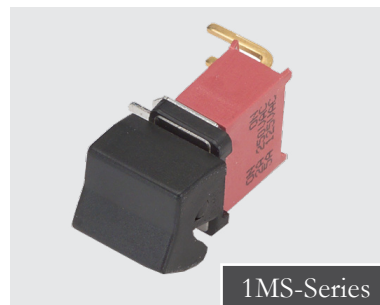
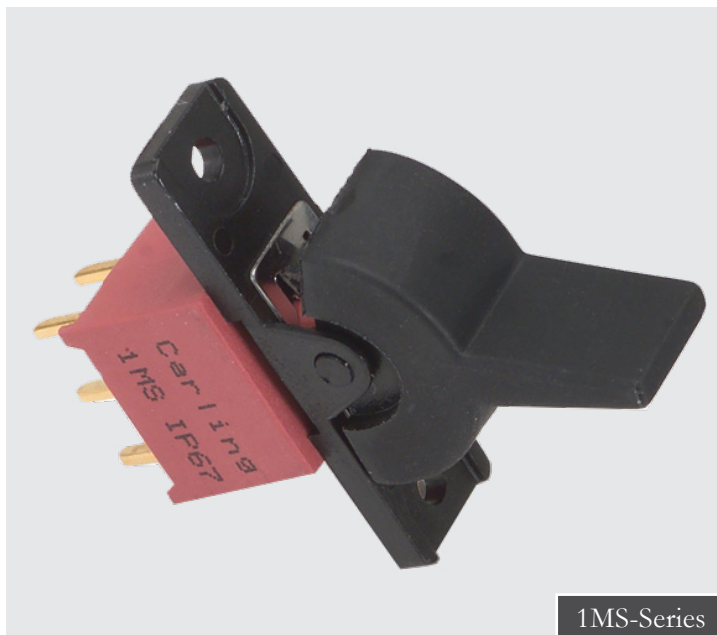


1MS/1M1

1M-Series

MINIATURE ROCKERS & PADDLES

The 1M family of miniature rocker & paddle switches is composed of two switch series; the **1M1-Series** miniature rocker and paddle switch, and the **1MS-Series** sealed miniature rocker and paddle switch. Both products feature PC mounting and offer a variety of ratings, circuits, contact materials, terminal platings, rocker and paddle actuator styles and colors.



Product Highlights:

- IP67 Sealing
- 9 Circuit Options
- Over 20 Termination Styles
- UL, CSA & cUL Approvals

Typical Applications:

- Instrumentation
- Test Equipment
- Telecommunications
- Networking
- Handheld Appliance

Resources:

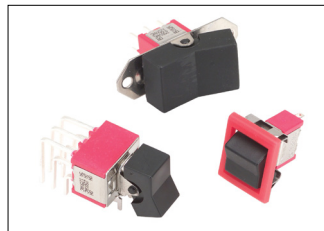
[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)





1MS-Series
Sealed
 Miniature Rocker
 & Rocker Switch



1M1-Series
 Miniature Rocker
 & Rocker Switch

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	<i>1MS-Series:</i> 30,000 make & break cycles @ full load <i>1M1-Series:</i> 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

Physical

Operating Temperature	-30°C to +85°C
Index of Protection	1MS-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210
Actuator Travel	25°

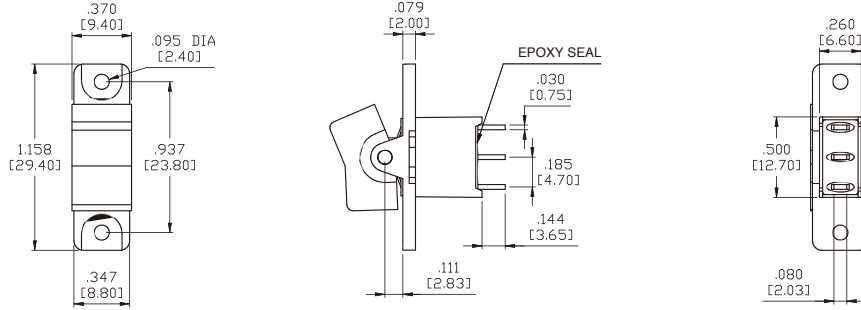
Material

Case	<i>1MS-Series:</i> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) <i>1M1-Series:</i> Dially phthalate (DAP) (UL 94V-0)
Rocker/Paddle	<i>1MS-Series:</i> Nylon, black standard, internal o-ring sealed <i>1M1-Series:</i> Nylon (UL 94V-0)
Bushing	<i>1MS-Series:</i> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) <i>1M1-Series:</i> Brass, nickel plated
Housing	<i>1MS-Series:</i> Spring Steel <i>1M1-Series:</i> Stainless Steel
Actuator Pivot & Mounting Bracket	<i>1MS-Series:</i> Nylon (UL 94V-0) <i>1M1-Series:</i> Stainless Steel
Actuator Pivot Retainer	<i>1MS-Series:</i> Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Epoxy

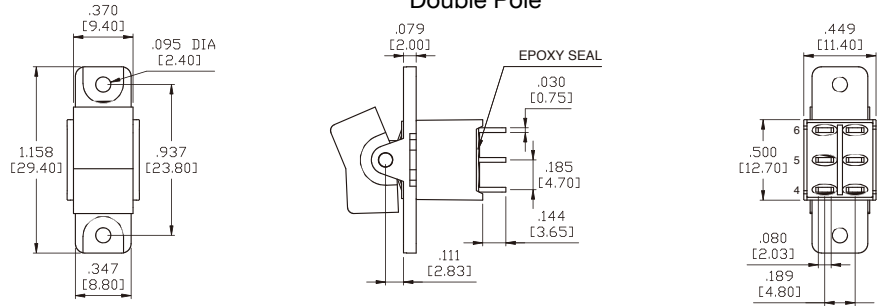
*Manufacturer reserves the right to change product specification without prior notice.

1MS-Series Dimensional Specifications: in. [mm]

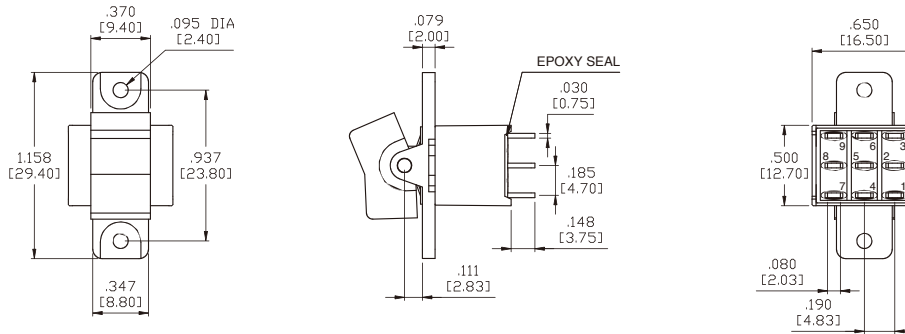
Single Pole



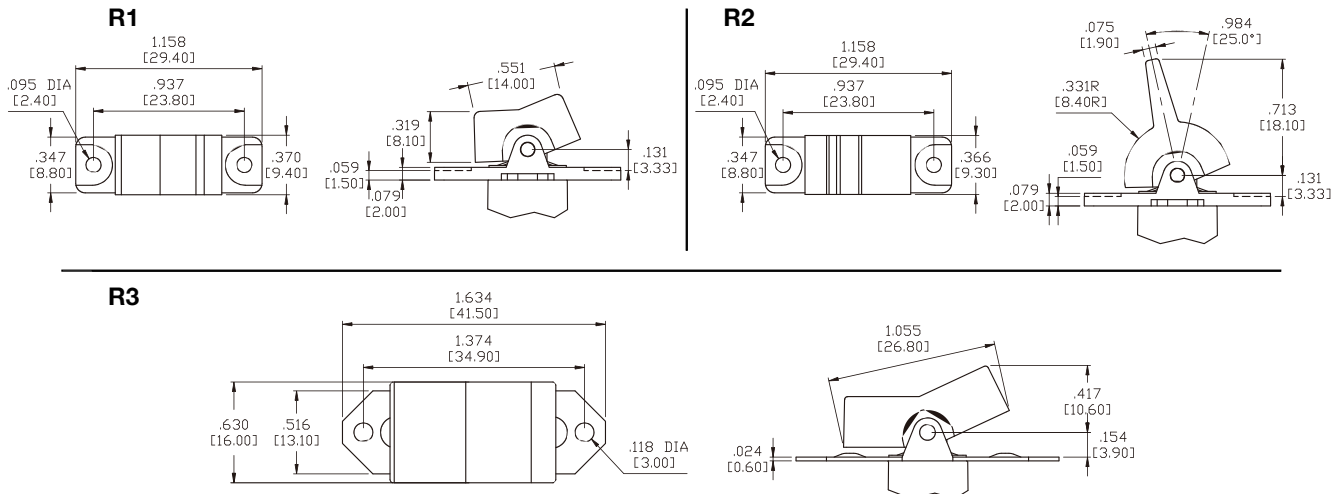
Double Pole



Three Pole



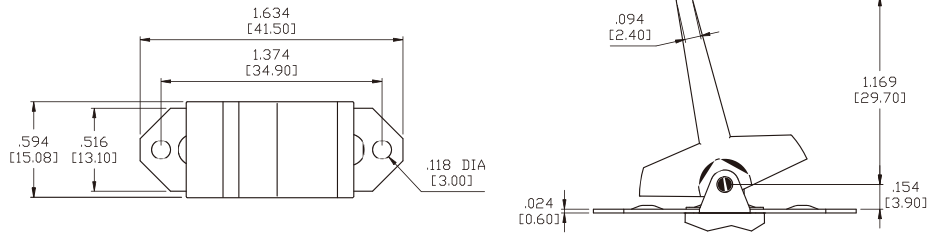
Actuator Options for Panel Rear Mount



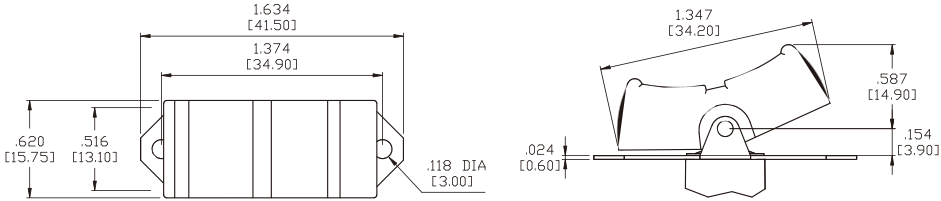
1MS-Series Dimensional Specifications: in. [mm]

Actuator Options for Panel Rear Mount

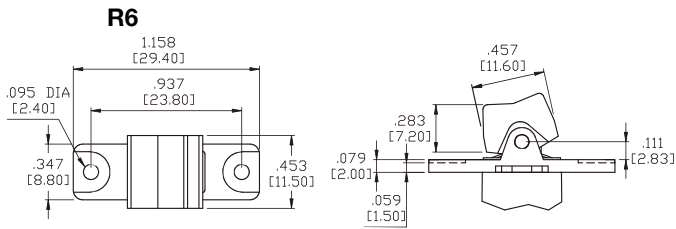
R4



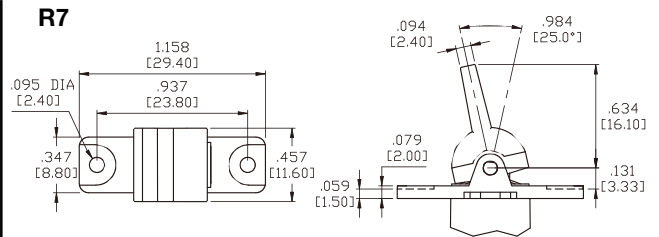
R5



R6

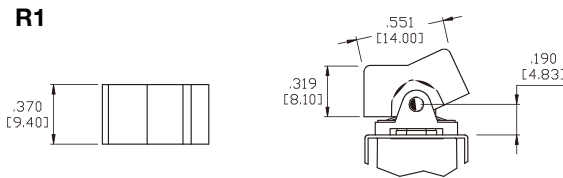


R7

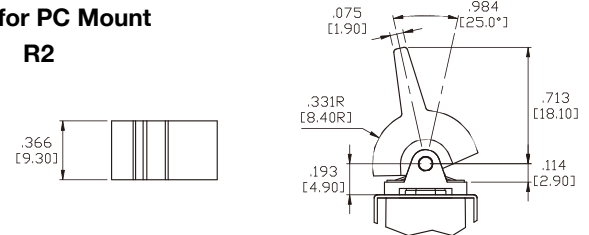


Actuator Options for PC Mount

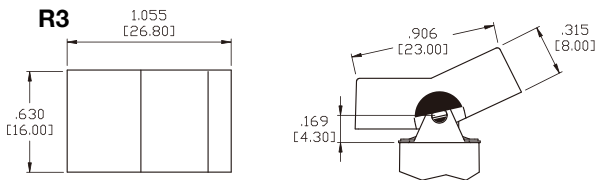
R1



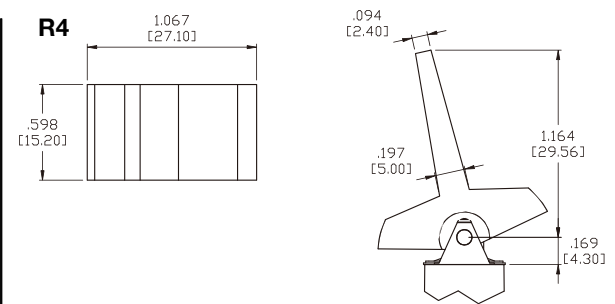
R2



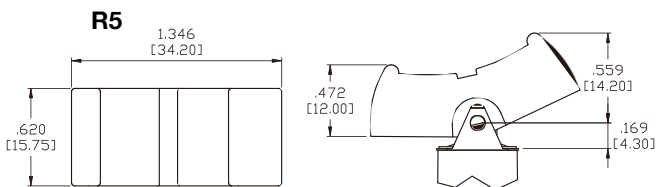
R3



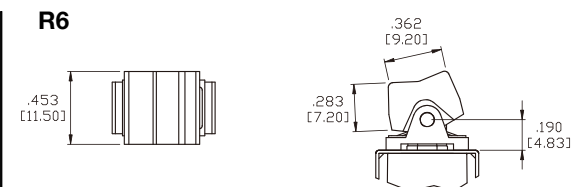
R4



R5



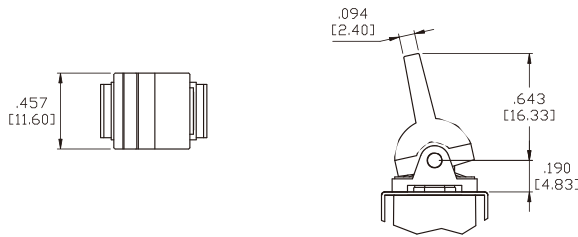
R6



1MS-Series Dimensional Specifications: in. [mm]

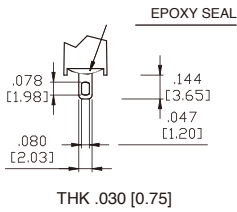
Actuator Options for PC Mount

R7

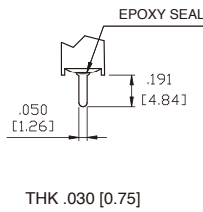


Termination Options

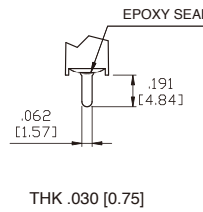
M1 Standard Solder Lug



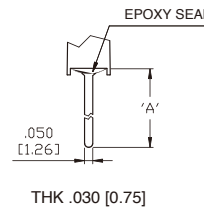
M2 PC Thru-Hole



M3 Quick Connect

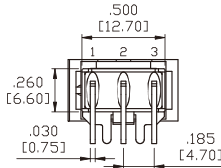
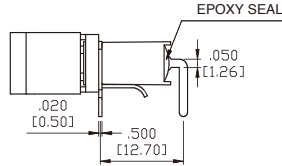
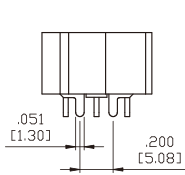


M5 Wire Wrap

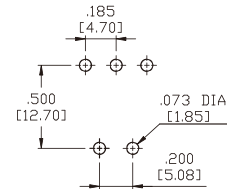


OPTION CODE	DIM. 'A'
M5-1	.711 [18.05]
M5-2	.924 [23.48]
M5-3	.386 [9.80]
M5-4	1.022 [25.97]

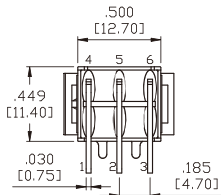
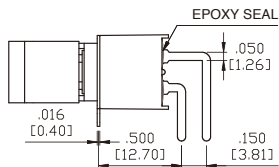
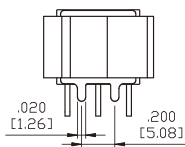
M6 Single Pole



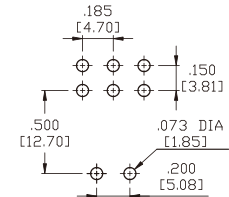
P.C.MOUNTING



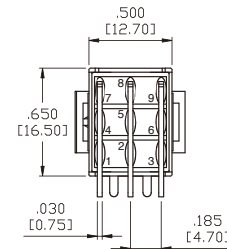
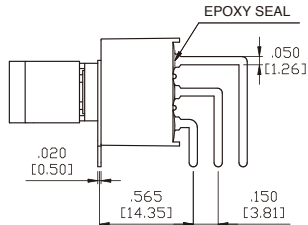
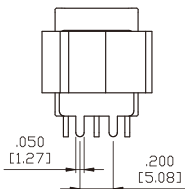
M6 Double Pole



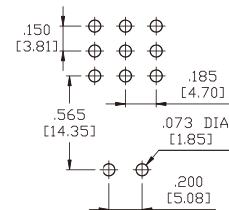
P.C.MOUNTING



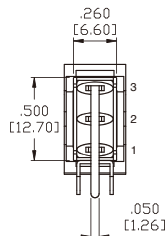
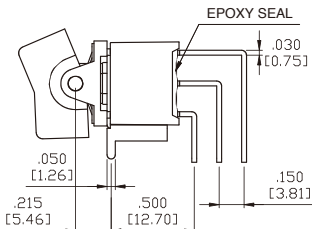
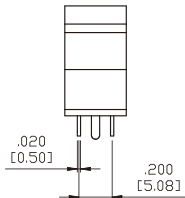
M6 Three Pole



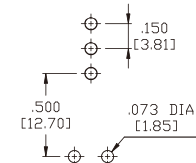
P.C.MOUNTING



M7 Single Pole



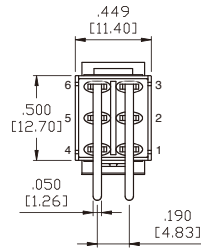
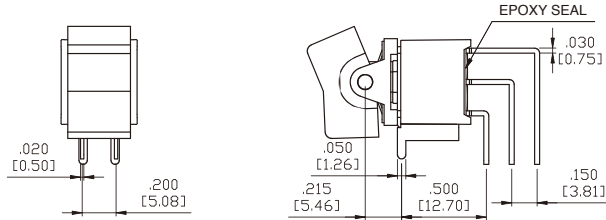
P.C.MOUNTING



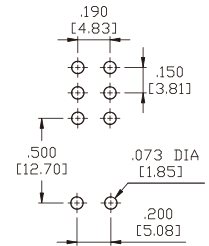
1MS-Series Dimensional Specifications: in. [mm]

Termination Options

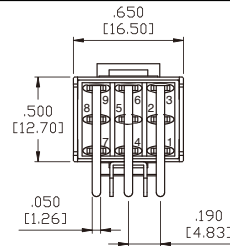
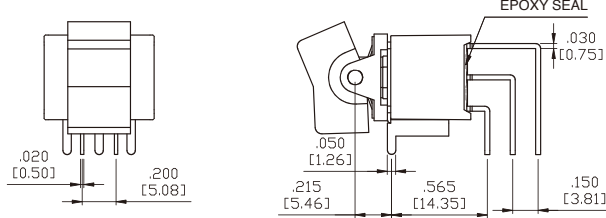
M7 Double Pole



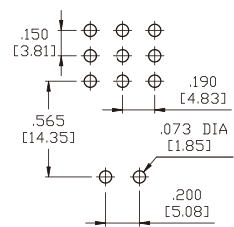
P.C.MOUNTING



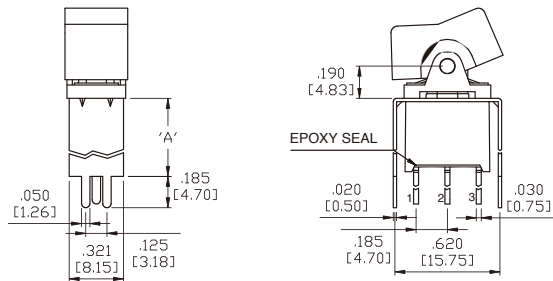
M7 Three Pole



P.C.MOUNTING

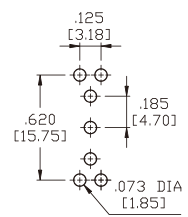


VS2-VS3 Single Pole

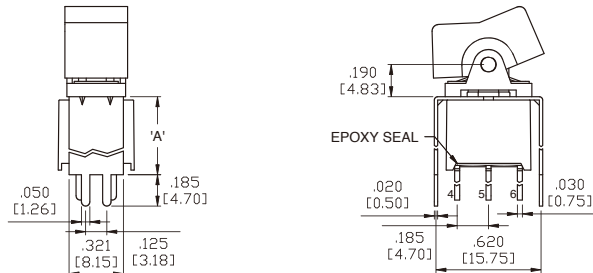


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

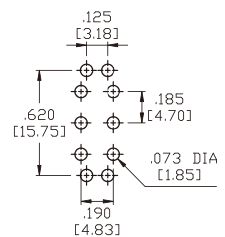


VS2-VS3 Double Pole

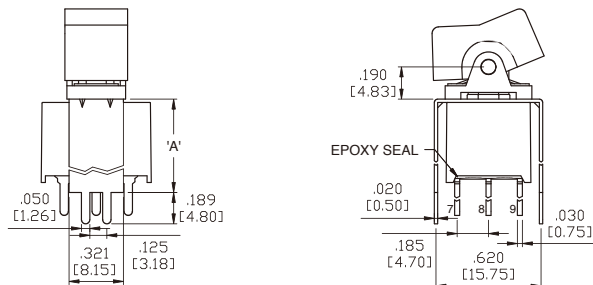


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

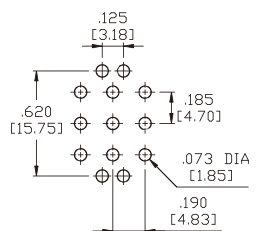


U2-VS3 Three Pole



OPTION CODE	DIM.'A'
U2	.551 [14.00]
VS3	.630 [16.00]

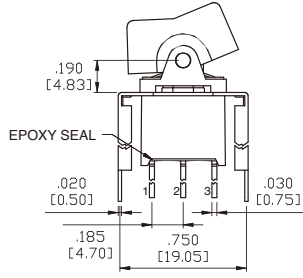
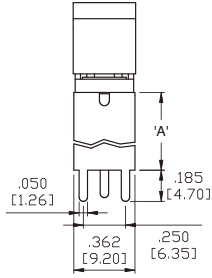
P.C.MOUNTING



1MS-Series Dimensional Specifications: in. [mm]

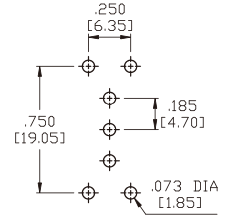
Termination Options

VS4-VS5 Single Pole

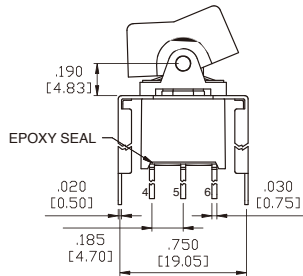
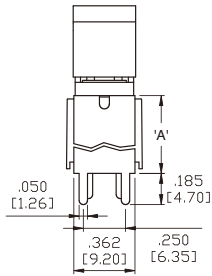


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

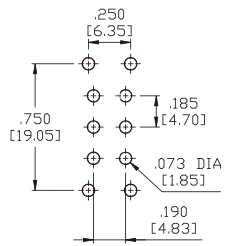


VS4-VS5 Double Pole

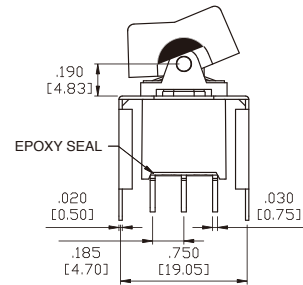
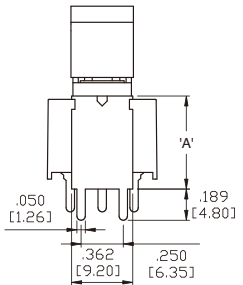


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

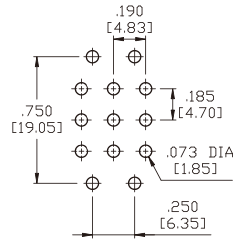


U4-VS5 Three Pole



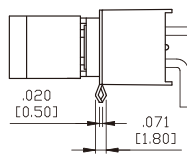
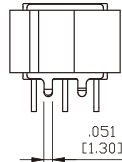
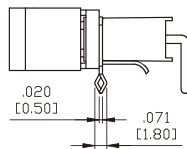
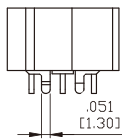
OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

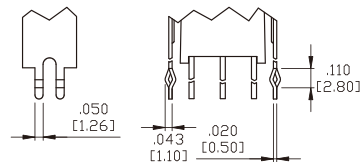


Snap-In Termination Options

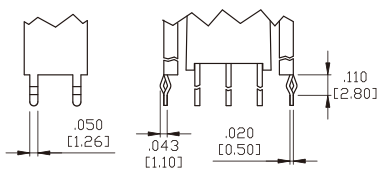
M61



VS21, VS31



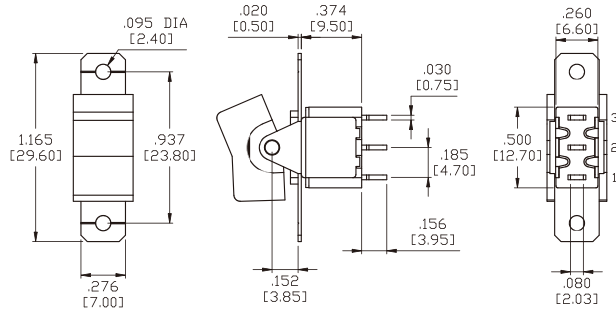
VS41, VS51



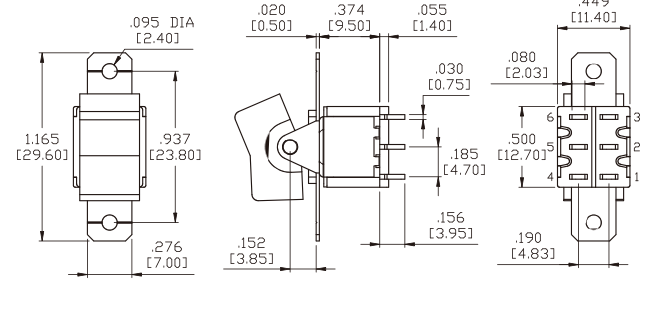
* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

