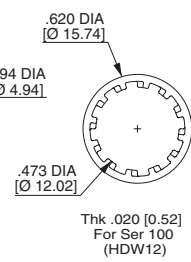
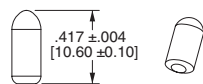

SINGLE POLE

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