1M1-Series Dimensional Specifications: in. [mm]

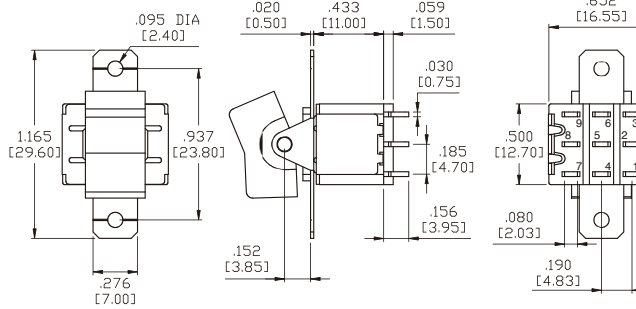
Single Pole



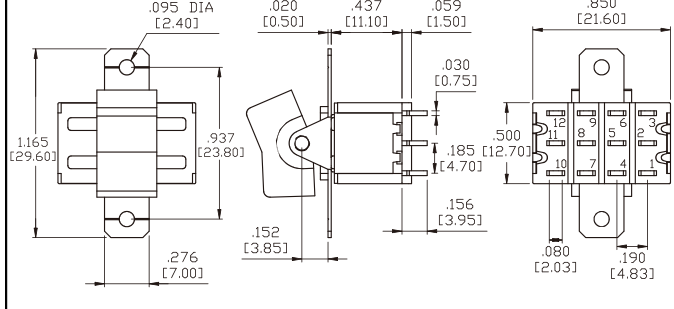
Double Pole



Three Pole

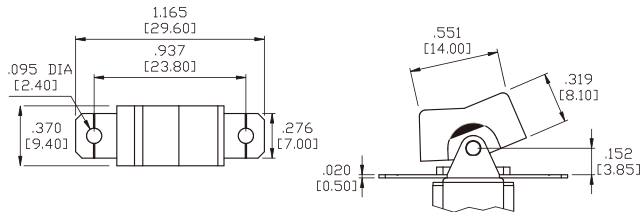


Four Pole

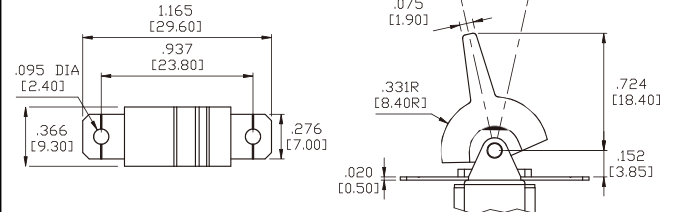


Actuator Options for Panel Rear Mount

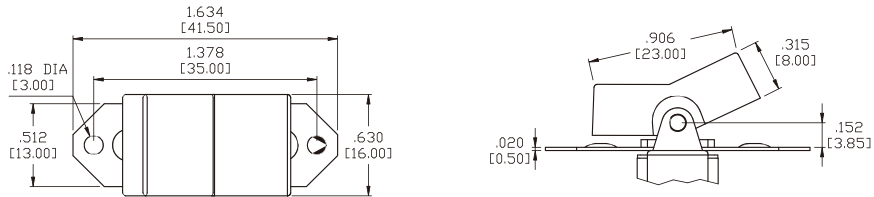
R1



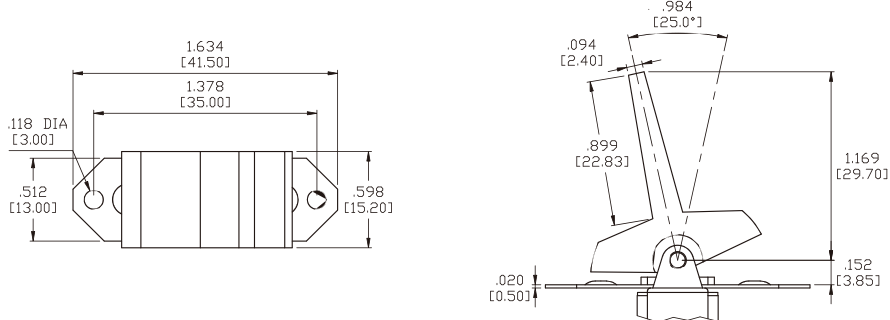
R2



R3



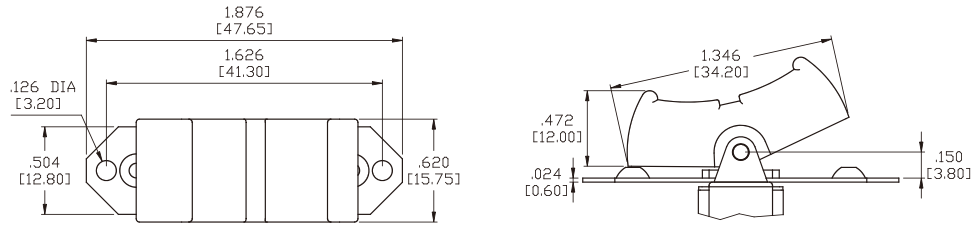
R4



1M1-Series Dimensional Specifications: in. [mm]

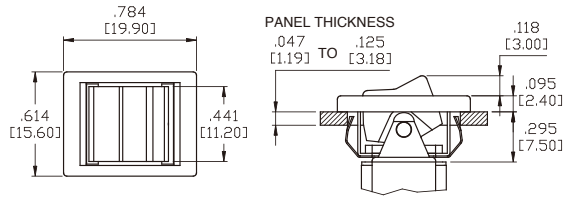
Actuator Options for Panel Rear Mount

R5

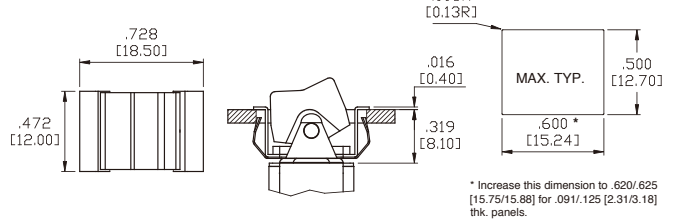


Actuator Options for Snap-In Mount

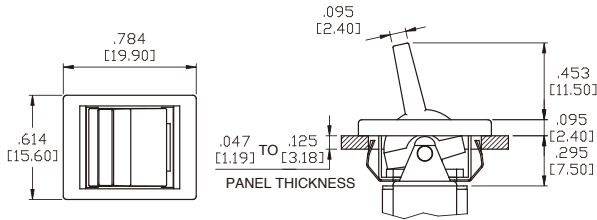
R6



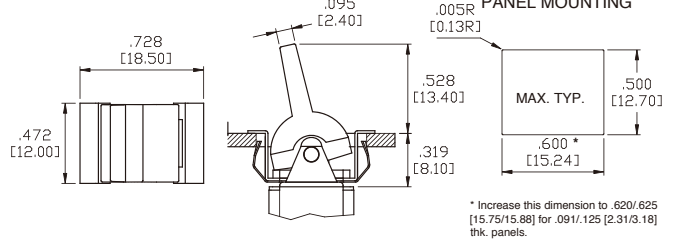
R6 WITHOUT FRAME



R7

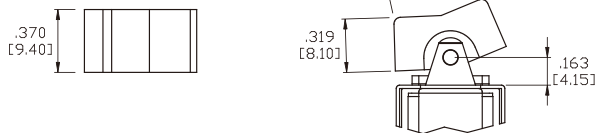


R7 WITHOUT FRAME

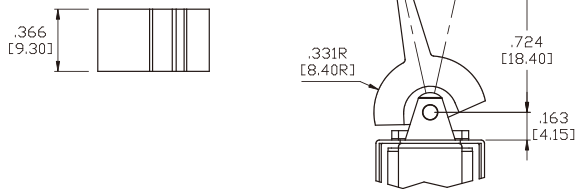


Actuator Options for PC Mount

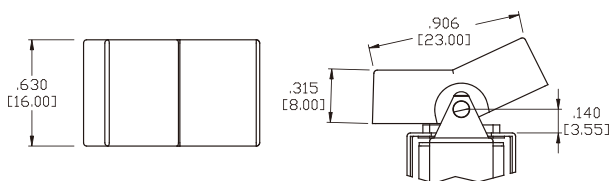
R1



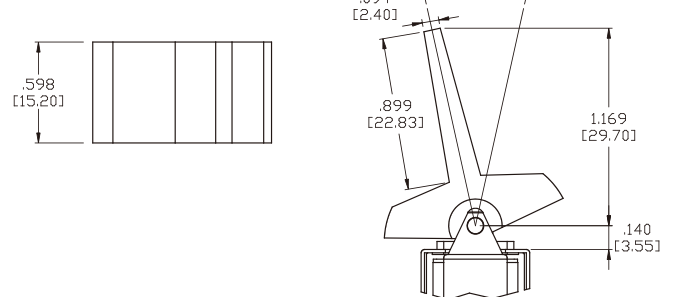
R2



R3

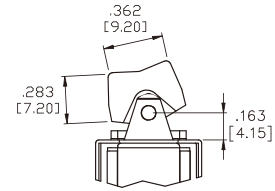
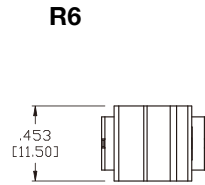
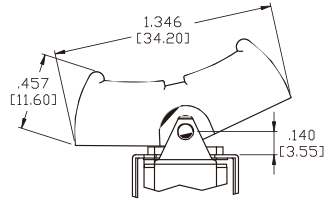
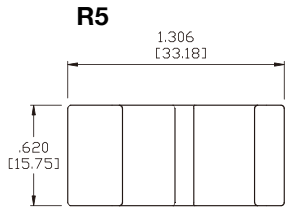


R4

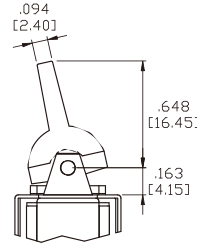


1M1-Series Dimensional Specifications: in. [mm]

Actuator Options for PC Mount

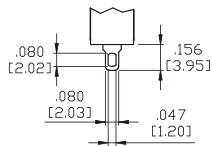


R7



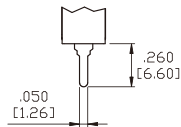
Termination Options

M1 Standard Solder Lug



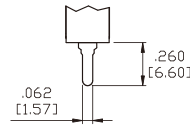
THK .030 [0.75]

M2 PC Thru-Hole



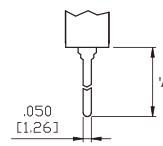
THK .030 [0.75]

M3 Quick Connect



THK .030 [0.75]

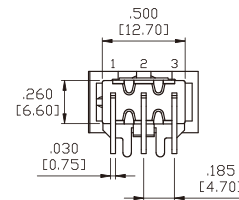
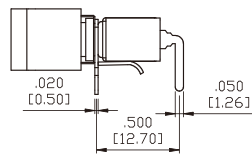
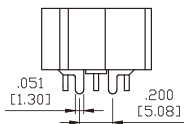
M5 Wire Wrap



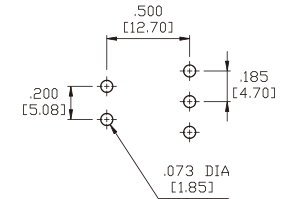
THK .030 [0.75]

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]

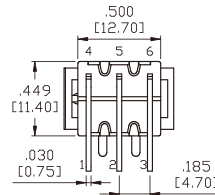
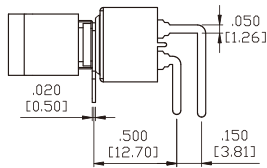
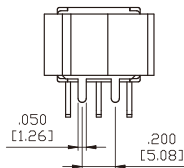
M6 Single Pole



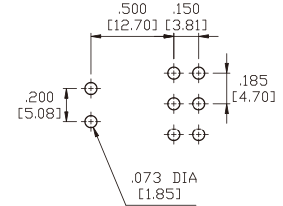
P.C.MOUNTING



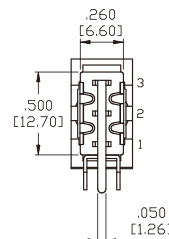
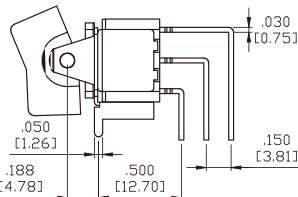
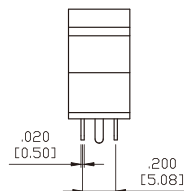
M6 Double Pole



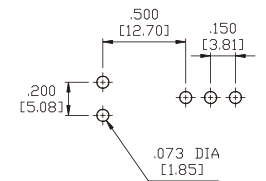
P.C.MOUNTING



M7 Single Pole



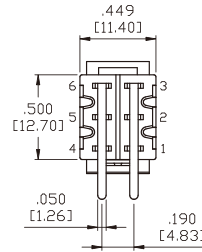
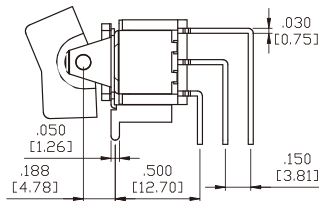
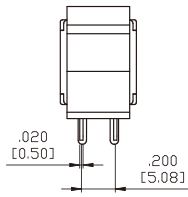
P.C.MOUNTING



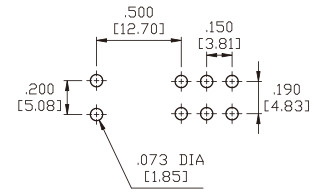
1M1-Series Dimensional Specifications: in. [mm]

Termination Options

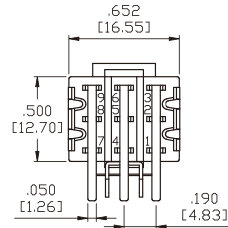
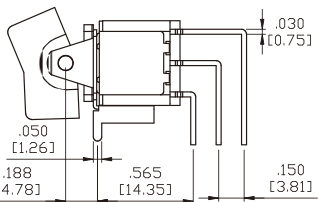
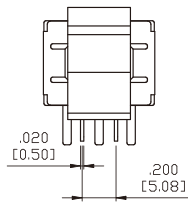
M7 Double Pole



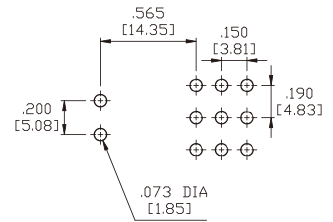
P.C.MOUNTING



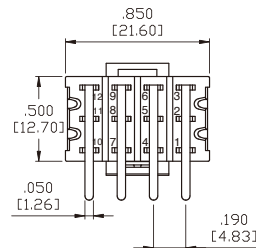
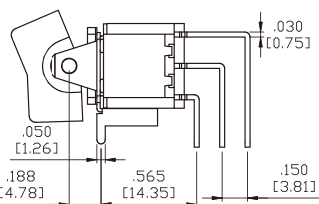
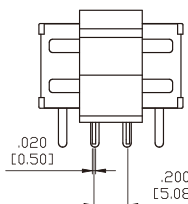
M7 Three Pole



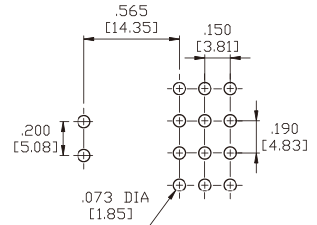
P.C.MOUNTING



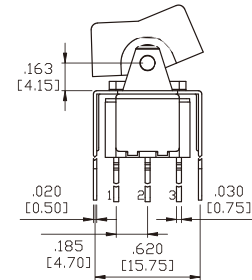
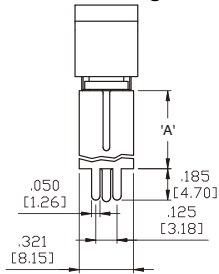
M7 Four Pole



P.C.MOUNTING

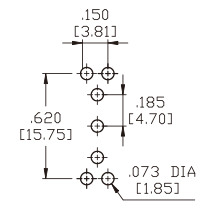


VS2-VS3 Single Pole

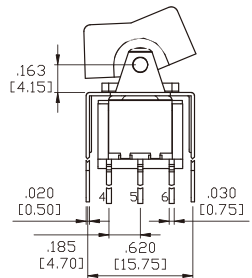
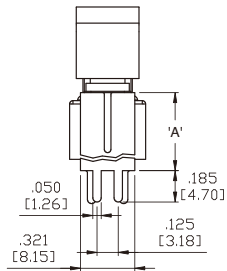


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

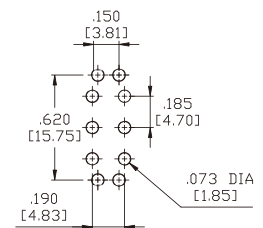


VS2-VS3 Double Pole



OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

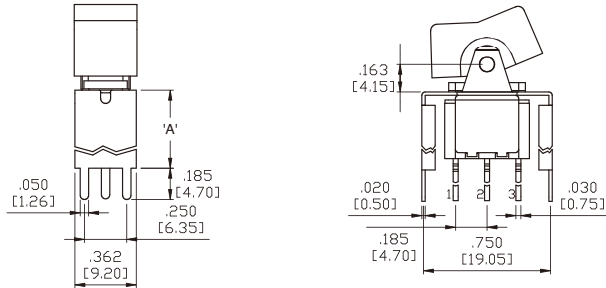
P.C.MOUNTING



1M1-Series Dimensional Specifications: in. [mm]

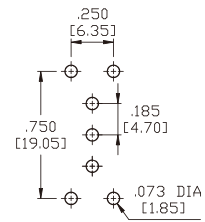
Termination Options

VS4-VS5 Single Pole

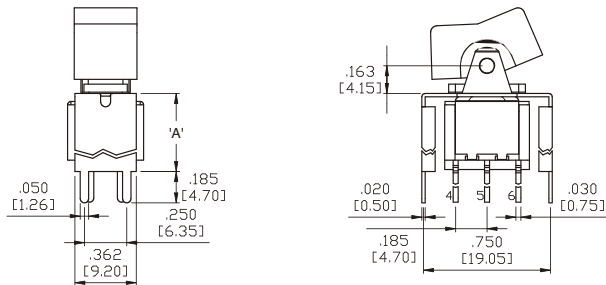


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

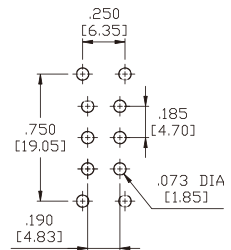


VS4-VS5 Double Pole

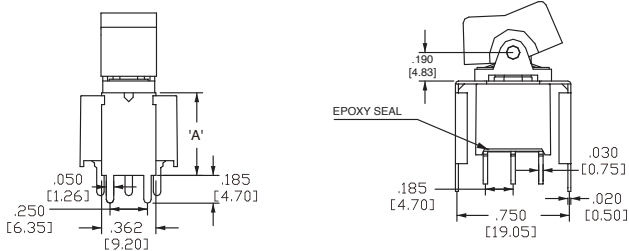


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

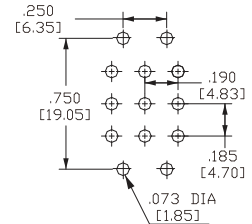


U4-VS5 Three Pole



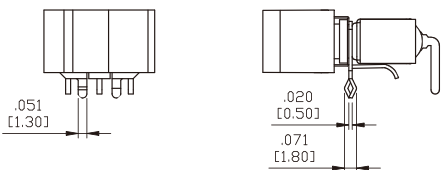
OPTION CODE	DIM. 'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

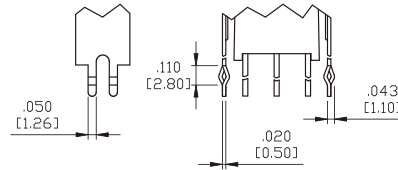


Snap-In Termination Options

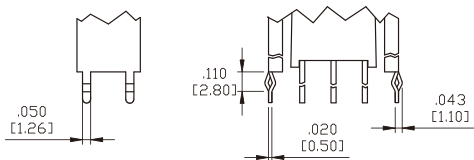
M61



VS21, VS31



VS41, VS51



* PC Mounting for M61, VS21, VS31, VS41, VS51 refer to M6, VS2, VS3, VS4, VS5 respectively.

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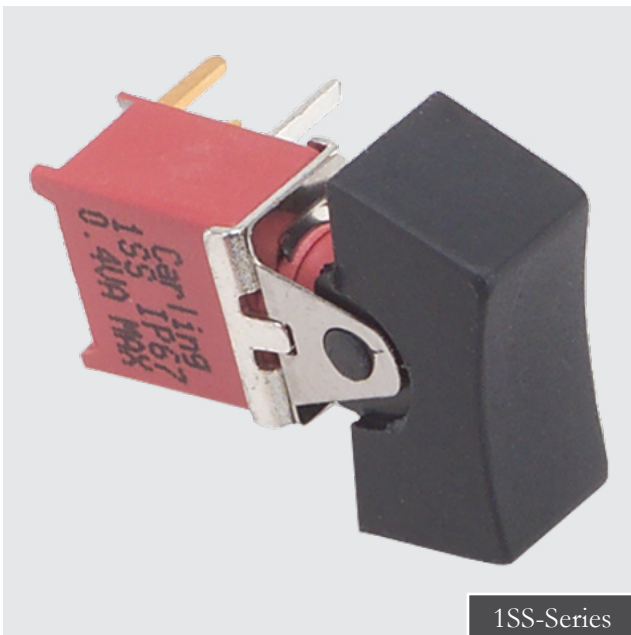
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1SS/1S1/1SM

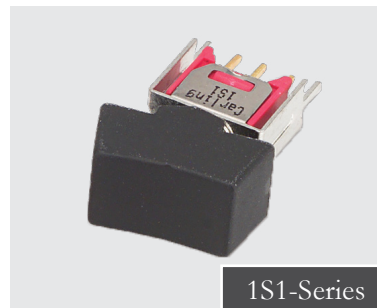
1S-Series

SUB-MINIATURE ROCKERS

The 1S family of sub-miniature rocker switches is composed of three switch series; the **1S1-Series** sub-miniature rocker switch, the **1SS-Series** sealed sub-miniature rocker switch, and the **1SM-Series** surface mount sealed sub-miniature rocker switch. All of these series offer a variety of ratings, circuits, contact materials, terminal platings, and actuator colors.



1SS-Series



1S1-Series



1SM-Series

Product Highlights:

- IP67 Sealing
- 5 Circuit Configurations
- 3 Rocker Styles to choose from
- Dry-Circuit thru 3A 125VAC Rating
- Snap-in, Solder Lug or PC Terminations

Typical Applications:

- Instrumentation
- Test Equipment
- Telecommunications
- Networking
- Handheld Appliances

Resources:

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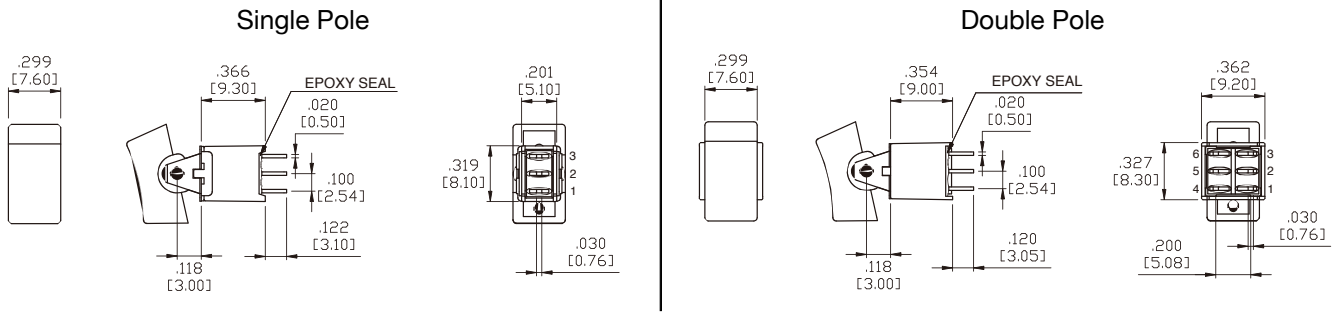
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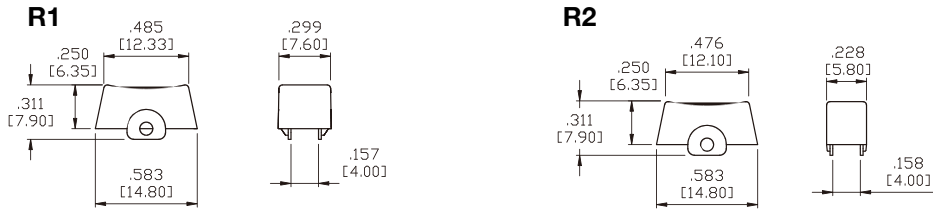
Carling Technologies, Inc.
60 Johnson Avenue, Plainville, CT 06062
Email: sales@carlingtech.com
Application Support: team2@carlingtech.com
Phone: 860.793.9281 Fax: 860.793.9231

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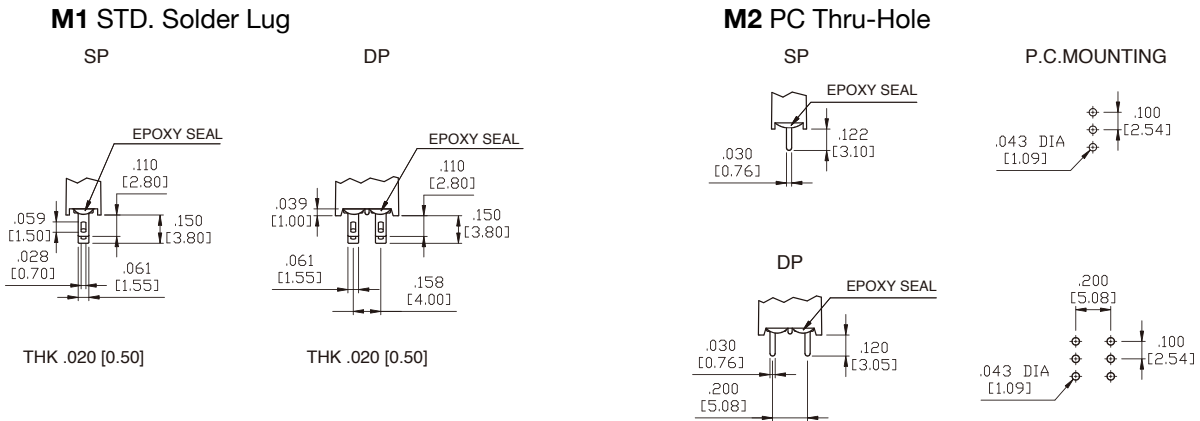
1SS-Series Dimensional Specifications: in. [mm]



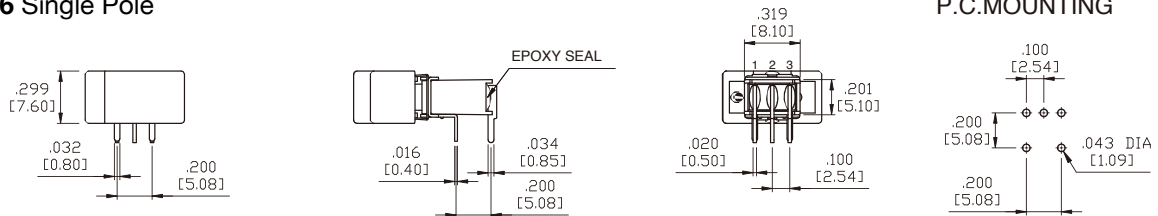
Actuator Options



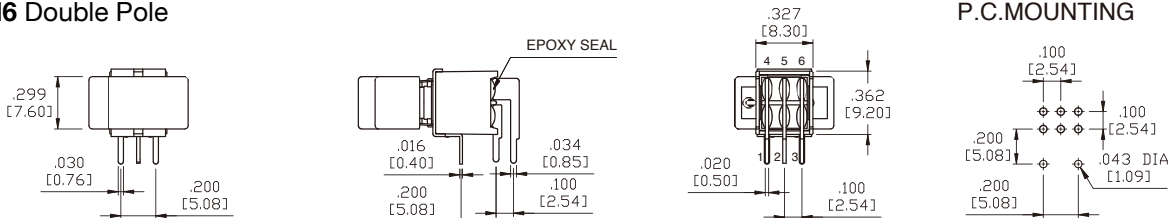
Termination Options



M6 Single Pole



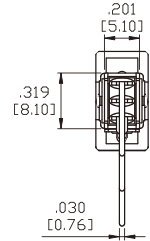
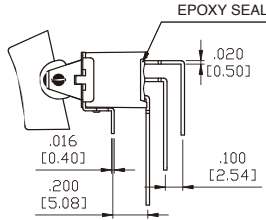
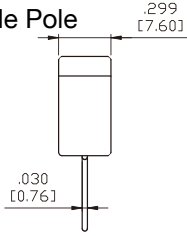
M6 Double Pole



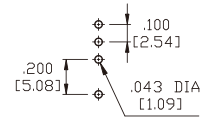
1SS-Series Dimensional Specifications: in. [mm]

Termination Options

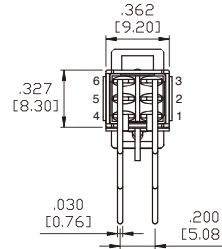
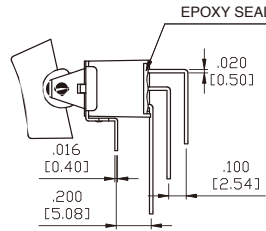
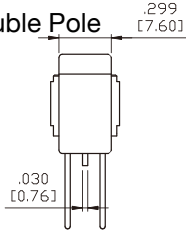
M7 Single Pole



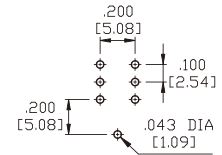
P.C.MOUNTING



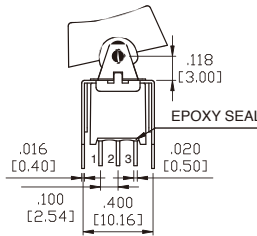
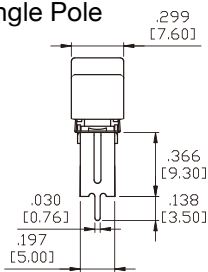
M7 Double Pole



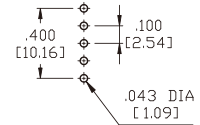
P.C.MOUNTING



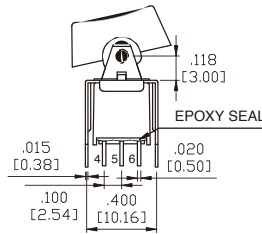
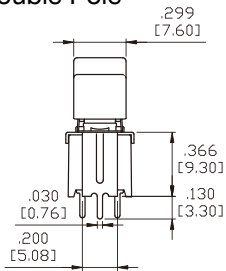
VS2 Single Pole



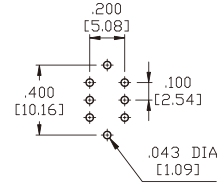
P.C.MOUNTING



VS2 Double Pole

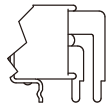
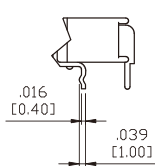


P.C.MOUNTING

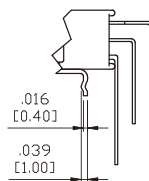


Snap-In Termination Options

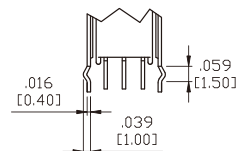
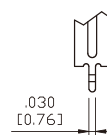
M61



M71

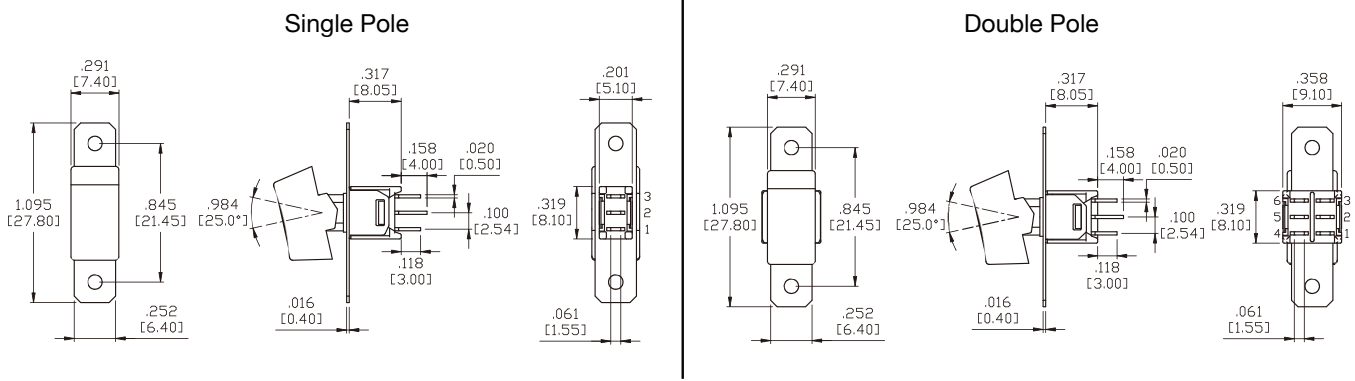


VS21

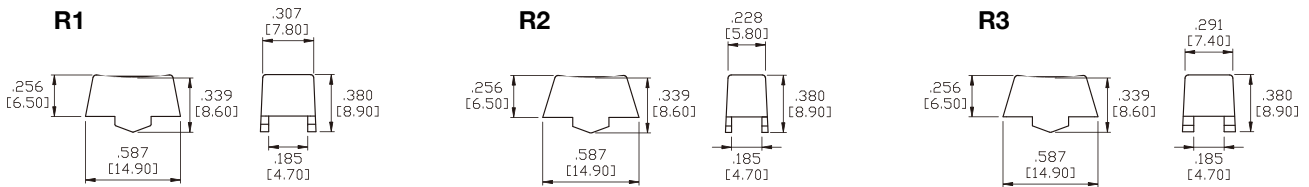


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

1S1-Series Dimensional Specifications: in. [mm]

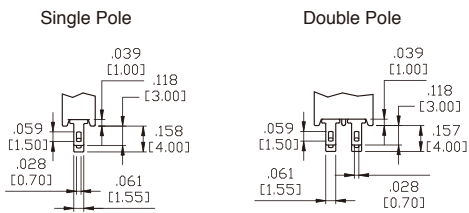


Actuator Options

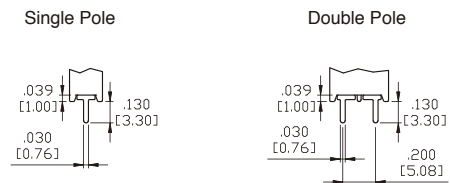


Termination Options

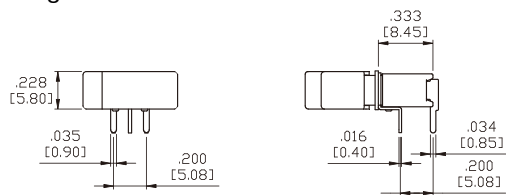
M1 STD. Solder Lug



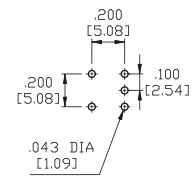
M2 PC Thru-Hole



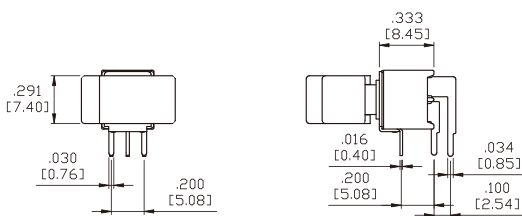
M6 Single Pole



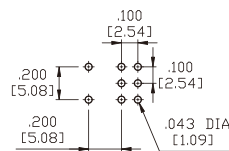
P.C.MOUNTING



M6 Double Pole



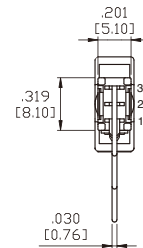
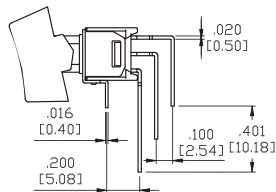
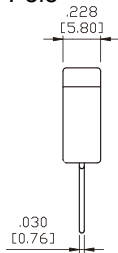
P.C.MOUNTING



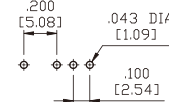
1S1-Series Dimensional Specifications: in. [mm]

Termination Options

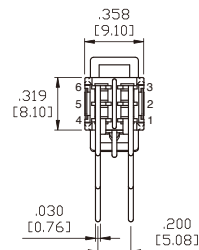
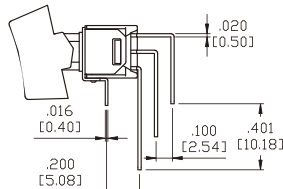
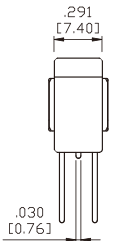
M7 Single Pole



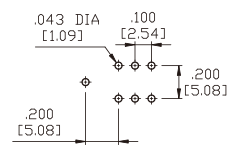
P.C.MOUNTING



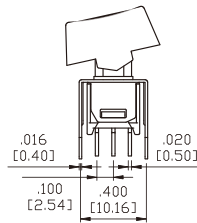
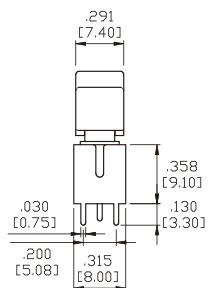
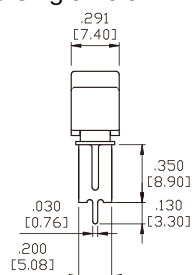
M7 Double Pole



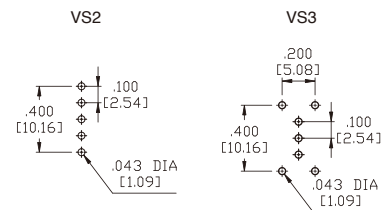
P.C.MOUNTING



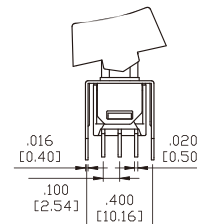
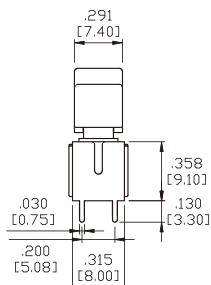
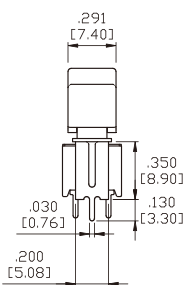
VS2-VS3 Single Pole



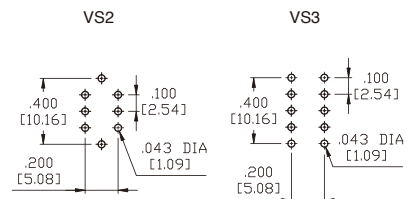
P.C.MOUNTING



VS2-VS3 Double Pole

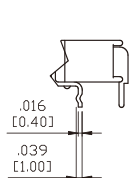


P.C.MOUNTING

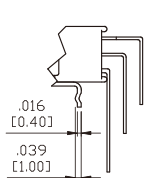


Snap-In Termination Options

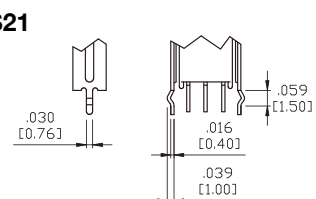
M61



M71

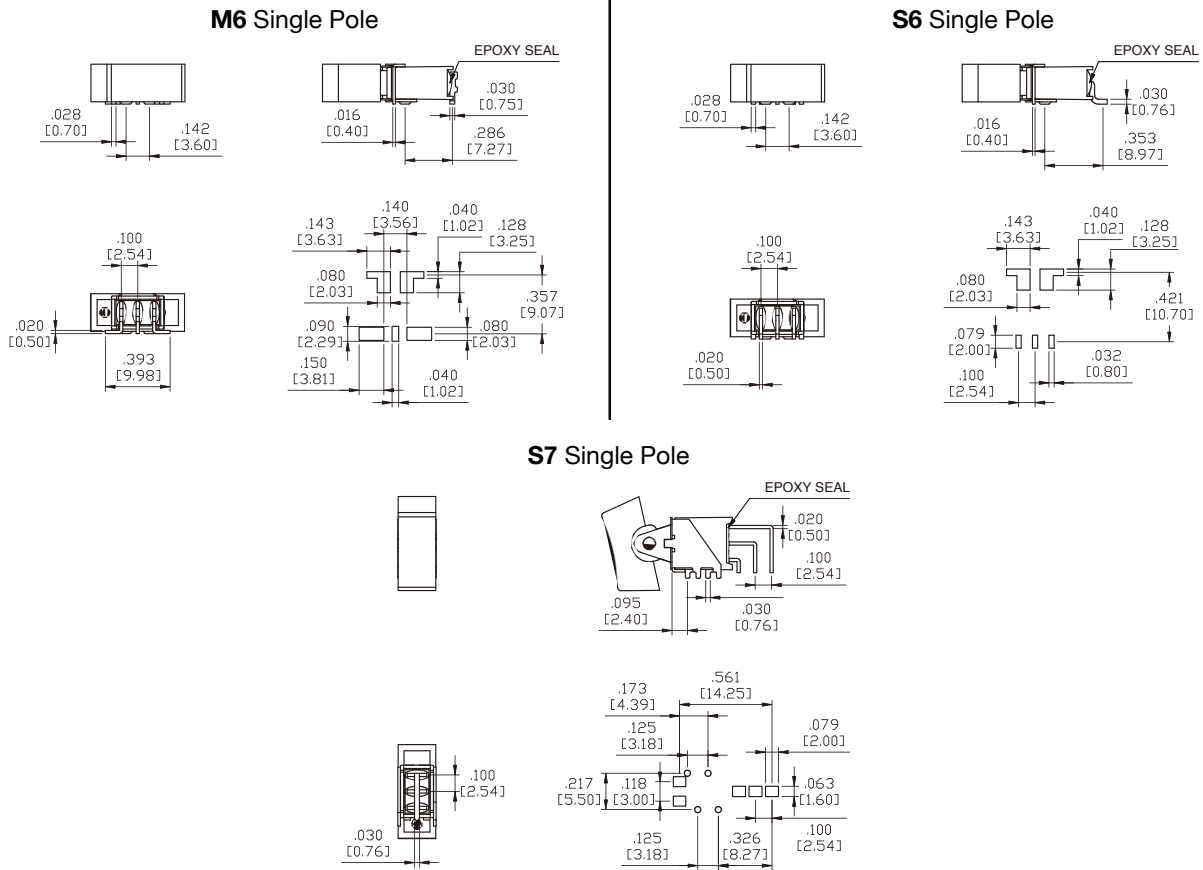


VS21

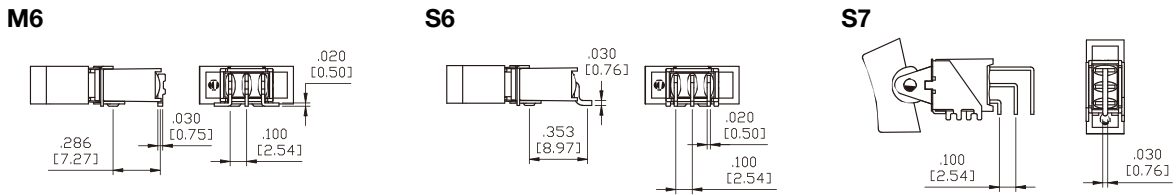


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

1SM-Series Dimensional Specifications: in. [mm]



Termination Options



Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit www.carlingtech.com/findarep.



About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With four ISO registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit www.carlingtech.com/company-profile.

To view all of Carling's environmental, quality, health & safety certifications please visit www.carlingtech.com/environmental-certifications

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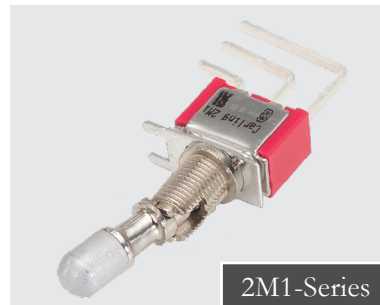
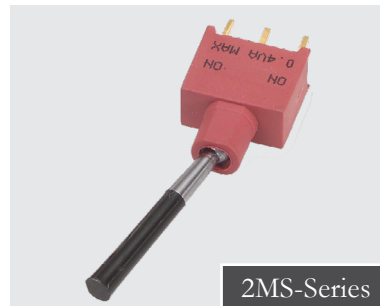
Carling Technologies®

Innovative Designs. Powerful Solutions.

2M-Series

MINIATURE TOGGLES

The 2M family of miniature toggle switches is composed of three switch series; the **2M1-Series** miniature toggle switch, the **2MS-Series** sealed miniature toggle switch, and the **2M1H-Series** premium sealed miniature toggle switch. These series all feature PC mounting and offer a variety of ratings, circuits, contact materials, terminal platings, toggle styles and lengths, and optional color caps.



Product Highlights:

- IP67 Sealing
- 8 Single and Double Pole Circuits
- Long, Short and Flatted Bushing Options
- Large Variety of Termination Options
- Available Gold, Silver and Tin Platings
- UL Approved
- Sleek Black Finish

Typical Applications:

- Telecommunications
- Instrumentation
- Networking
- Medical Equipment
- Military Communications

Resources:

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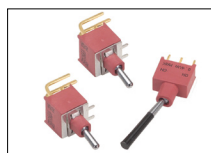
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www.carlingtech.com



2M1H-Series
Premium Sealed
Miniature
Toggle Switch



2MS-Series
Sealed
Miniature
Toggle Switch



2M1-Series
Miniature
Toggle Switch

Electrical

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

Physical

Operating Temperature	-30°C to +85°C
Index of Protection	<i>2M1H-Series:</i> IP67 <i>2MS-Series:</i> IP67
Solder Heat Resistance	MIL-STD-202, Method 210
Actuator Travel	25°

Material

Case	<i>2M1H-Series & 2M1-Series:</i> Diallyl phthalate (DAP) (UL 94V-0) <i>2MS-Series:</i> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)
Toggle	<i>2M1H-Series:</i> Brass, black finish with o-ring seal <i>2MS-Series:</i> Brass, chrome plated, internal o-ring sealed <i>2M1-Series:</i> Brass, chrome plated
Bushing	<i>2M1H-Series:</i> Brass, black finish with o-ring seal <i>2MS-Series:</i> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) <i>2M1-Series:</i> Brass, nickel plated
Housing	Stainless Steel
Bracket	<i>2MS-Series:</i> Nylon (UL 94V-0) <i>2M1-Series:</i> Stainless Steel
Actuator Pivot Retainer	<i>2MS-Series:</i> Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Epoxy



1 SERIES
2M1H Premium Sealed Miniature Toggle Switch

2 POLE / CIRCUIT
() - momentary
Position: **1** **2** **3**

SP1	ON	Connected Terminals	2-3, 5-6	ON	2-1, 5-4
SP2	ON	NONE		(ON)	
SP3	ON	OFF		ON	
SP4	(ON)	OFF		(ON)	
SP5	ON	OFF		(ON)	
DP1	ON	NONE		ON	
DP2	ON	NONE		(ON)	
DP3	ON	OFF		ON	
DP4	(ON)	OFF		(ON)	
DP5	ON	OFF		(ON)	
DP6 *	ON	ON		ON	
DP7 *	(ON)	ON		(ON)	
DP8 *	ON	ON		(ON)	

*Center position connects 2-3, 5-4

3 ACTUATOR STYLE
TJ .709" [18 mm] length **TK** .512" [13.00 mm] length

4 BUSHING
BK .386" [9.80 mm] threaded, flat

5 TERMINATION ⁷

M1 Solder Lug	M51 Wire Wrap, .750" [19.05mm] length
M2 PCB	M52 Wire Wrap, .964" [24.48mm] length
M3 Quick Connect	M53 Wire Wrap, .425" [10.80mm] length
	M54 Wire Wrap, 1.062" [25.97mm] length

6 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	5A 125VAC or 28VDC, 2A 250VAC	IP67
K	gold ^{2,5}	tin ^{4,7}	0.4VA max 20V max (AC/DC)	IP67
P	silver ^{1,6}	tin ^{4,7}	5A 125VAC or 28VDC, 2A 250VAC	IP67
Q	silver ¹	silver ¹	5A 125VAC or 28VDC, 2A 250VAC	IP67
R	gold ²	gold ³	0.4VA max 20V max (AC/DC)	IP67

7 EPOXY SEAL
E Epoxy Seal

Notes:
Switches supplied with (1) 2M1-HDW4 hex nut and (1) 3MNH-WCP-0872 O-Ring
1 Movable contact and terminal platings: silver over copper alloy
2 Movable contact and terminal platings: gold over nickel over copper alloy
3 Terminal platings: gold over nickel over copper alloy
4 Terminal platings: tin over copper alloy
5 Terminal contact platings: gold over nickel alloy
6 Terminal contact platings: silver over nickel alloy
7 Tin option not available with M1 & M3 terminations.

*Manufacturer reserves the right to change product specification without prior notice.

2MS - WSP 1 - T1 - B4 - M1 G E

1 Series 2 Poles 3 Circuit 4 Actuator Style 5 Bushing 6 Termination 7 Contacts 8 Seal

1 SERIES

2MS Sealed 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

Position:	1	2	3
	2-3, 5-6, 8-9	Connected Terminals	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 **T9** Long Black Plastic .492" length
T2 Round Short Bat **P1** Plastic Anti-Static .496" length
P2 Plastic Anti-Static .299" length

5 BUSHING

B1 Threaded, Keyway **B4** Unthreaded, Short, Keyway, Flat

6 TERMINATION

M1 ⁴ Solder Lug	VS21 Vertical, Snap-In, .460" [11.70mm]
M2 PCB	VS3 Vertical, .630" [16mm]
M3 Quick Connect	VS31 Vertical, Snap-In, .630" [16mm]
M51 Wire Wrap, .750" [19.05mm]	U2 Vertical, .551" [14mm] - only 3PDT
M52 Wire Wrap, .964" [24.48mm]	VS4 Vertical, .461" [11.70mm]
M53 Wire Wrap, .425" [10.80mm]	VS41 Vertical, Snap-In, .461" [11.70mm]
M54 Wire Wrap, 1.062" [25.97mm]	U4 Vertical, .551" [14mm] - only 3PDT
M6 Right Angle, PC Thru-Hole	VS5 Vertical, .630" [16mm]
M61 Right Angle, Snap-In	VS51 Vertical, Snap-In, .630" [16mm]
M7 Vertical, Right Angle, PC Thru-Hole	
M71 Vertical, Right Angle, Snap-In	
VS2 Vertical, .461" [11.70mm]	

7 CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
G silver ¹	gold over silver	5A 125VAC or 28VDC, 2A 250VAC	eTÜS, IP67
K gold ²	tin ^{3,4}	0.4VA max 20V max (AC/DC)	IP67
P silver ¹	tin ^{3,4}	5A 125VAC or 28VDC, 2A 250VAC	eTÜS, IP67
R gold ²	gold ²	0.4VA max 20V max (AC/DC)	IP67

8 EPOXY SEAL

E Epoxy Seal **0** without Epoxy Seal

Notes:

- B1 Bushing switches supplied with (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer and (1) 2M1-HDW15 locking ring. See page 76-77.
- 1 Movable contact & terminal platings: silver over copper alloy
- 2 Movable contact & terminal platings: gold over nickel over copper alloy
- 3 Terminal platings: tin over nickel over copper alloy
- 4 Tin option not available with M1 terminal

2M1 - SP 1 - T1 - B1 - M1 Q E

1 Series 2 Poles 3 Circuit 4 Actuator Style 5 Bushing 6 Termination 7 Contacts 8 Seal

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 & 12

3 CIRCUIT

() - momentary

Position:	1	2	3
	2-3, 5-6, 8-9, 11-12	Connected Terminals	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*	ON	ON	ON
7*	(ON)	ON	(ON)
8*	ON	ON	(ON)

*Available with DP and 4P switches only. Center position connects 2-3, 5-4, 8-9, 11-10

4 ACTUATOR STYLE

T1 Round Bat **T7** Large Bat (B0 bushing)
T2 Round Short Bat **T8** X-Large Bat (B0 bushing)
T3 Paddle **T9** Black Plastic
T4 Medium Paddle **T0** Rectangular
T5 Long Paddle **TA** Locking Lever
T6 Flat (B1,B2,B5,BA,BB,BE) **TI** Locking Lever
TL Locking Lever

5 BUSHING

B1 Threaded Standard, keyway **B8** Metric
B2 Non-Threaded Standard, keyway **B9** Splashproof
B3 Threaded Short, keyway **B0** 15/32" Threaded (Standard for T7 & T8 actuator styles)
B4 Non-Threaded Short, keyway **BA** Threaded for T6
B5 High Torque, 7.5mm, flat **BB** Non-Threaded for T6
B6 High Torque, 8.0mm, keyway **BE** Threaded Hi Torque for T6
B7 Long threaded **BL** Threaded, Locking

6 TERMINATION

M1 ⁴ Solder Lug	M71 Vertical, Right Angle, Snap-In
M2 PCB	VS2 Vertical, .461" [11.70mm]
M3 Quick Connect	VS21 Vertical, Snap-In, .461" [11.70mm]
M51 Wire Wrap, .750" [19.05mm]	VS3 Vertical, .630" [16mm]
M52 Wire Wrap, .964" [24.48mm]	VS31 Vertical, Snap-In, .630" [16mm]
M53 Wire Wrap, .425" [10.80mm]	VS4 Vertical, .461" [11.70mm]
M54 Wire Wrap, 1.062" [25.97mm]	VS41 Vertical, Snap-In, .461" [11.70mm]
M6 Right Angle, PC Thru-Hole	VS5 Vertical, .630" [16mm]
M61 Right Angle, Snap-In	VS51 Vertical, Snap-In, .630" [16mm]
M7 Vertical, Right Angle, PC Thru-Hole	

7 CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
G silver ¹	gold over silver	5A 125VAC or 28VDC, 2A 250VAC	TÜS, IP67
K gold ²	tin ^{3,4}	0.4VA max 20V max (AC/DC)	N/A
P silver ¹	tin ^{3,4}	5A 125VAC or 28VDC, 2A 250VAC	TÜS, IP67
Q silver ¹	silver ¹	5A 125VAC or 28VDC, 2A 250VAC	TÜS, IP67
R gold ²	gold ²	0.4VA max 20V max (AC/DC)	N/A

8 EPOXY SEAL

E Epoxy Seal **0** without Epoxy Seal

Notes:

- B1 Bushing switches supplied with (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer and (1) 2M1-HDW15 locking ring.
- 1 Movable contact & terminal platings: silver over copper alloy
- 2 Movable contact & terminal platings: gold over nickel over copper alloy
- 3 Terminal platings: tin over nickel over copper alloy
- 4 Tin option not available with M1 terminal

2M-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-T12 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 2M1-T12. See page 76 for dimensional specifications.

Optional Toggle Cap

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

¹ Series ² Toggle Cap Size ³ Color

1 SERIES
2M1 Fits 2M1H, 2MS or 2M1

3 CAP COLOR

1 White	5 Yellow
2 Black	6 Green
3 Red	7 Blue

2 TOGGLE CAP SIZE
T1 10.6 mm **T2** 7.6 mm

Optional Dress and Knurled Nuts

2M1 - **HDW3**

¹ Series ² Nut

1 SERIES
2M1 Fits 2M1H, 2MS or 2M1

2 NUT
HDW3 Dress nut for 1/4" bushing
HDW5 Knurled nut for 15/32" bushing (2M1-Series only)

Optional Rubber Seals

2M1 - **E1A**

¹ Series ² Rubber Boot Seal

1 SERIES
2M1 Fits 2M1H, 2MS or 2M1

2 RUBBER BOOT SEAL
E1A 1/4 - 40" UNS bushing (Not available for B0 bushing option)
K1 Metric M6 bushing (B8 bushing only)
YE1D 15/32 - 32" UNS bushing (TJ, TK and B0 bushings only)
YE1E 15/32 - 32" UNS bushing 1/2 boot (T7, T8, TJ, TK and B0 bushings only)

3MNH - **WCP-0872**

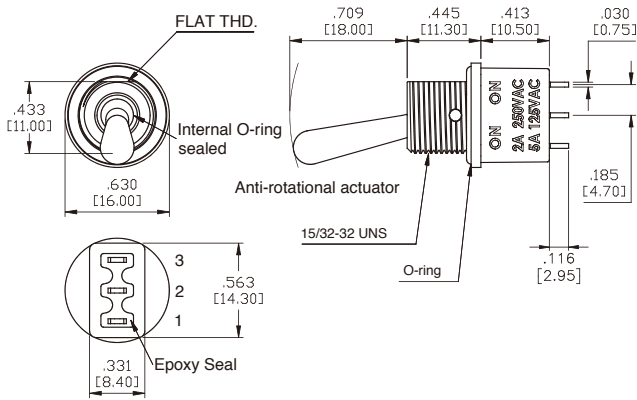
¹ Series ² Rubber O-Ring

1 SERIES
3MNH Fits 3MNH or 2M1H

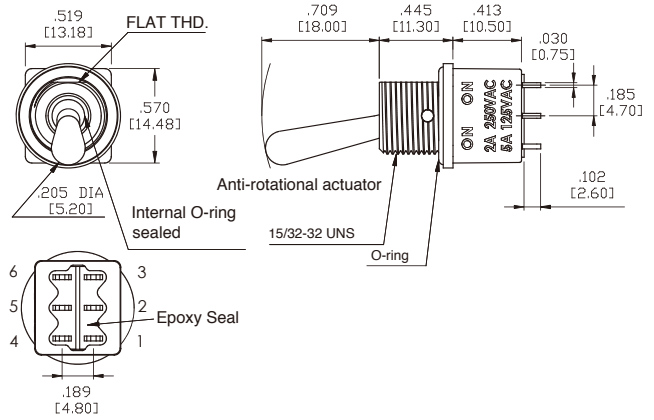
2 RUBBER O-RING
WCP-0872 For 15/32 bushing option

2M1H-Series Dimensional Specifications: in. [mm]

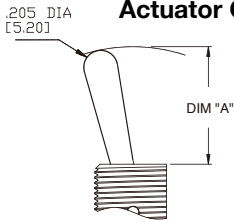
Single Pole



Double Pole

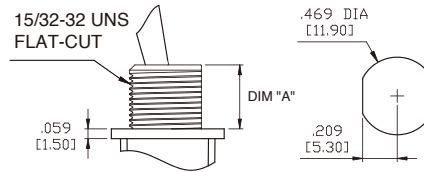


Actuator Options



OPTION CODE	DIM. "A"
TJ	.709 [18.00]
TK	.512 [13.00]

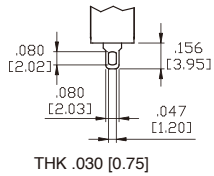
Bushing Options & Mounting



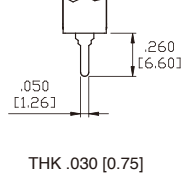
OPTION CODE	DIM. "A"
BK	.386 [9.80]

Termination Options

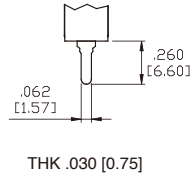
M1 Standard Solder Lug



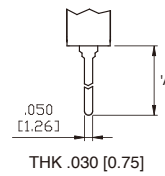
M2 PC Thru-Hole



M3 Quick Connect



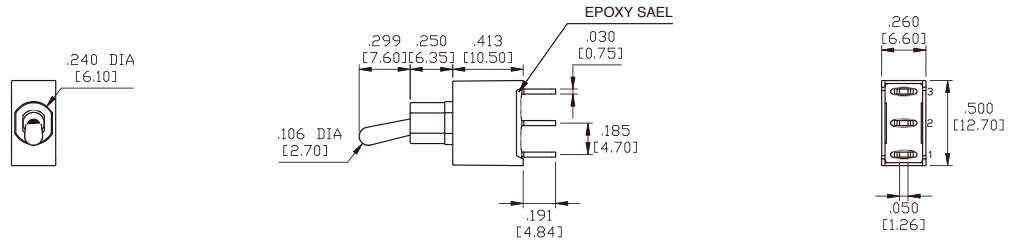
M5 Wire Wrap



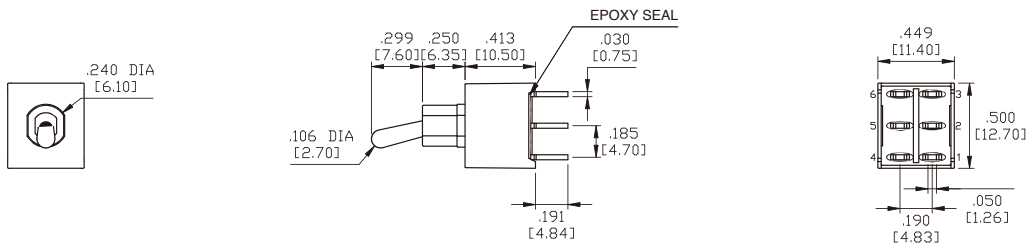
OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

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

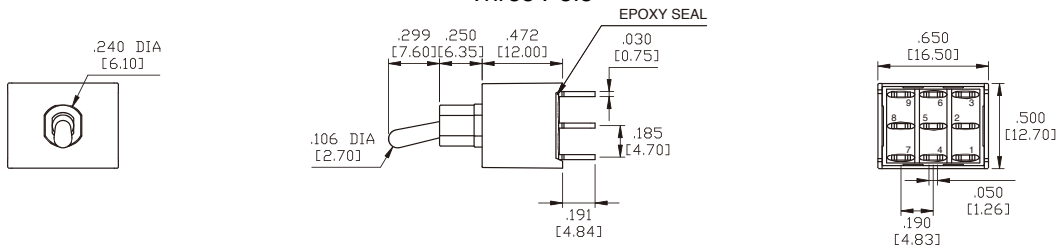
Single Pole



Double Pole

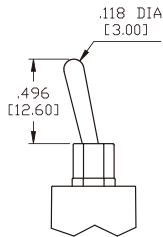


Three Pole

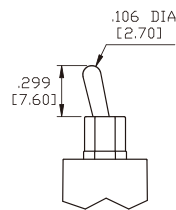


Actuator Options

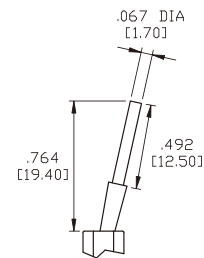
T1



T2

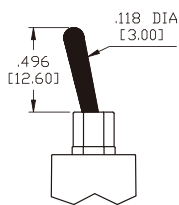


T9 with Plastic Cap

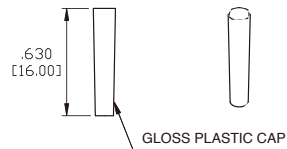
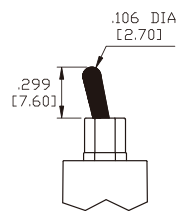


NO.	COLOR
1	White
2	Black(std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

P1 Plastic Toggle



P2 Plastic Toggle

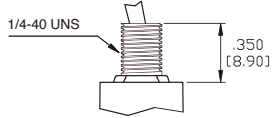


* Shown with B4 bushing. Subtract .075" (1.90 mm) from actuator height for B1 bushing.

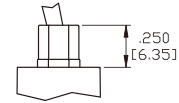
2MS-Series Dimensional Specifications: in. [mm]

Bushing Options

B1

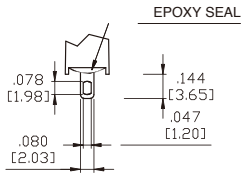


B4



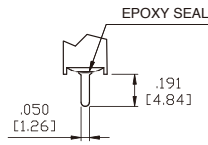
Termination Options

M1 Standard Solder Lug



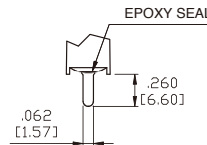
THK .030 [0.75]

M2 PC Thru-Hole



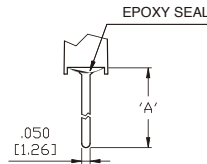
THK .030 [0.75]

M3 Quick Connect



THK .030 [0.75]

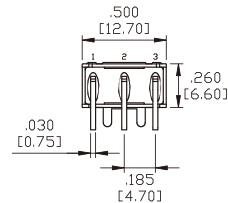
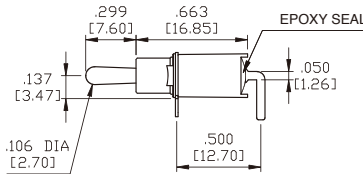
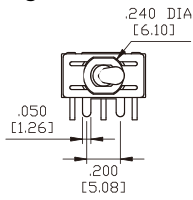
M5 Wire Wrap



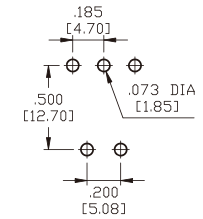
THK .030 [0.75]

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]

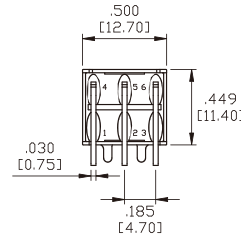
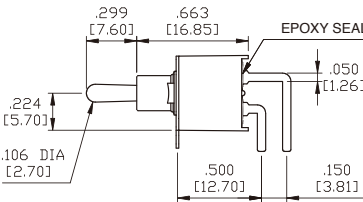
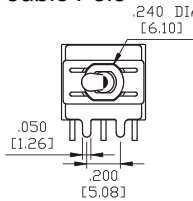
M6 Single Pole



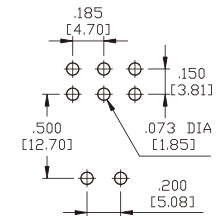
P.C.MOUNTING



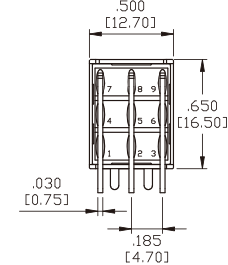
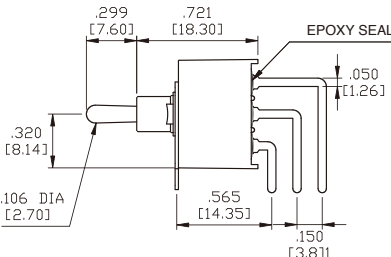
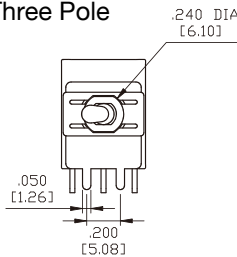
M6 Double Pole



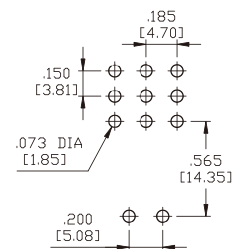
P.C.MOUNTING



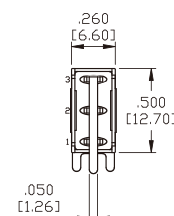
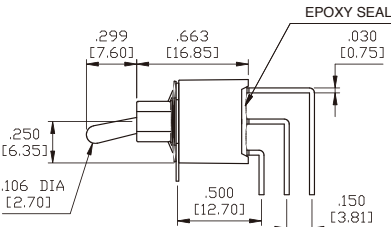
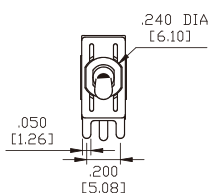
M6 Three Pole



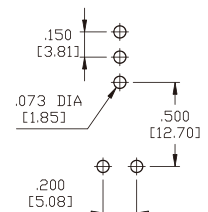
P.C.MOUNTING



M7 Single Pole



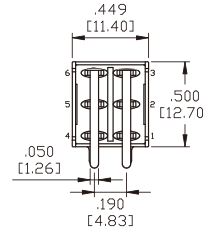
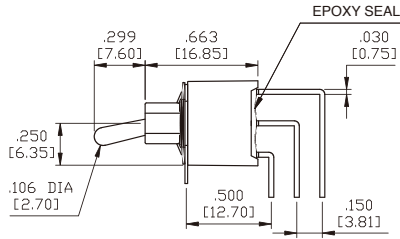
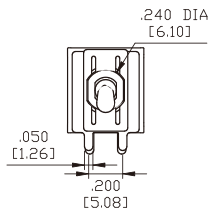
P.C.MOUNTING



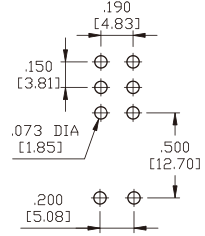
2MS-Series Dimensional Specifications: in. [mm]

Termination Options

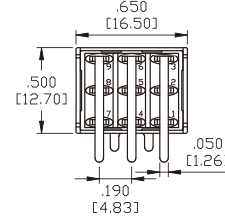
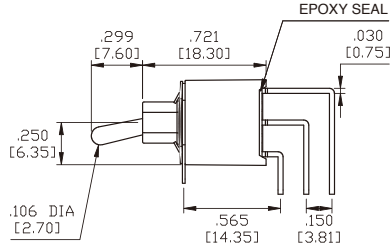
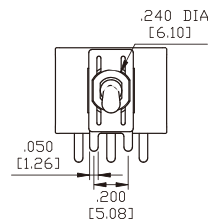
M7 Double Pole



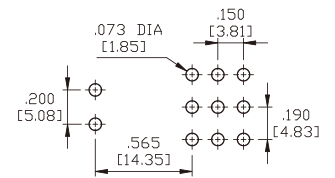
P.C.MOUNTING



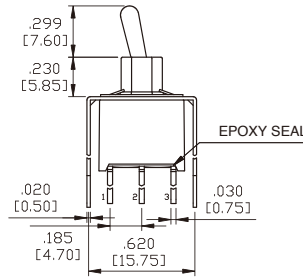
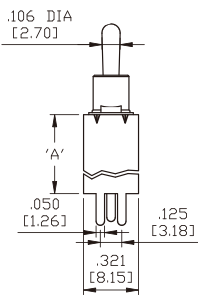
M7 Three Pole



P.C.MOUNTING

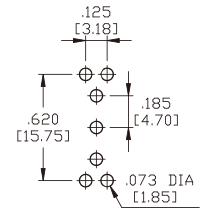


VS2-VS3 Single Pole

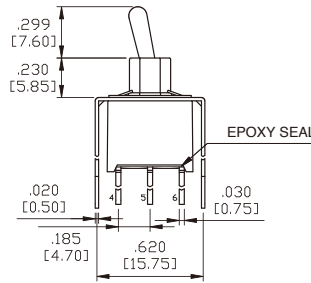
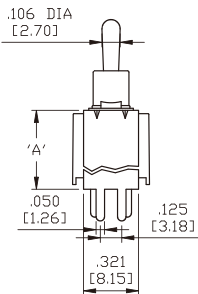


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

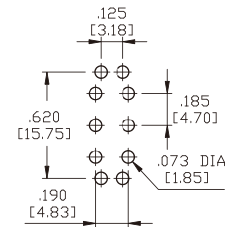


VS2-VS3 Double Pole

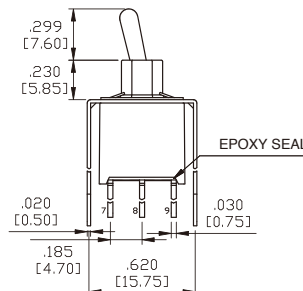
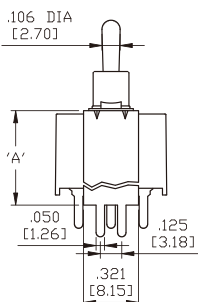


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

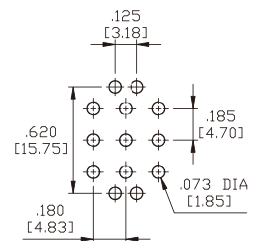


U2-VS3 Three Pole



OPTION CODE	DIM.'A'
U2	.551 [14.00]
VS3	.630 [16.00]

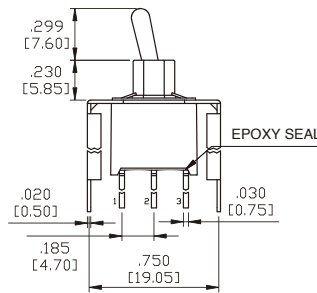
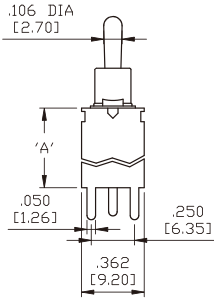
P.C.MOUNTING



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

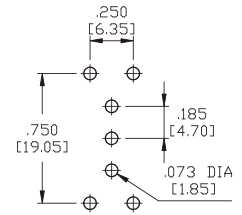
Termination Options

VS4-VS5 Single Pole

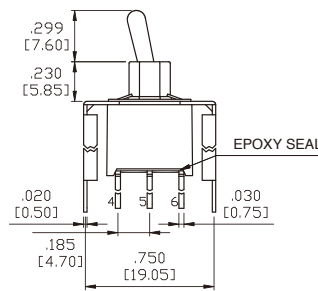
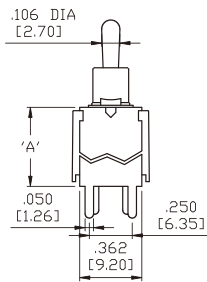


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

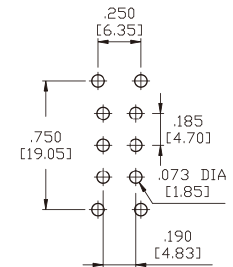


VS4-VS5 Double Pole

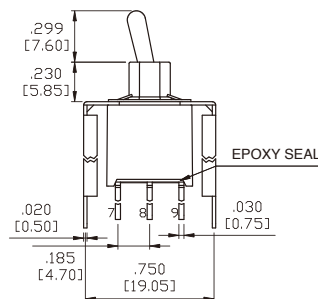
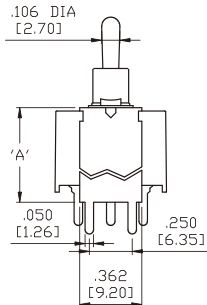


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

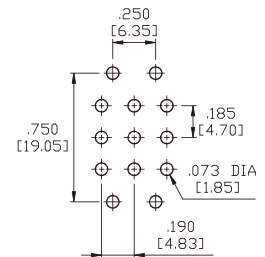


U4-VS5 Three Pole



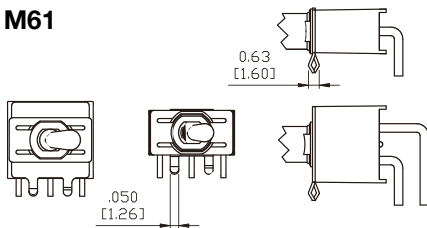
OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

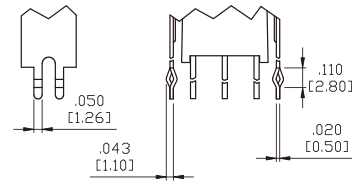


Snap-In Termination Options

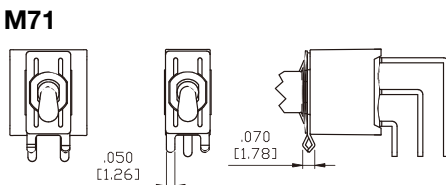
M61



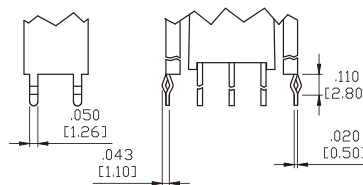
VS21, VS31



M71

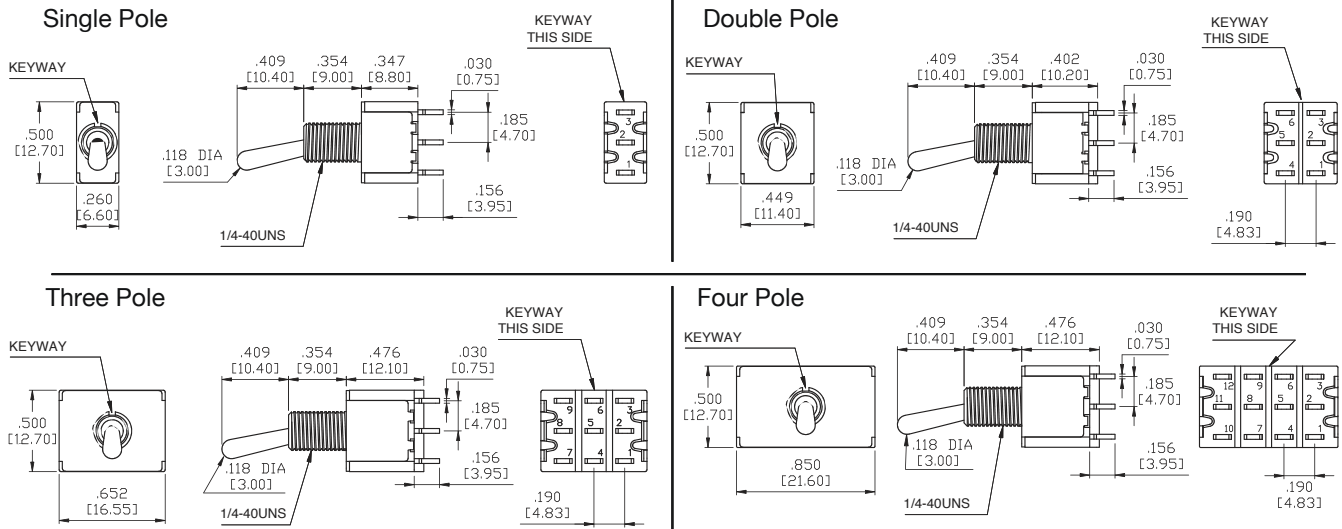


VS41, VS51

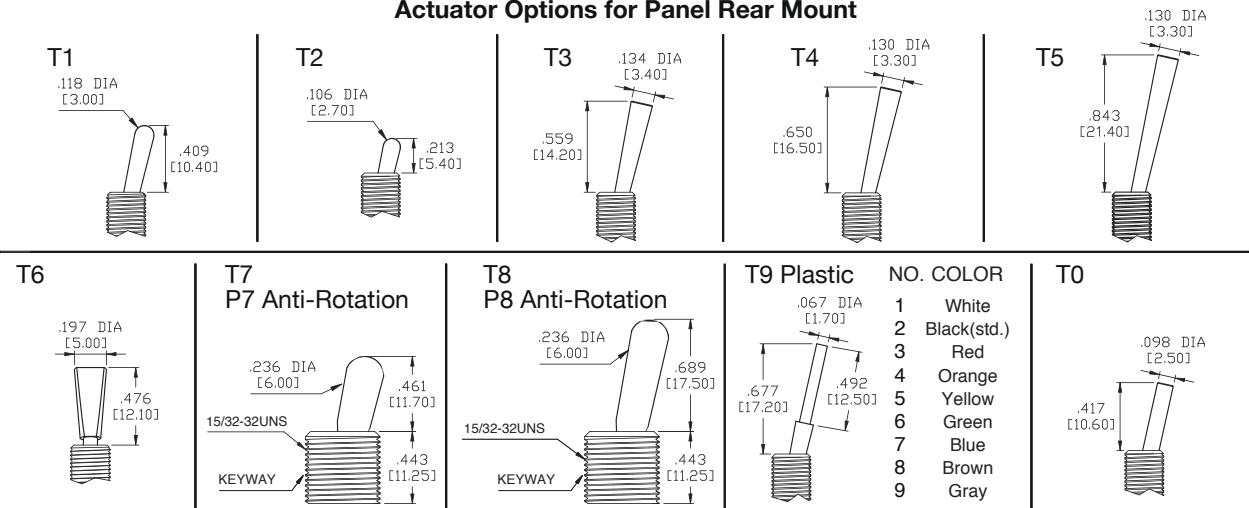


* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

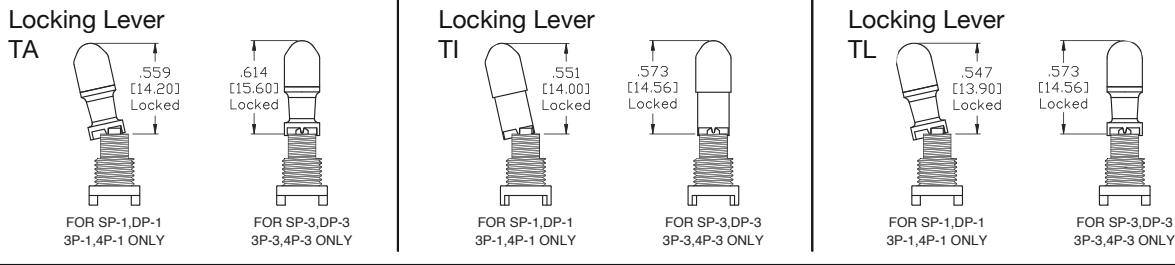
2M1-Series Dimensional Specifications: in. [mm]



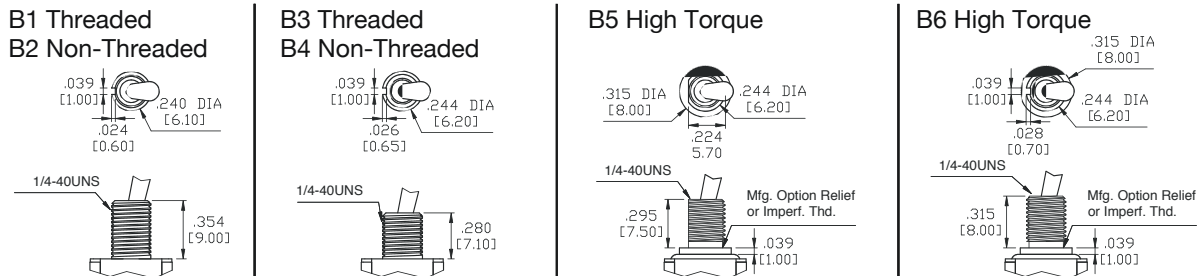
Actuator Options for Panel Rear Mount



* T6 actuator is available with B1, B2, B5, B6, BA, BB & BE bushing. Actuator length shown for T1 – T5, T9 and T10 is with B1 bushing. T7, P7, T8 & P8 does not require a bushing code.



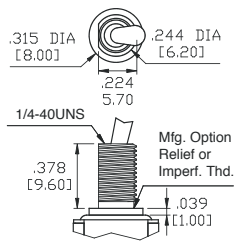
Bushing Options



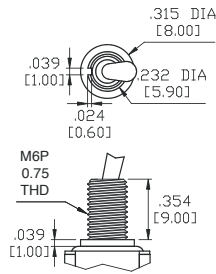
2M1-Series Dimensional Specifications: in. [mm]

Bushing Options

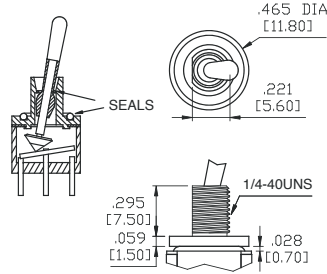
B7 Long



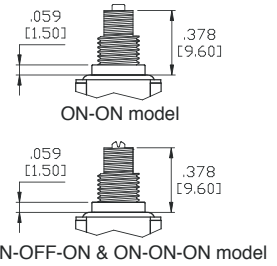
B8 Metric



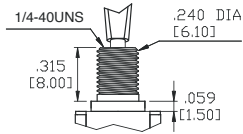
B9 Splash-Proof



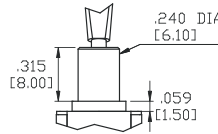
BL Locking Lever



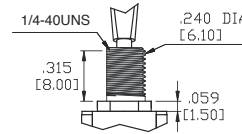
BA Threaded for T6



BB Non-Threaded for T6

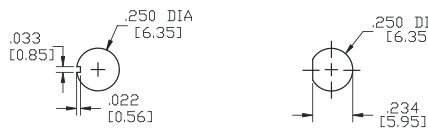


BB High Torque for T6

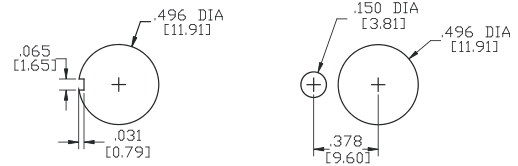


Panel Mounting

1/4 INCH BUSHING

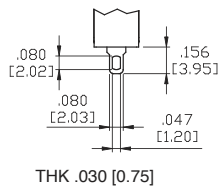


15/32 INCH BUSHING

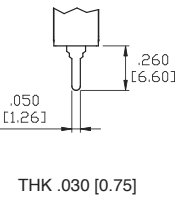


Termination Options

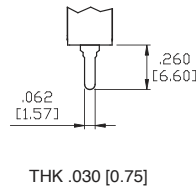
M1 Standard Solder Lug



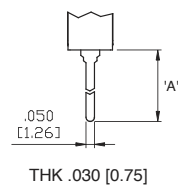
M2 PC Thru-Hole



M3 Quick Connect

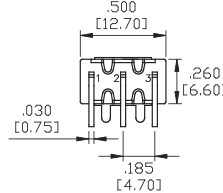
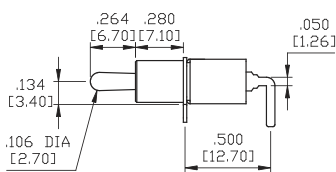
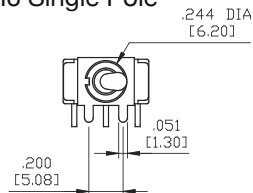


M5 Wire Wrap

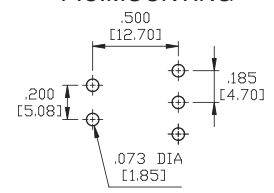


OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

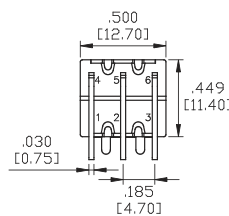
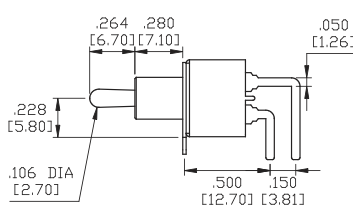
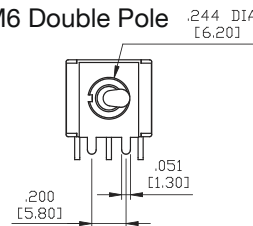
M6 Single Pole



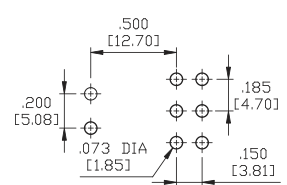
P.C. MOUNTING



M6 Double Pole



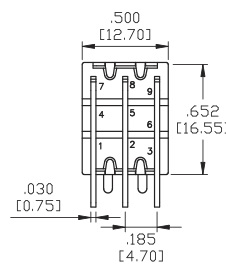
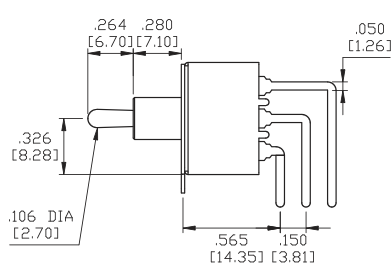
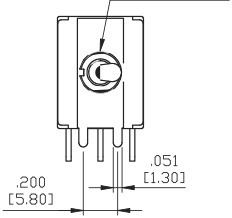
P.C. MOUNTING



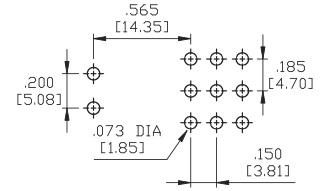
2M1-Series Dimensional Specifications: in. [mm]

Termination Options

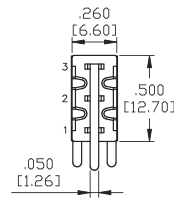
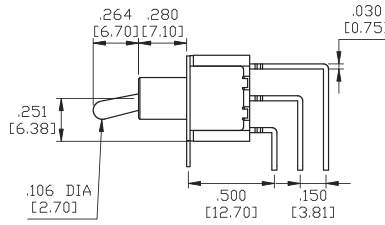
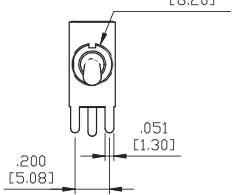
M6 Three Pole .244 DIA [6.20]



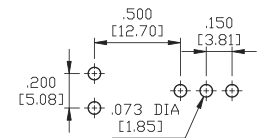
P.C.MOUNTING



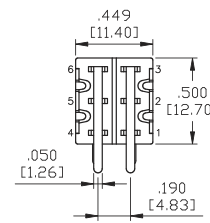
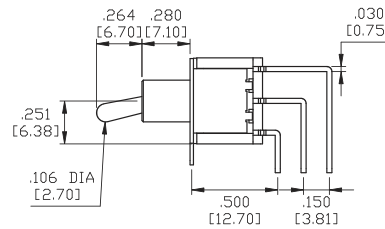
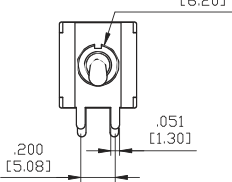
M7 Single Pole .244 DIA [6.20]



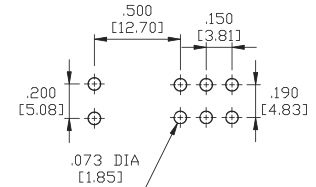
P.C.MOUNTING



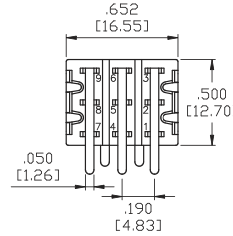
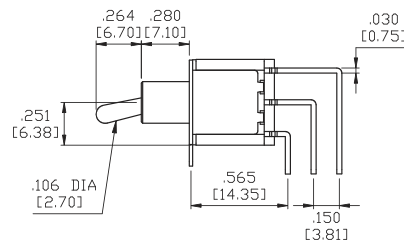
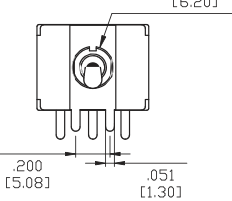
M7 Double Pole .244 DIA [6.20]



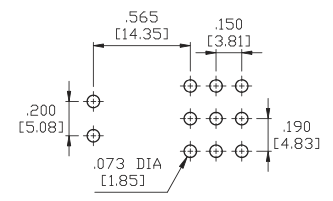
P.C.MOUNTING



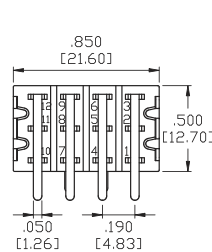
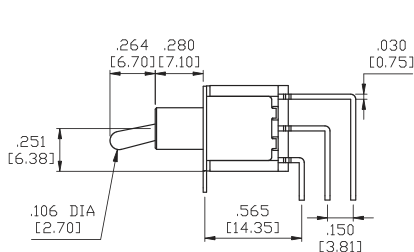
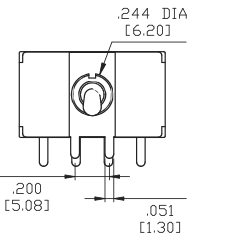
M7 Three Pole .244 DIA [6.20]



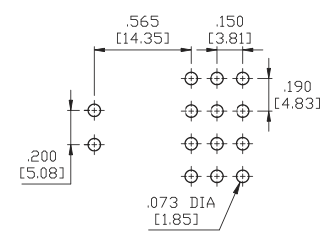
P.C.MOUNTING



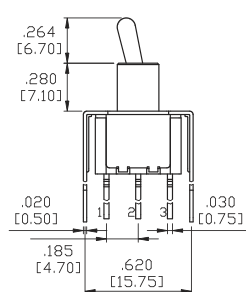
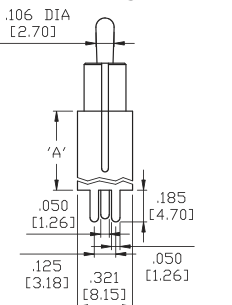
M7 Four Pole .244 DIA [6.20]



P.C.MOUNTING

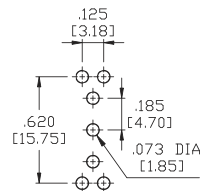


VS2-VS3 Single Pole



OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

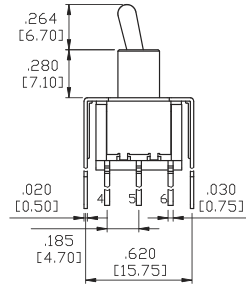
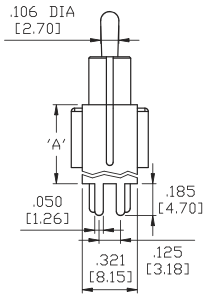
P.C.MOUNTING



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

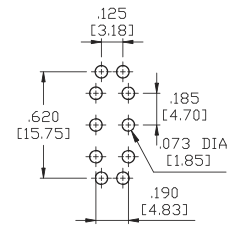
Termination Options

VS2-VS3 Double Pole

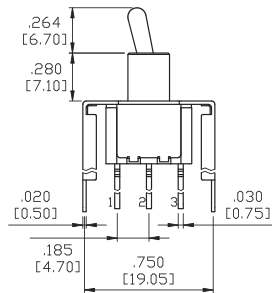
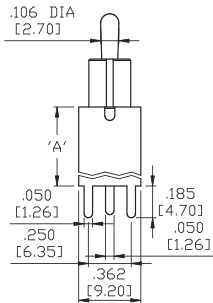


OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

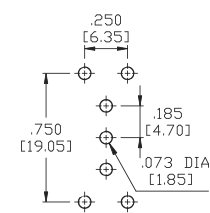


VS4-VS5 Single Pole

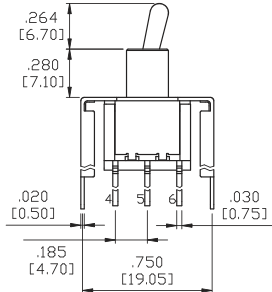
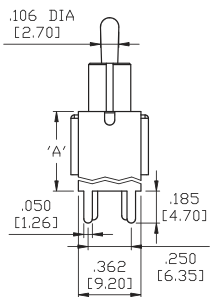


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

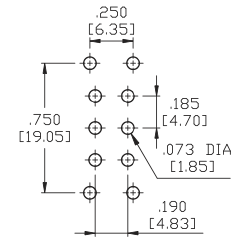


VS4-VS5 Double Pole



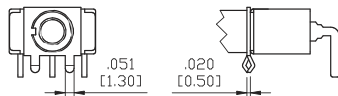
OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

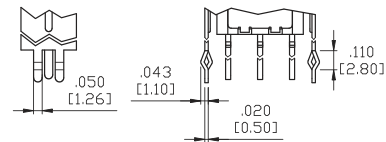


Snap-In Termination Options

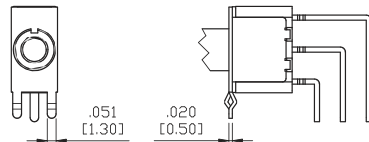
M61 (available with SP & DP)



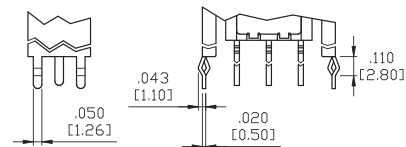
VS21, VS31



M71 (available with SP & DP)



VS41, VS51



* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

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France: sas@carlingtech.com



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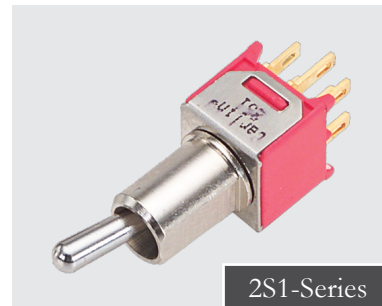
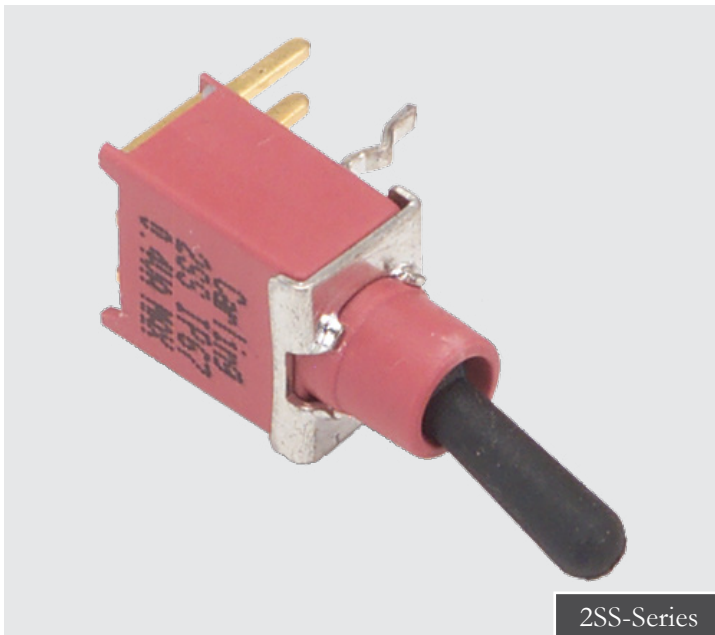
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2SS/2S1/2SM

2S-Series

SUB-MINIATURE TOGGLES

The 2S family of sub-miniature toggle switches is composed of three switch series; the **2S1-Series** toggle switch, the **2SS-Series** sealed toggle switch, and the **2SM-Series** surface mount sealed sub-miniature toggle switch. All of these series offer a variety of ratings, circuits, contact materials, terminal platings, and actuator types.



Product Highlights:

- IP67 Sealing
- 6 Actuator Options
- Surface, Thru Hole or Snap-in Mounting
- Dry-Circuit thru 3A 125VAC Ratings
- UL, CSA Approvals

Typical Applications:

- Telecommunications
- Instrumentation
- Networking
- Medical Equipment

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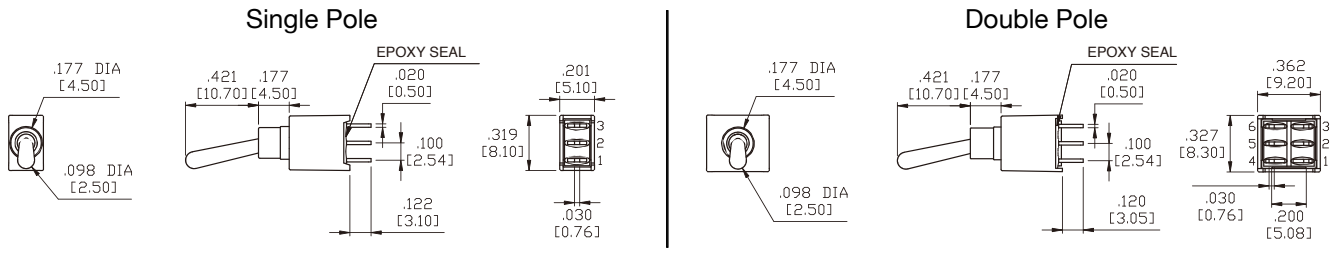
Email: sales@carlingtech.com

Application Support: team2@carlingtech.com

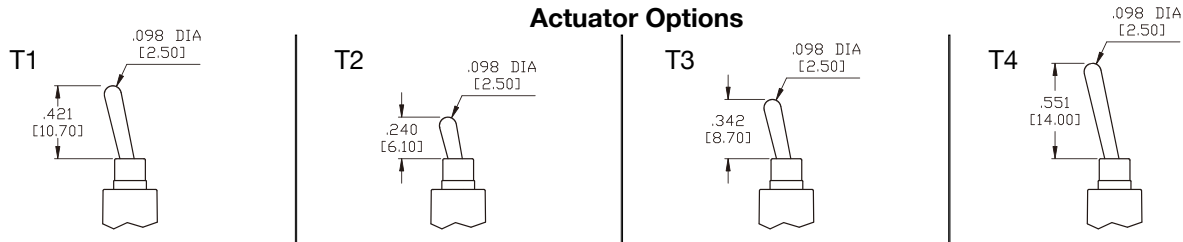
Phone: 860.793.9281 Fax: 860.793.9231

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

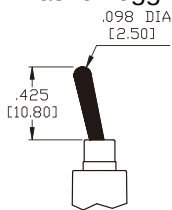


Actuator Options

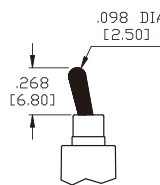


* B4 bushing shown. Subtract 2.55mm from toggle length for B1 bushing.

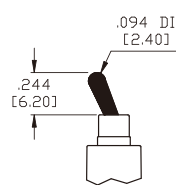
P1 Plastic Toggle



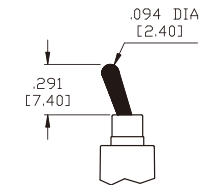
P2 Plastic Toggle



P3 Plastic Toggle



P4 Plastic Toggle



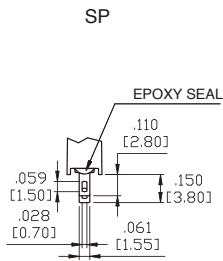
Bushing Options



* Subtract 2.55mm from toggle length for B1 bushing.

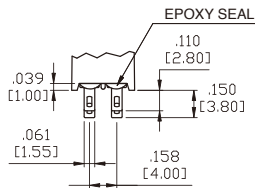
Termination Options

M1 STD. Solder Lug



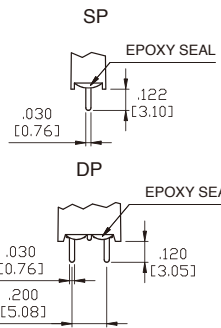
THK .020 [0.50]

DP

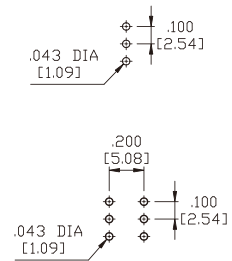


THK .020 [0.50]

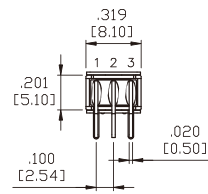
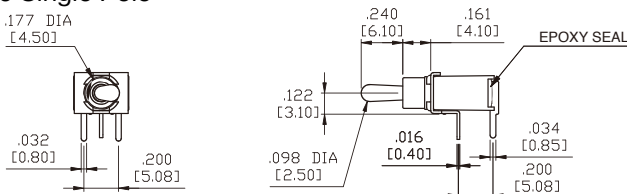
M2 PC Thru-Hole



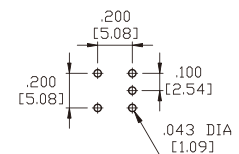
P.C.MOUNTING



M6 Single Pole



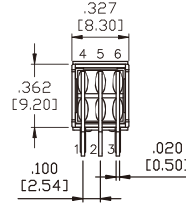
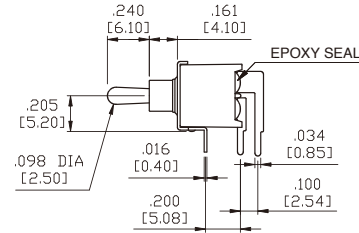
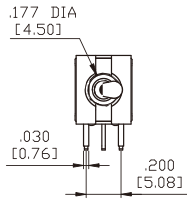
P.C.MOUNTING



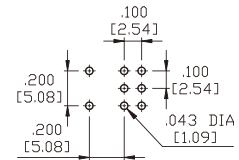
2SS-Series Dimensional Specifications: in. [mm]

Termination Options

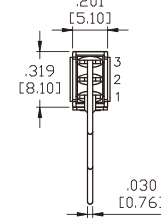
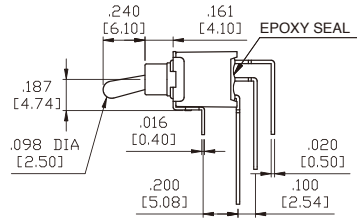
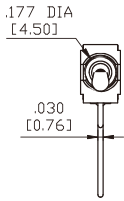
M6 Double Pole



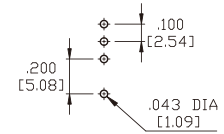
P.C.MOUNTING



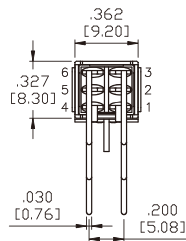
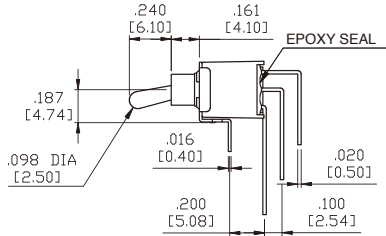
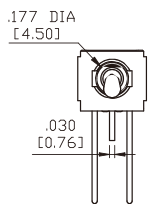
M7 Single Pole



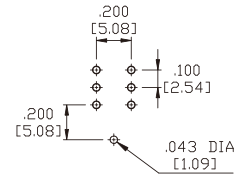
P.C.MOUNTING



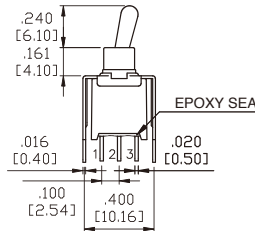
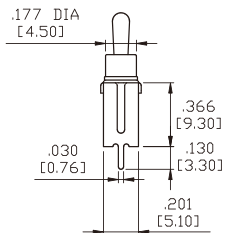
M7 Double Pole



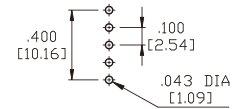
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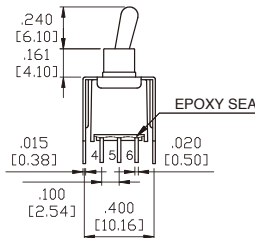
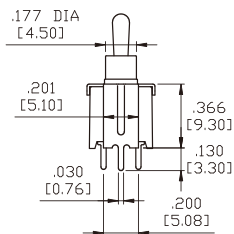
VS2 Single Pole



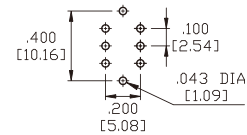
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VS2 Double Pole

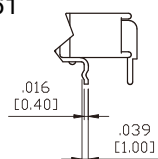


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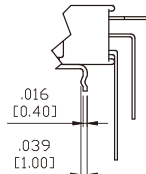


Snap-In Termination Options

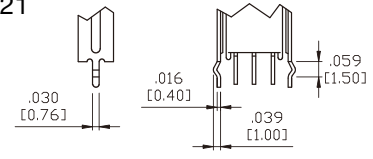
M61



M71

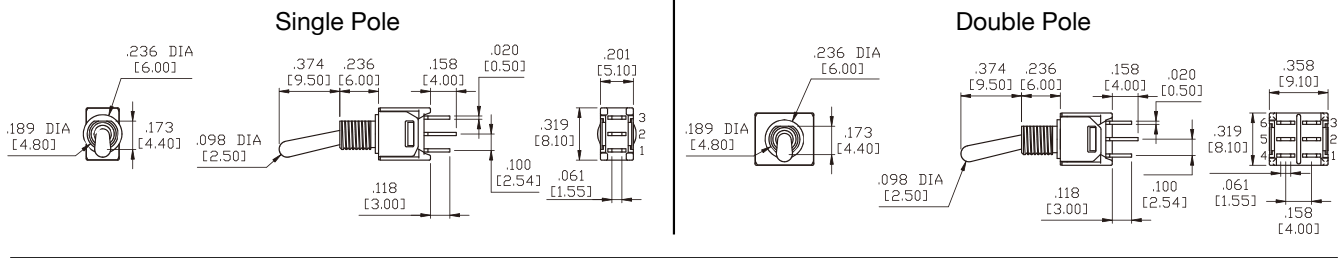


VS21

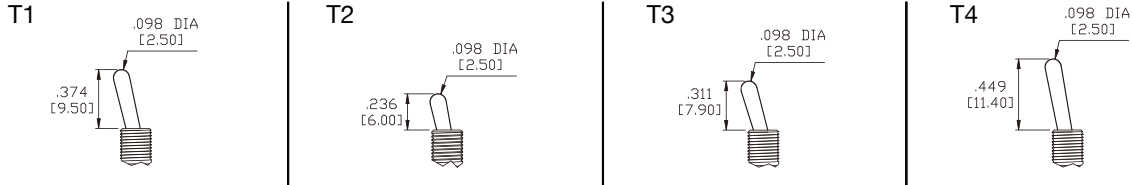


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

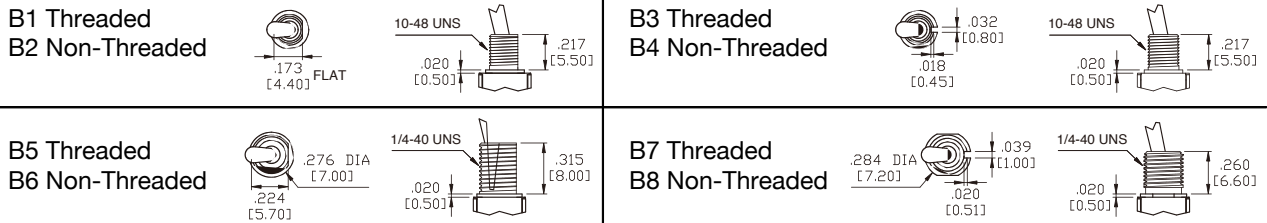
2S1-Series Dimensional Specifications: in. [mm]



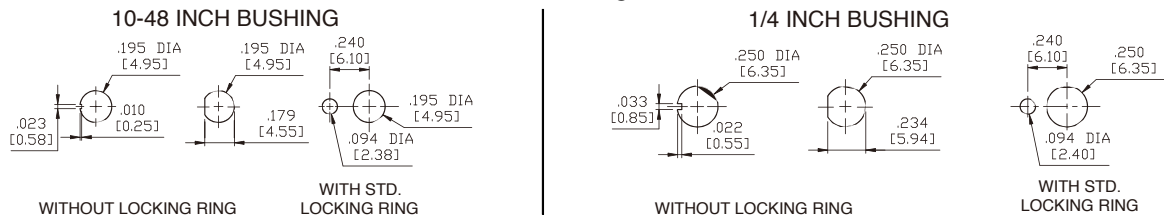
Actuator Options



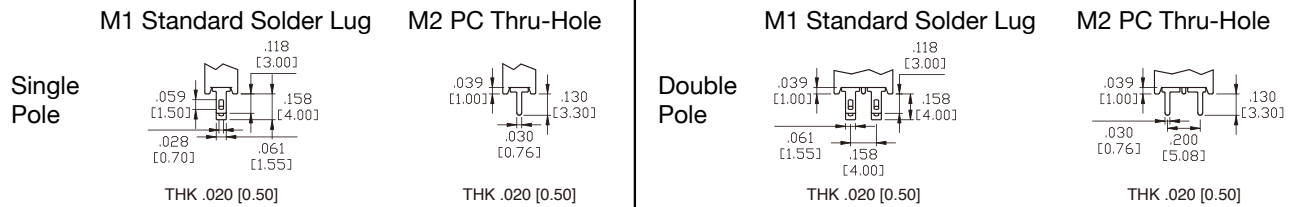
Bushing Options



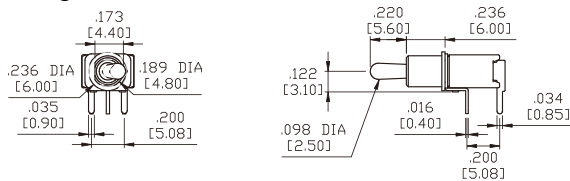
Panel Mounting



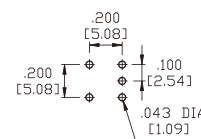
Termination Options



M6 Single Pole



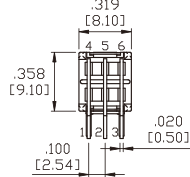
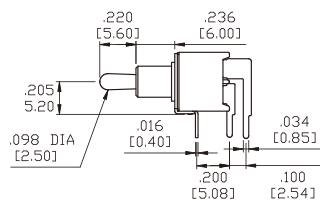
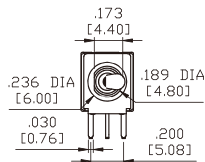
P.C. MOUNTING



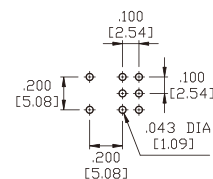
2S1-Series Dimensional Specifications: in. [mm]

Termination Options

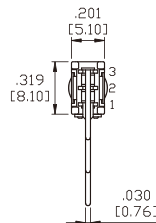
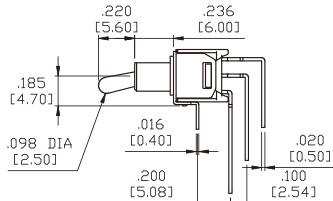
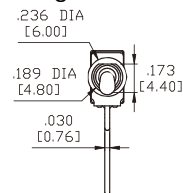
M6 Double Pole



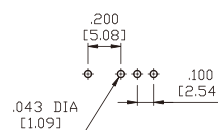
P.C.MOUNTING



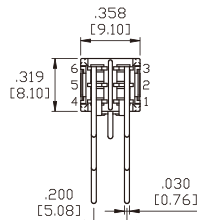
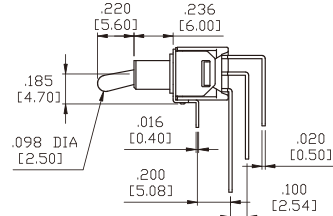
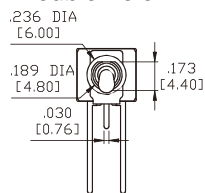
M7 Single Pole



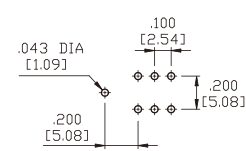
P.C.MOUNTING



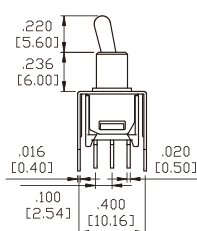
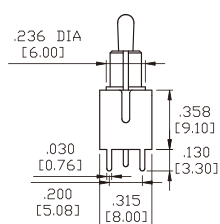
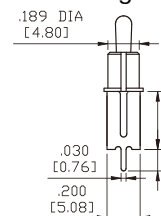
M7 Double Pole



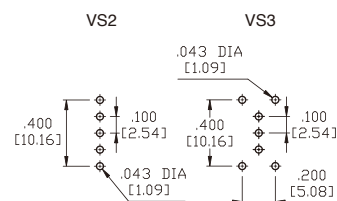
P.C.MOUNTING



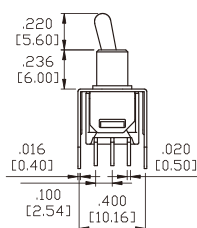
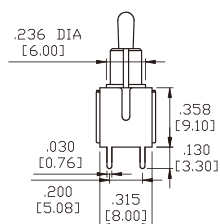
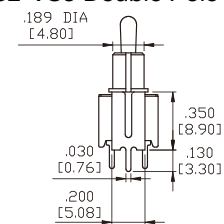
VS2-VS3 Single Pole



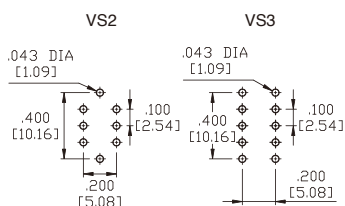
P.C.MOUNTING



VS2-VS3 Double Pole

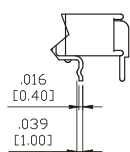


P.C.MOUNTING

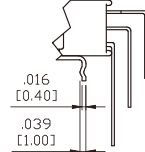


Snap-In Termination Options

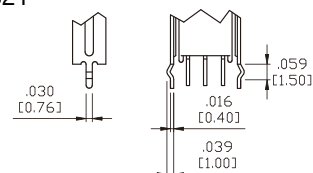
M61



M71



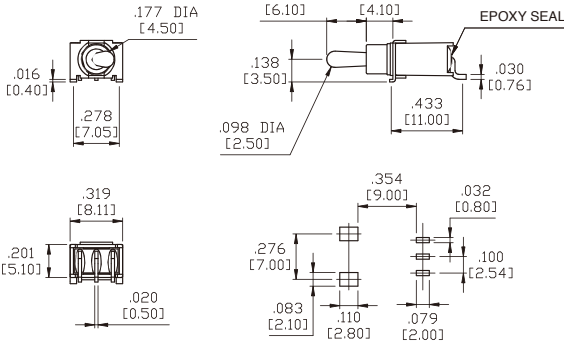
VS21



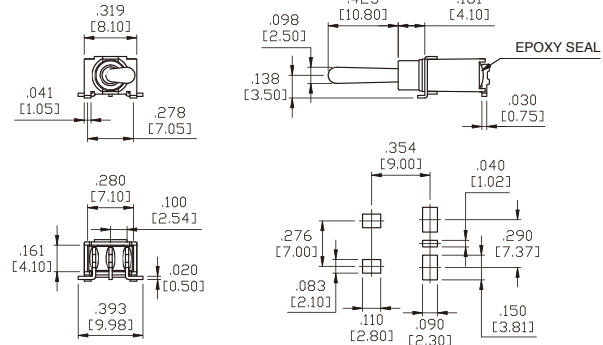
* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

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

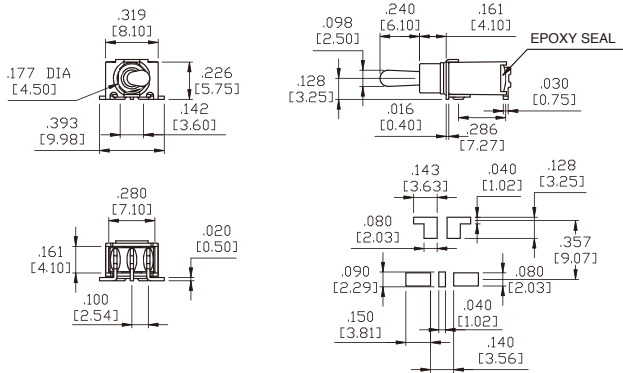
K6 Single Pole



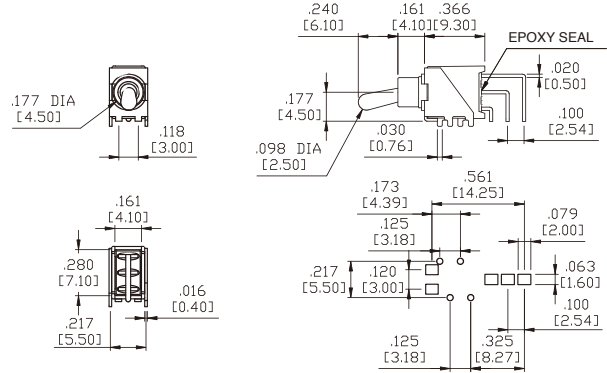
L6 Single Pole



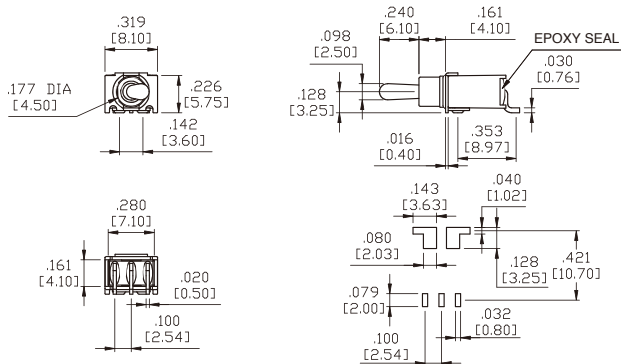
M6 Single Pole



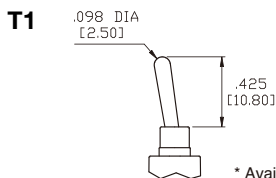
M7 Single Pole



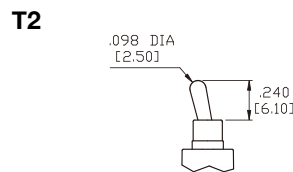
S6 Single Pole



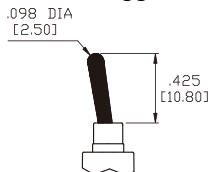
Actuator Options



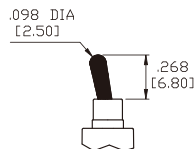
* Available with L6, S6, K6, M7 terminals only.



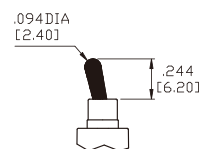
P1 Plastic Toggle



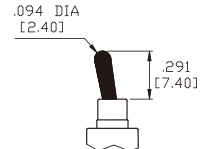
P2 Plastic Toggle



P3 Plastic Toggle



P4 Plastic Toggle



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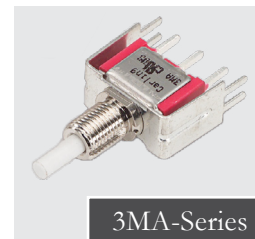
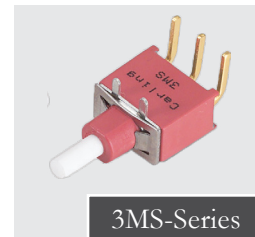
Innovative Designs. Powerful Solutions.

3MS/3MN/3MA

3M-Series

MINIATURE PUSHBUTTONS

The 3M family of miniature pushbutton switches is composed of four switch series; the **3MNH-Series** premium sealed snap-action pushbutton, the **3MN-Series** snap-action pushbutton, the **3MS-Series** sealed snap-action pushbutton, and the **3MA-Series** alternate-action pushbutton. These PC mount pushbutton switches offer a variety of ratings, circuits, contact materials, terminal platings, pushbutton styles, and optional color caps.



Product Highlights:

- IP67 Sealing
- Snap Action Contact Mechanism
- Variety of Plunger and Bushing Lengths
- Up to 14 Termination Choices
- UL and cUL Approvals
- Sleek Black Finish

Typical Applications:

- Telecommunications
- Performance Audio
- Networking
- Computers
- Instrumentation
- Low Power On/Off Designs

Resources:

[Configure a Complete Part](#)

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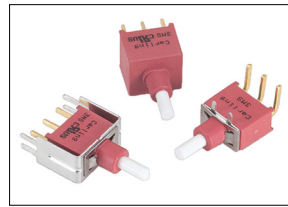
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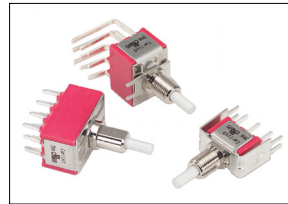
3MNH-Series
Premium Sealed
Miniature Pushbutton Switch



3MS-Series
Sealed Snap-Action
Miniature Pushbutton Switch



3MN-Series
Snap-Action
Miniature Pushbutton Switch



3MA-Series
Alternate Action
Miniature Pushbutton Switch

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	50,000 make & break cycles @ full load
Contact Resistance	3MS-Series: 50 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts. 3MN, 3MA & 3NMH-Series: 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

Physical

Operating Temperature	-30°C to +85°C
Index of Protection	3MS-Series: IP68 3MNH-Series: IP67
Cap Installation Support	3MS-Series: 10 lbs. max.
Solder Heat Resistance	MIL-STD-202, Method 210

Material

Case	3MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL94V-0) 3MN, 3MA & 3NMH-Series: Diallyl phthalate (DAP) (UL 94V-0)
Plunger	3MS & 3MA-Series: Glass filled nylon or glass filled polyester (UL94V-0) 3MN-Series: Thermoplastic polyester, black 3NMH-Series: Brass, black finish with o-ring seal
Bushing	3MN-Series: Brass, nickel plated 3MA-Series: Zinc, nickel plated 3NMH-Series: Brass, black finish with o-ring seal
Housing	3MN & 3MA-Series: Stainless Steel
Switch Support Retainer	3MS-Series: Stainless Steel
Terminal Seal	Epoxy

*Manufacturer reserves the right to change product specification without prior notice.

3MNH - **DP** **1** - **PJ** - **BJ** - **M2** - **Q** **E**

1 Series 2 Pole 3 Circuit 4 Plunger 5 Bushing 6 Termination 7 Contacts 8 Seal

1 SERIES

3MNH Premium Sealed Miniature Pushbutton Switch

2 POLES

SP Single pole - uses terminals 1, 2 & 3
DP Double pole - uses terminals 1, 2, 3, 4, 5 & 6

3 CIRCUIT

() - momentary

Switching Position:	1	2
1	ON	ON
7	ON	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 PLUNGER 1

PJ .325 height [8.25 mm]
PA .157 height [4.00 mm]
PB .354 height [9.00 mm]



5 BUSHING 2

BJ³ Threaded 15/32, flat, .553 height [14.05 mm]
BL⁴ Threaded 15/32, flat, .295 height [7.49 mm]

6 TERMINATION

M1 Solder Lug
M2 PC thru-hole
M51 Wire wrap, .711" [18.05 mm]
M52 Wire wrap, .924" [23.48 mm]
M53 Wire wrap, .386" [9.80 mm]

7 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ⁵	gold over silver	(SP1, DP1) 6A@125VAC or 28VDC 3A@250VAC (SP7, DP7) 1A@120VAC or 38VDC	 us, IP67
Q	silver ⁵	silver ⁵	(SP1, DP1) 6A@125VAC or 28VDC 3A@250VAC (SP7, DP7) 1A@120VAC or 38VDC	 us, IP67
R	gold ⁶	gold ⁷	0.4VA max @ 20V max (AC/DC)	N/A

8 EPOXY SEAL

E Epoxy Seal

Notes:

- 1 PJ Plunger for maintained circuits only. PA and PB Plunger for momentary circuits only
- 2 Hardware includes (1) 2M1-HDW4 nut and (1) 3MNH-WCP-0872 o-ring
- 3 BJ Bushing only available with PJ Plunger
- 4 BL Bushing only available with PA or PB Plunger
- 5 Movable contact & terminal platings: silver over copper alloy
- 6 Movable Contact platings: gold over nickel over copper alloy
- 7 Terminal platings: gold over nickel over copper alloy

3MS - **WSP** **7** - **P1** - **B1** - **M6** **Q** **E**

1 Series 2 Pole 3 Circuit 4 Actuator Style 5 Bushing 6 Termination 7 Contacts 8 Seal

1 SERIES

3MS Sealed Snap-Action Miniature Pushbutton Switch

2 POLES

WSP Single pole - uses terminals 1, 2 & 3
WDP Double pole - uses terminals 1, 2, 3, 4, 5 & 6

3 CIRCUIT

() - momentary

Switching Position:	1	2
7	2-3, 5-6 ON	2-1, 5-4 (ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 ACTUATOR STYLE

P1 Standard Plunger
P2 Long Plunger
P3 Short Plunger



5 BUSHING

B1¹ Threaded, with keyway, .350 height [8.89 mm]
B4 Unthreaded, flatted, .250 height [6.35 mm]

6 TERMINATION

M1 Solder Lug
M2 PCB
M6 PC Mount, 90° horizontal
M61 Snap-In, 90° horizontal
M7 PC Mount, 90° vertical
M71 Snap-In, 90° vertical
VS2 PC Mount, U bracket, .620" mounting x .461" height
VS21 Snap-In, U bracket, .620" mounting x .461" height
VS3 PC Mount, U bracket, .620" mounting x .630" height
VS31 Snap-In, vertical, .630" height
VS4 PC Mount, U bracket, .750" mounting x .461" height
VS41 Snap-In, vertical, .461 height
VS5 PC Mount, U bracket, .750" mounting x .630" height
VS51 Snap-In, vertical, .630" height

7 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ³	gold over silver	1A 120VAC or 38VDC	 us, IP68
Q	silver ³	silver ³	1A 120VAC or 38VDC	 us, IP68
R	gold ²	gold ²	0.4VA max 20V max (AC/DC)	IP68

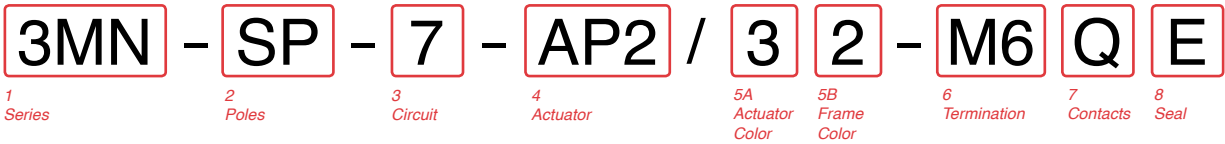
8 EPOXY SEAL

E Epoxy Seal **0** without Epoxy Seal

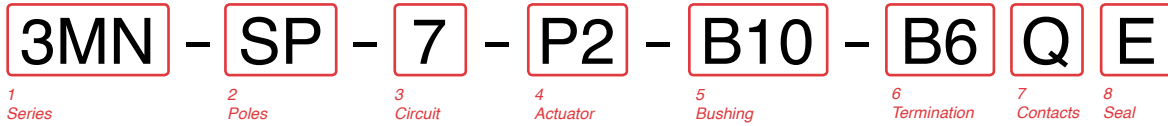
Notes:

- 1 Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
- 2 Movable contact and terminal platings: gold over nickel over copper alloy
- 3 Movable contact and terminal platings: silver over copper alloy

3MN-Series with Square Actuator



3MN-Series with Plunger Actuator



1 SERIES

3MN Snap-Action Miniature Pushbutton Switch

2 POLES

SP Single pole - uses terminals 1, 2 & 3
DP Double pole - uses terminals 1, 2, 3, 4, 5 & 6

3 CIRCUIT

() - momentary

Switching Position:	1	2
	2-3, 5-6	2-1, 5-4
7	ON	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 ACTUATOR

Square Actuator (use with Color Options in Selection 5A & 5B)

AP1 Square with no frame
AP2 Square raised above frame
AP3 Square flush with frame

Plunger Actuator (use with Bushing Options in Selection 5)

P0 Flush Plunger
P1 Standard Plunger
P2 Short Plunger

5A ACTUATOR COLOR & 5B FRAME COLOR ^{3,4}

1 White
2 Black
3 Red

OR

5B BUSHING

B6 Unthreaded (for terminations VS6-VS9 only)
B10¹ Threaded keyway
B11² Threaded with flat
B20 Unthreaded keyway
B21 Unthreaded with flat

6 TERMINATION

M1 Solder Lug
M2 PCB
M51 Wire Wrap .750 [19.05]
M52 Wire Wrap .964 [24.40]
M53 Wire Wrap .425 [10.80]
M6 PC Mount, 90° horizontal
M7 PC Mount, 90° vertical
VS2 PC Mount, U bracket, .620" mounting x .461" height
VS3 PC Mount, U bracket, .620" mounting x .630" height
VS4 PC Mount, U bracket, .750" mounting x .461 height
VS5 PC Mount, U bracket, .750" mounting x .630" height
VS6 PC Mount, U bracket, .461 height (for B6 bushing only)
VS7 PC Mount, U bracket, .630 height (for B6 bushing only)
VS8 PC Mount, U bracket, .461 height (for B6 bushing only)
VS9 PC Mount, U bracket, .630 height (for B6 bushing only)

7 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver	gold over silver	1A 125VAC or 28VDC	
Q	silver ⁵	silver ⁵	1A 125VAC or 28VDC	
R	gold ⁶	gold ⁶	0.4VA max 20V max (AC/DC)	

8 EPOXY SEAL

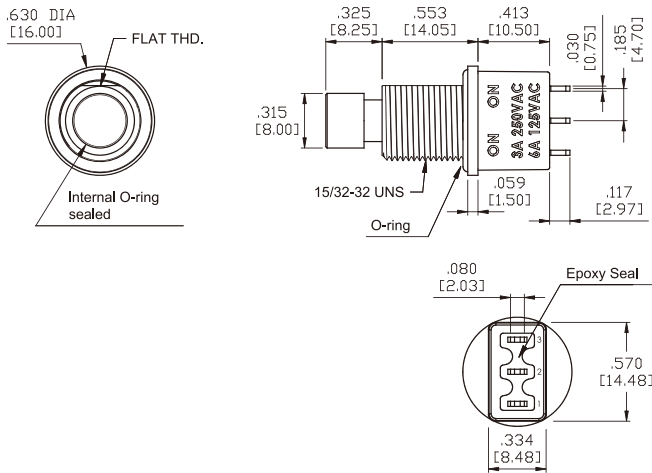
E Epoxy Seal **0** without Epoxy Seal

Notes:

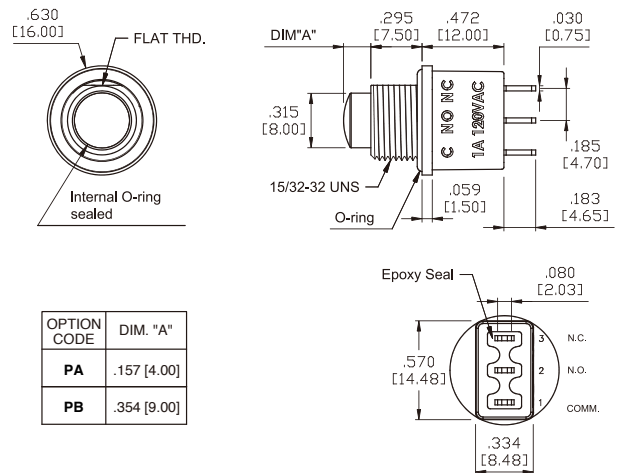
- Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
- Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 locking ring
- Selection 5B is blank if actuator style is AP1 (no frame)
- Black, white and red are standard. Other colors available, consult factory for details.
- Movable contact & terminal platings: silver over copper alloy
- Movable contact & terminal platings: gold over nickel over copper alloy

3MNH-Series Dimensional Specifications: in. [mm]

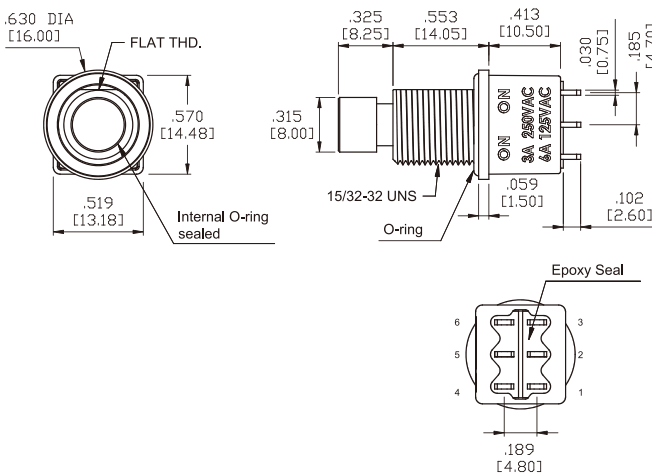
Single Pole Maintained Circuit



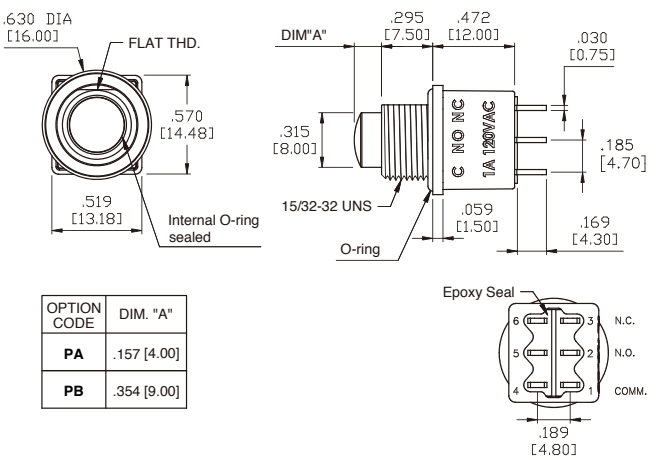
Single Pole Momentary Circuit



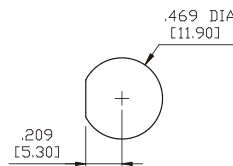
Double Pole Maintained Circuit



Double Pole Momentary Circuit

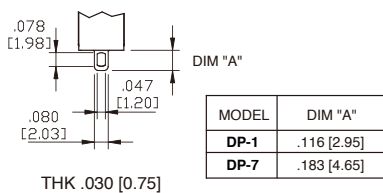


Panel Mounting



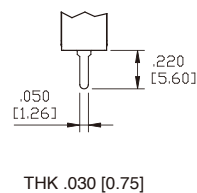
15/32-32 UNS FLAT-CUT THREADED BUSHING

M1 Standard Solder Lug

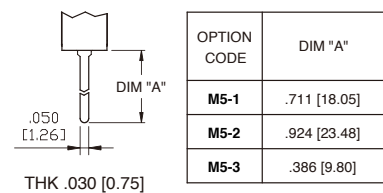


Termination Options

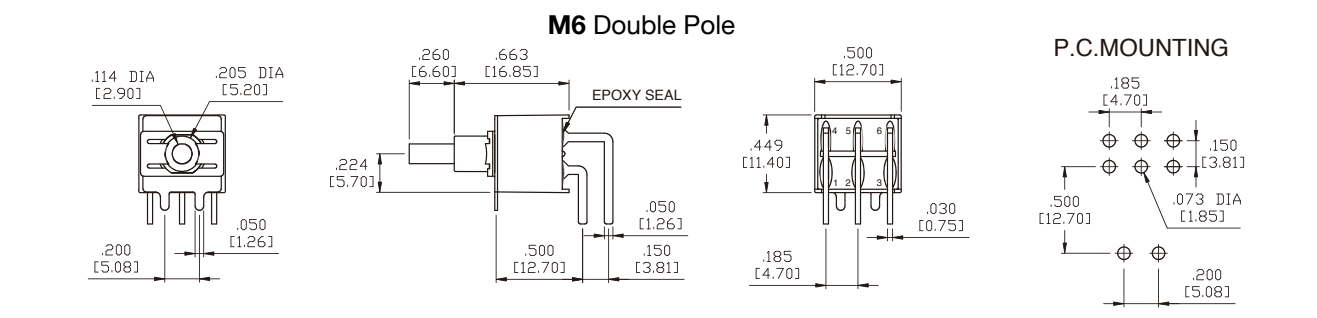
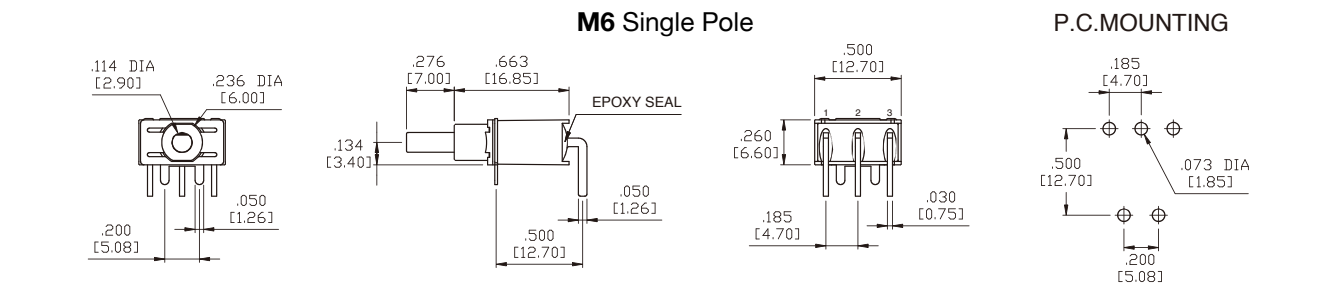
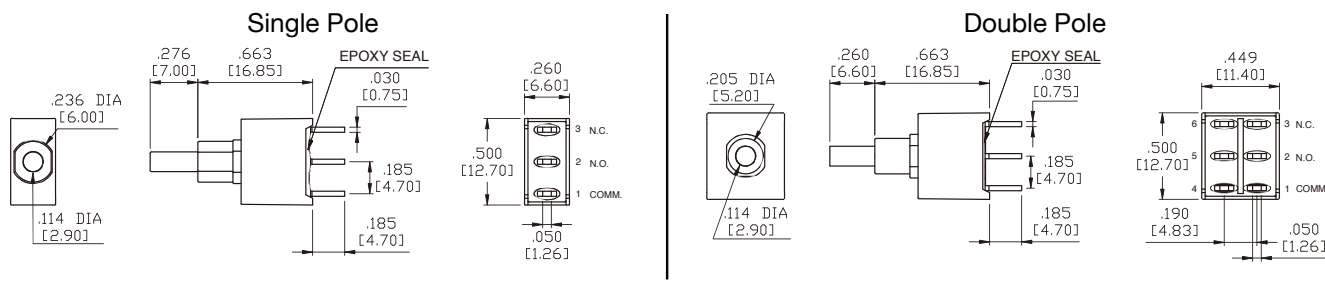
M2 PC Thru-Hole



M5 Wire Wrap

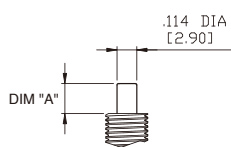


3MS-Series Dimensional Specifications: in. [mm]



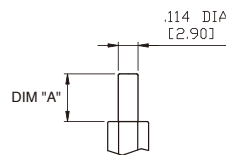
Plunger Options

For B1 Bushing



OPTION CODE	DIM. "A"
P1	.181 [4.60]
P2	.228 [5.80]
P3	.087 [2.20]

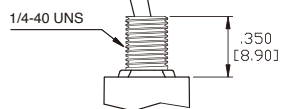
For B4 Bushing



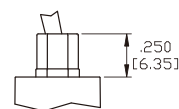
OPTION CODE	DIM. "A"
P1	.276 [7.00]
P2	.323 [8.20]
P3	.181 [4.60]

Bushing Options

B1



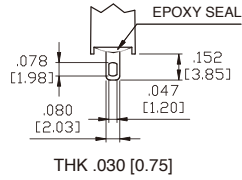
B4



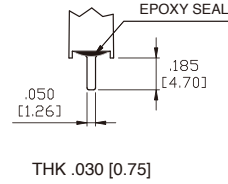
3MS-Series Dimensional Specifications: in. [mm]

Termination Options

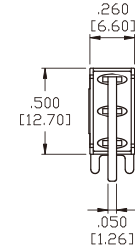
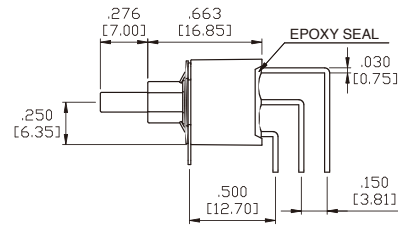
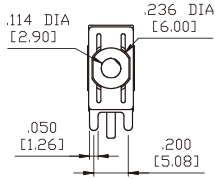
M1



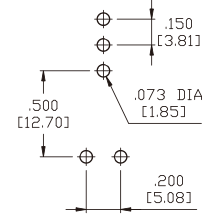
M2



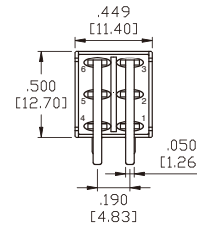
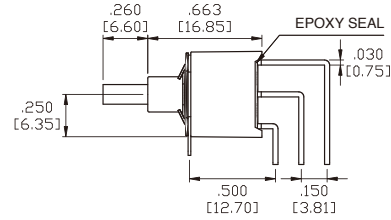
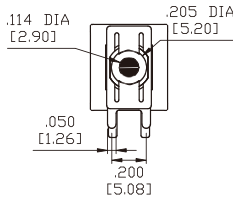
M7 Single Pole



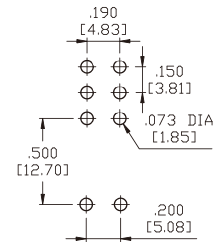
P.C.MOUNTING



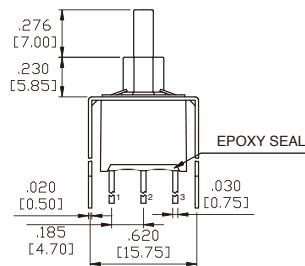
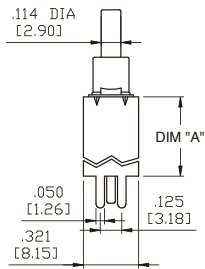
M7 Double Pole



P.C.MOUNTING

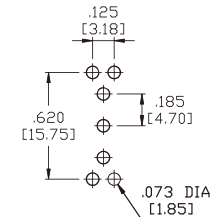


VS2-VS3 Single Pole

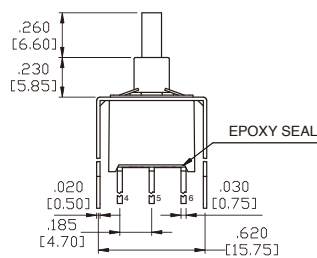
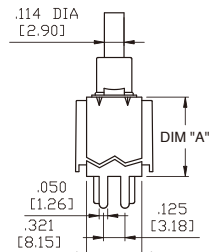


OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

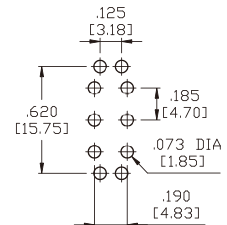


VS2-VS3 Double Pole



OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

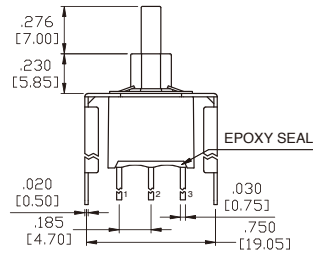
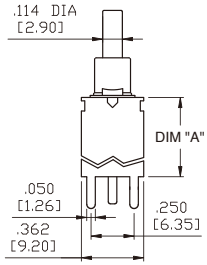
P.C.MOUNTING



3MS-Series Dimensional Specifications: in. [mm]

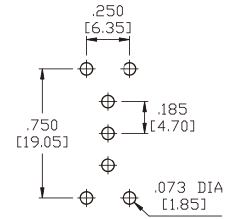
Termination Options

VS4-VS5 Single Pole

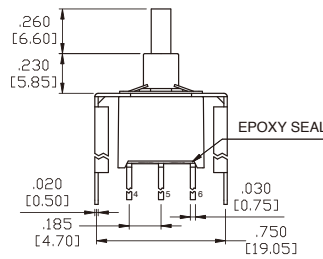
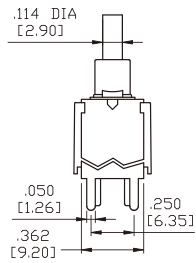


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C. MOUNTING

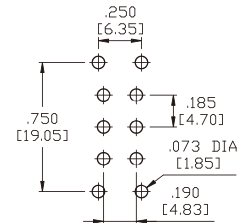


VS4-VS5 Double Pole



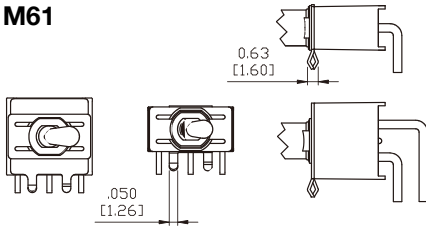
OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C. MOUNTING

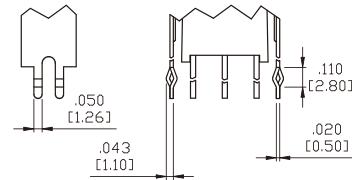


Snap-In Termination Options

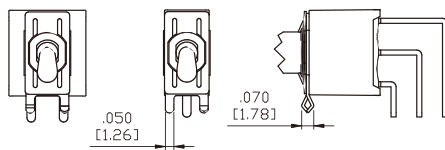
M61



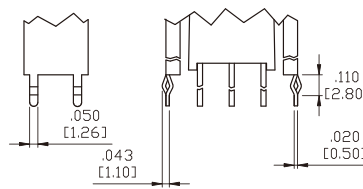
VS21, VS31



M71

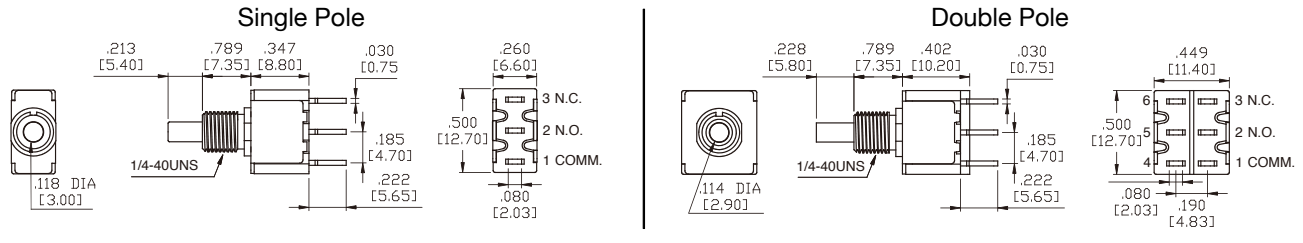


VS41, VS51



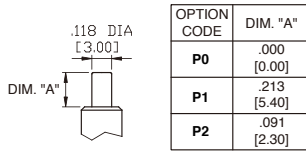
* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

3MN-Series Dimensional Specifications: in. [mm]

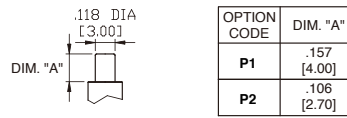


Plunger Options

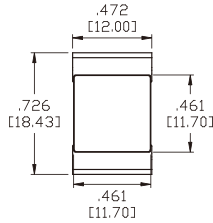
For B1, B2, B3, B4 Bushing



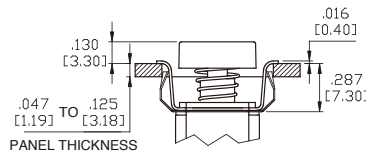
For B6 Bushing



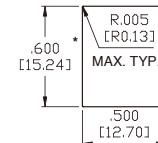
AP1



Actuator Options for Snap-In Front Mount

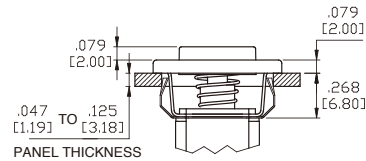
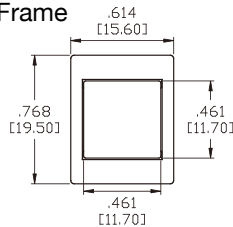


PANEL MOUNTING

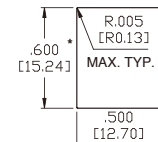


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP2 with Frame

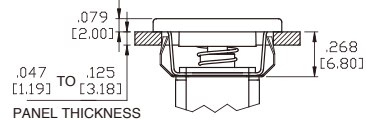
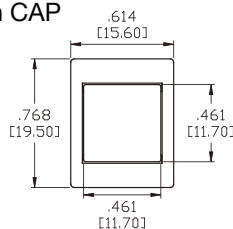


PANEL MOUNTING

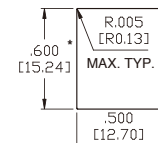


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP3 Flush CAP



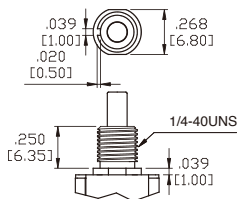
PANEL MOUNTING



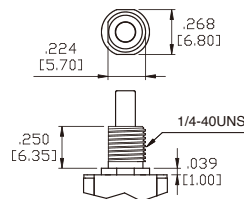
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

Bushing Options

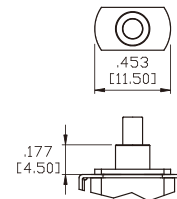
B1 Threaded Standard
B2 Non-Threaded



B3 Threaded Standard
B4 Non-Threaded



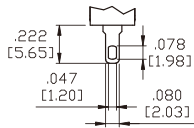
B6 Non-Threaded
(FOR TERMINATION OPTIONS VS6-VS9 ONLY)



3MN-Series Dimensional Specifications: in. [mm]

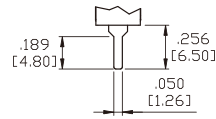
Termination Options

M1 Standard Solder Lug



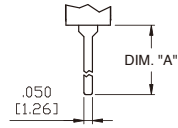
THK .030 [0.75]

M2 PC Thru-Hole



THK .030 [0.75]

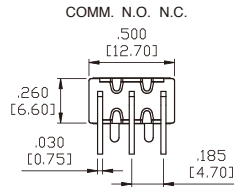
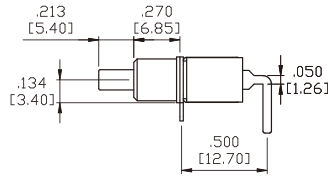
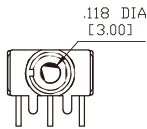
M5 Wire Wrap



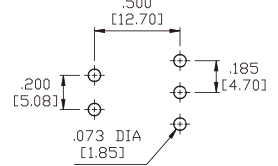
THK .030 [0.75]

OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]

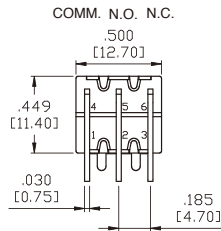
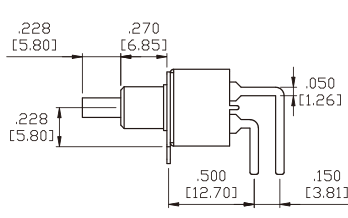
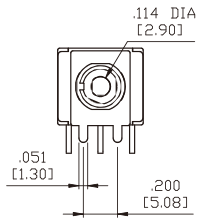
M6 Single Pole



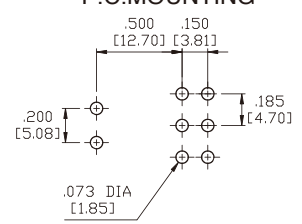
P.C.MOUNTING



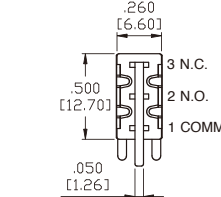
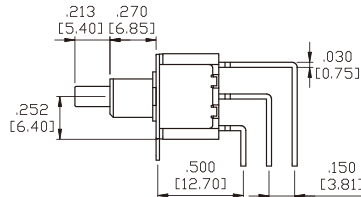
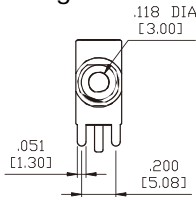
M6 Double Pole



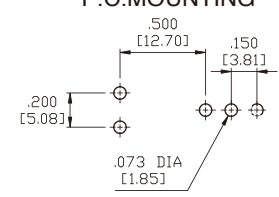
P.C.MOUNTING



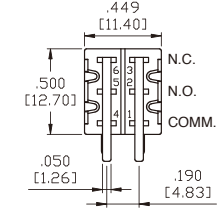
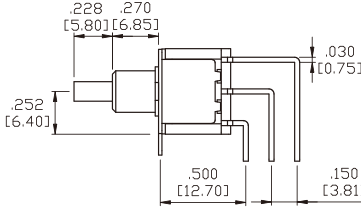
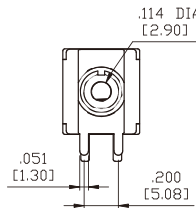
M7 Single Pole



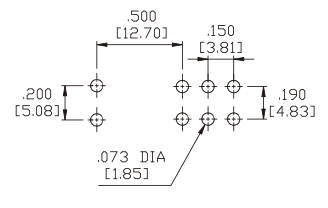
P.C.MOUNTING



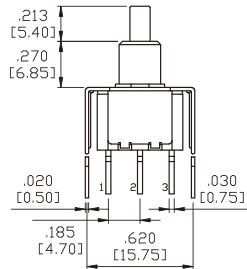
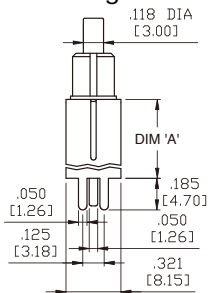
M7 Double Pole



P.C.MOUNTING

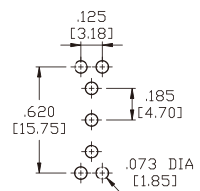


VS2-VS3 Single Pole



OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

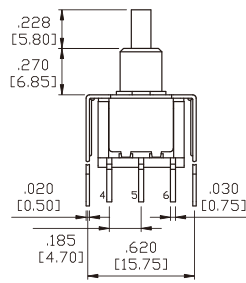
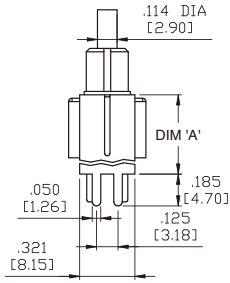
P.C.MOUNTING



3MN-Series Dimensional Specifications: in. [mm]

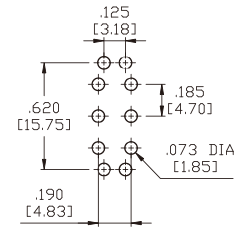
Termination Options

VS2-VS3 Double Pole

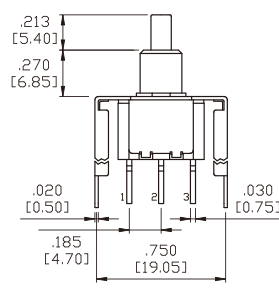
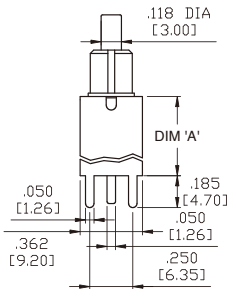


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

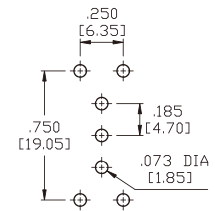


VS4-VS5 Single Pole

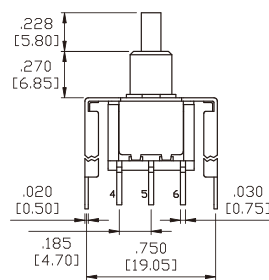
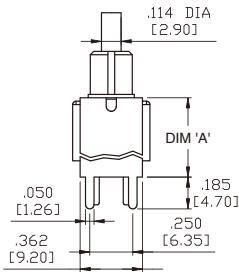


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

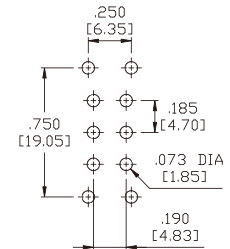


VS4-VS5 Double Pole



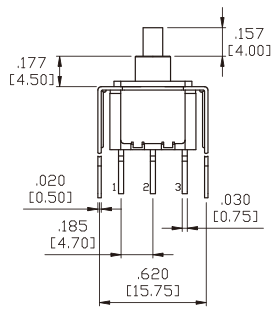
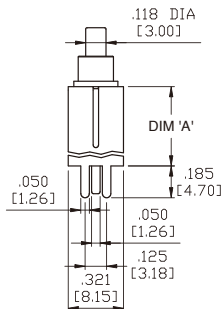
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING



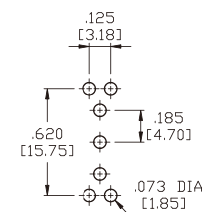
VS6-VS7 Single Pole

(FOR B6 BUSHING ONLY)



OPTION CODE	DIM.'A'
VS6	.461 [11.70]
VS7	.630 [16.00]

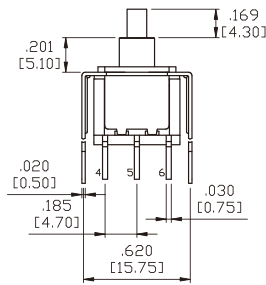
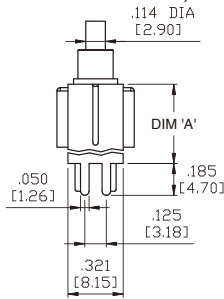
P.C.MOUNTING



3MN-Series Dimensional Specifications: in. [mm]

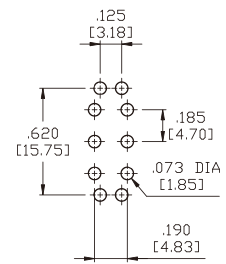
Termination Options

VS6-VS7 Double Pole (FOR B6 BUSHING ONLY)

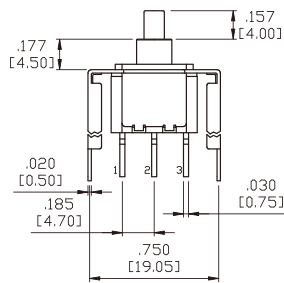
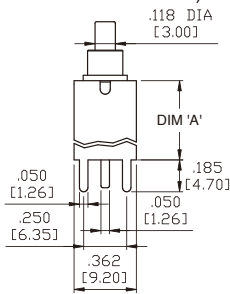


OPTION CODE	DIM: 'A'
VS6	.461 [11.70]
VS7	.630 [16.00]

P.C.MOUNTING

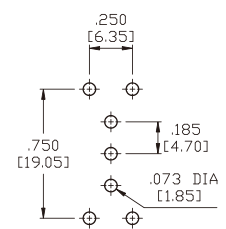


VS8-VS9 Single Pole (FOR B6 BUSHING ONLY)

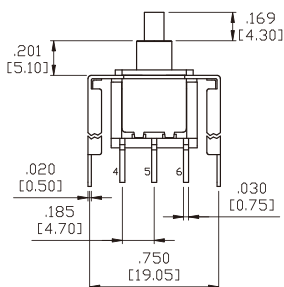
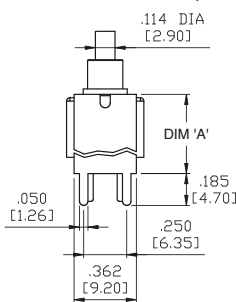


OPTION CODE	DIM: 'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

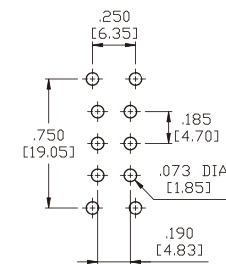


VS8-VS9 Double Pole (FOR B6 BUSHING ONLY)



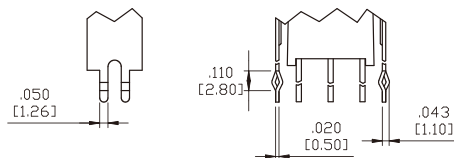
OPTION CODE	DIM: 'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

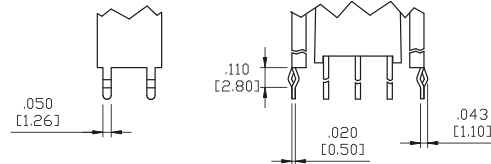


Snap-In Termination Options

VS21, VS31

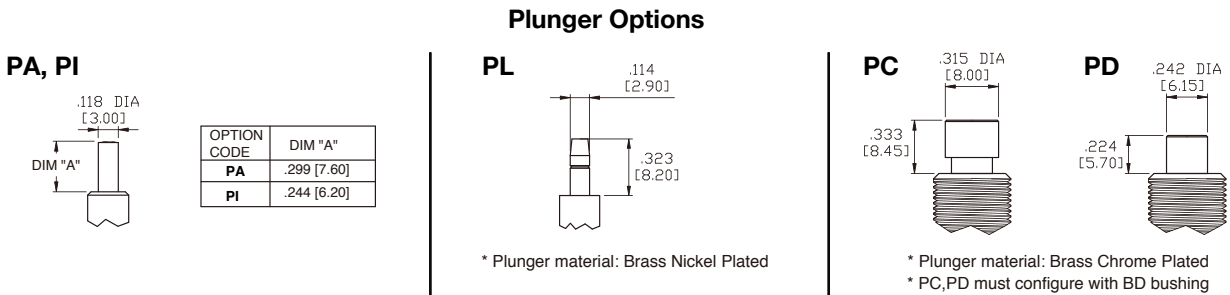
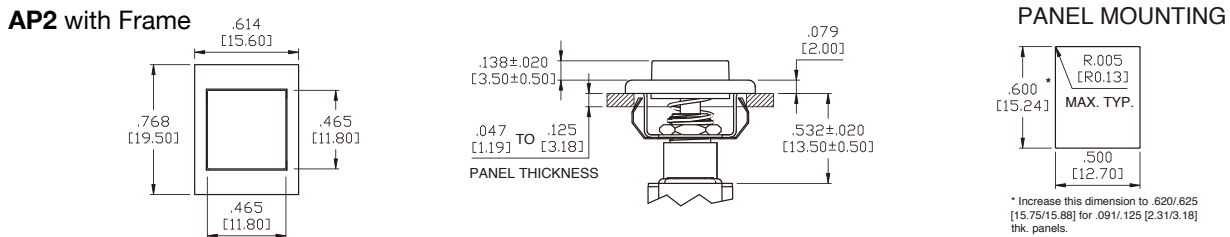
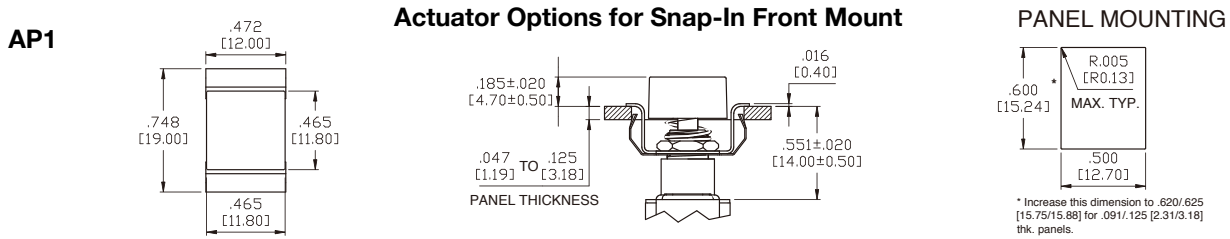
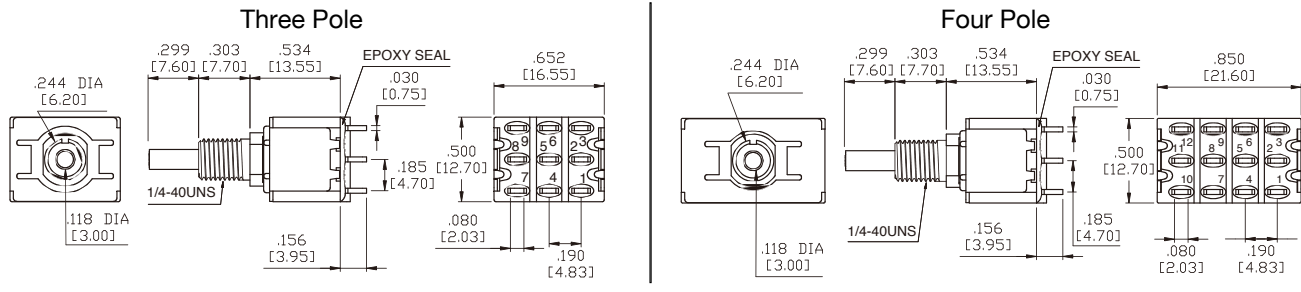
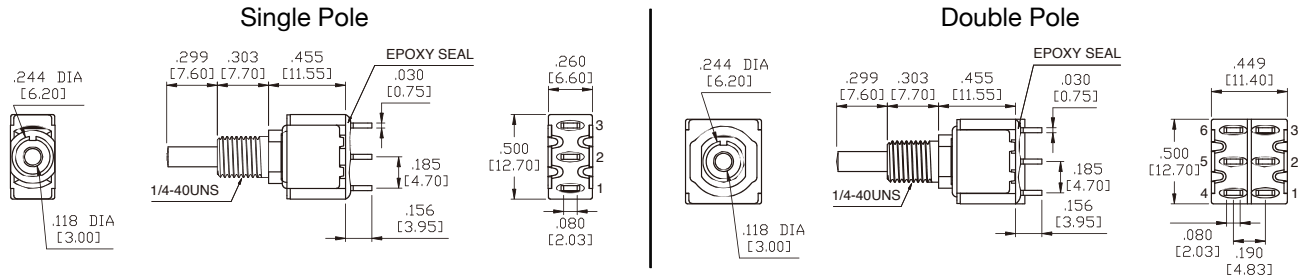


VS41, VS51



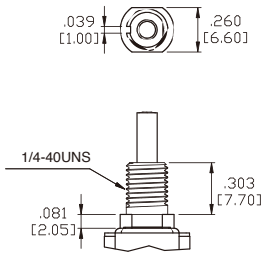
* PC Mounting for VS21, VS31, VS41, VS51 refer to VS2, VS3, VS4, VS5 respectively.

3MA-Series Dimensional Specifications: in. [mm]



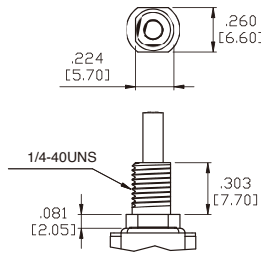
3MA-Series Dimensional Specifications: in. [mm]

B10 Threaded Standard B20 Non-Threaded

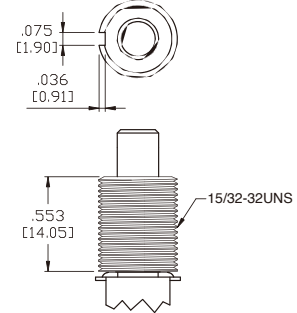


Bushing Options

B21 Non-Threaded

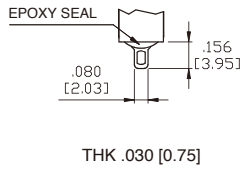


BD Threaded Standard

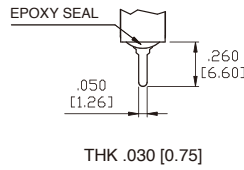


Termination Options

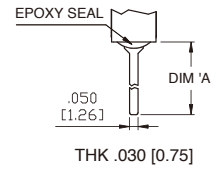
M1 Standard Solder Lug



M2 PC Thru-Hole

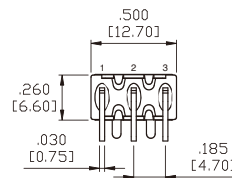
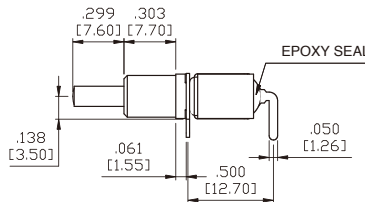
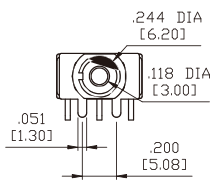


M5 Wire Wrap

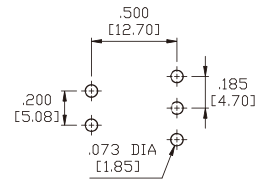


OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

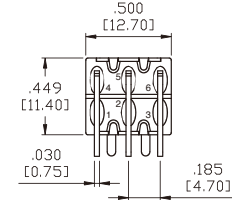
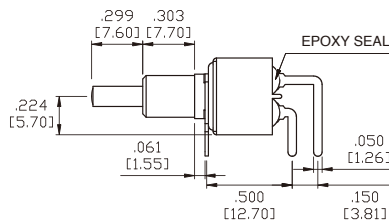
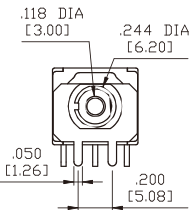
M6 Single Pole



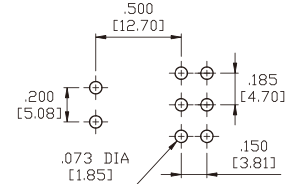
P.C.MOUNTING



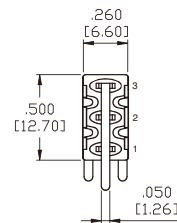
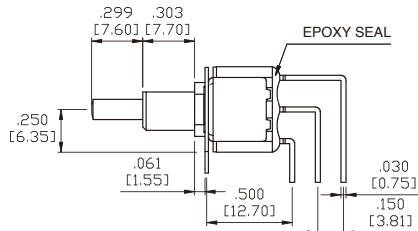
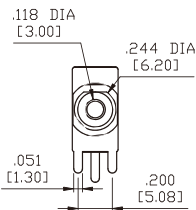
M6 Double Pole



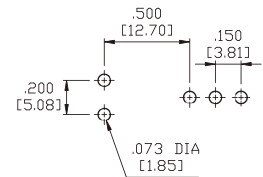
P.C.MOUNTING



M7 Single Pole



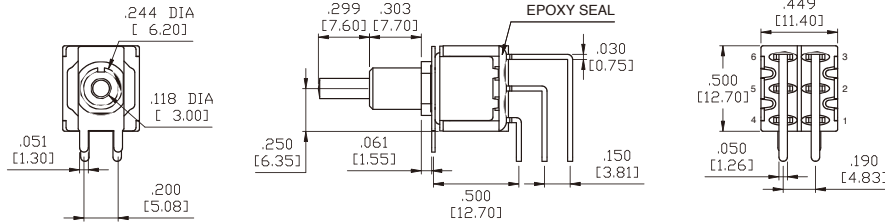
P.C.MOUNTING



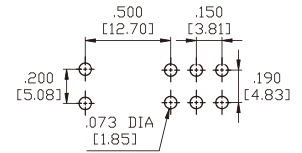
3MA-Series Dimensional Specifications: in. [mm]

Termination Options

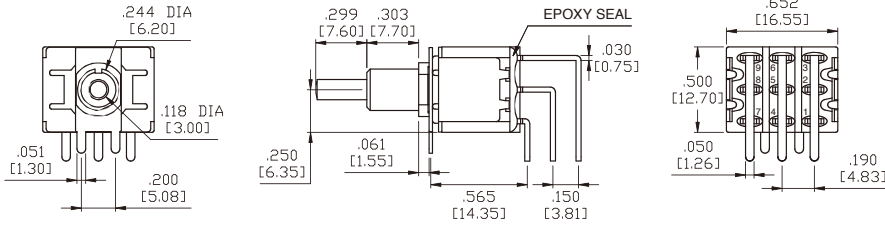
M7 Double Pole



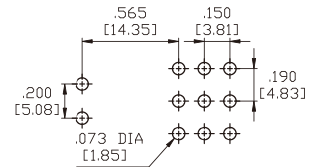
P.C.MOUNTING



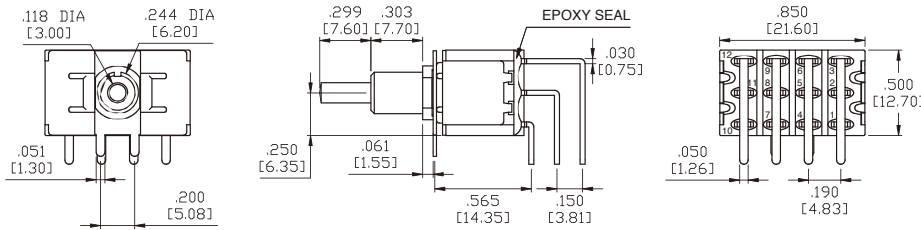
M7 Three Pole



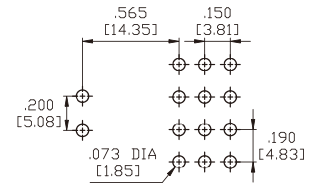
P.C.MOUNTING



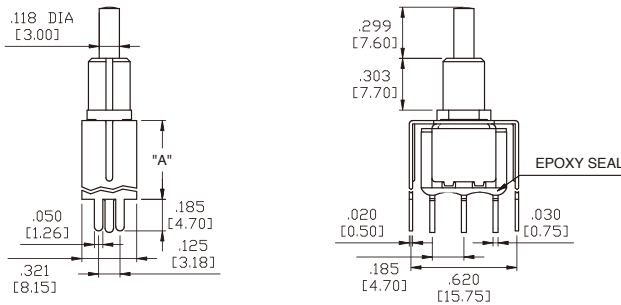
M7 Four Pole



P.C.MOUNTING

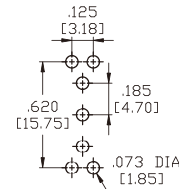


VS2-VS3 Single Pole

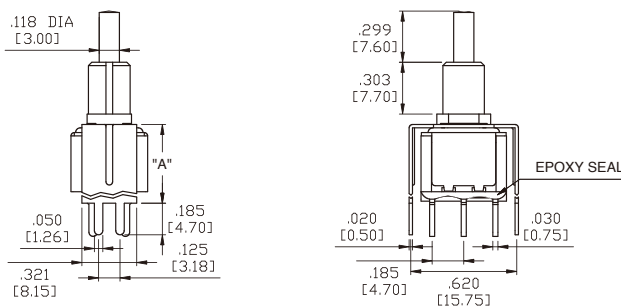


P.C.MOUNTING

OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

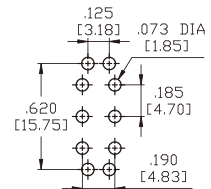


VS2-VS3 Double Pole



P.C.MOUNTING

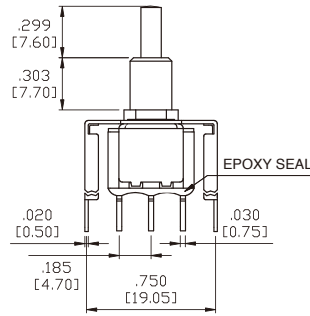
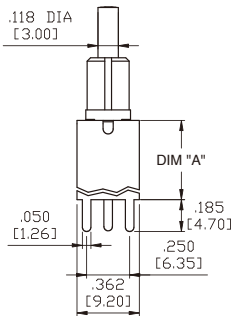
OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]



3MA-Series Dimensional Specifications: in. [mm]

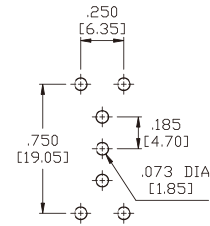
Termination Options

VS4-VS5 Single Pole

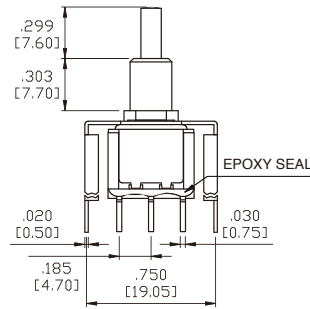
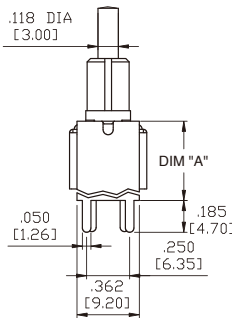


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

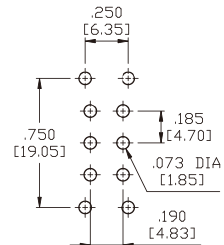


VS4-VS5 Double Pole



OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

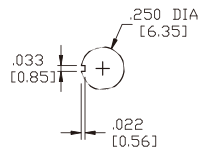
P.C.MOUNTING



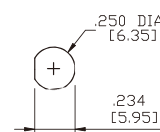
Panel Mounting

1/4 INCH BUSHING

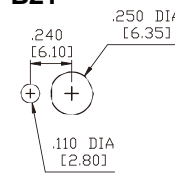
B10



B20

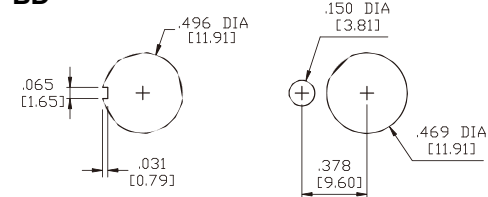


B21



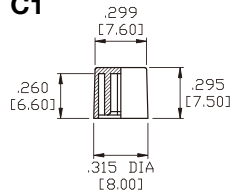
15/32 INCH BUSHING

BD

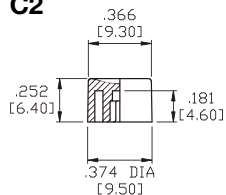


Plunger Caps

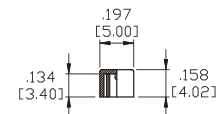
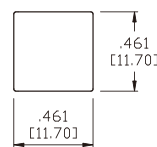
C1



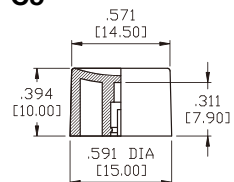
C2



C3

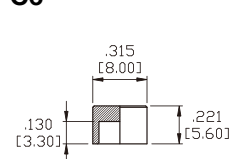


C5



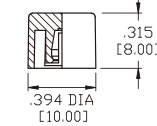
For PL plunger only

C6



For PD plunger only

C7



For PL plunger only

CAP AND FRAME COLORS			
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

MATERIAL: ABS for C1~C5, C7
MATERIAL: Chrome plated brass for C6

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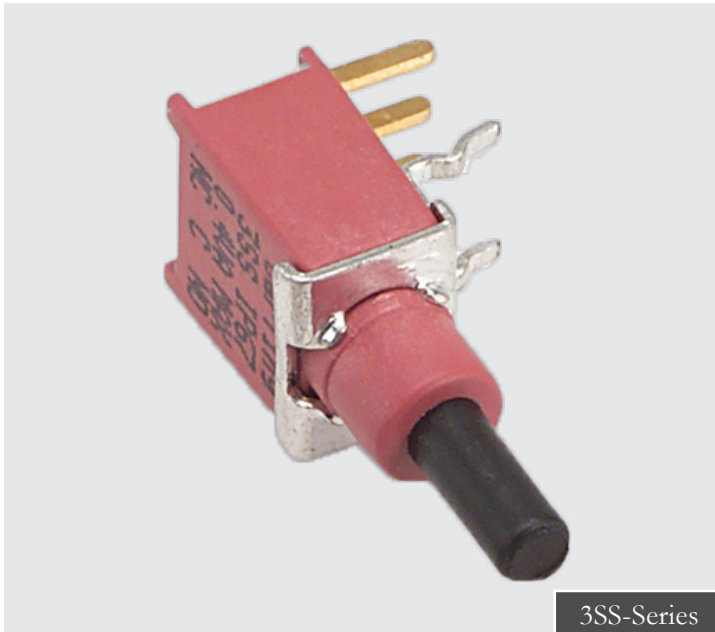
Innovative Designs. Powerful Solutions.

3SS/3S1/3SM

3S-Series

SUB-MINIATURE PUSHBUTTONS

The 3S family of sub-miniature pushbutton switches is composed of three switch series; the **3S1-Series** sub-miniature pushbutton switch, the **3SS-Series** sealed sub-miniature pushbutton switch, and the **3SM-Series** surface mount sealed sub-miniature pushbutton switch. All switches are available with a variety of rating, termination and actuator choices, and will withstand temperatures from -30°C to +85°C.



Product Highlights:

- IP67 Sealing
- AC or Low Voltage DC Rated
- Snap-in, PC or Surface Mounting
- Bulk Packed or Tape Reel

Typical Applications:

- Telecommunications
- Performance Audio
- Networking
- Computers
- Instrumentation
- Low Power On/Off Designs

Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

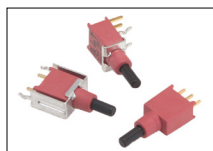


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Innovative Designs. Powerful Solutions.

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3SS-Series
Sealed
Sub-Miniature
Pushbutton Switch



3S1-Series
Sub-Miniature
Pushbutton
Switch



3SM-Series
Sealed Surface Mount
Sub-Miniature
Pushbutton Switch

Electrical

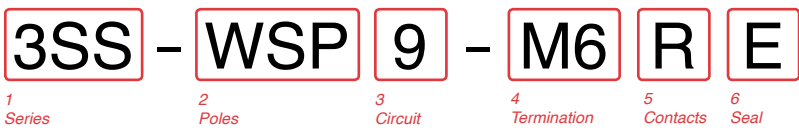
Contact Rating	refer to ordering scheme
Electrical Life	50,000 make & break cycles @ full load
Contact Resistance	20 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts
Insulation Resistance	1000 MΩ min.
Dielectric Strength	1500 Volts RMS @ sea level

Physical

Operating Temperature	-30°C to +85°C
Index of Protection	3SS & 3SM-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210

Material

Case	all UL94 V-0 3S1-Series: Diallyl phthalate (DAP) 3SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
Plunger	3S1-Series: Thermoplastic polyester, black 3SS-Series: Thermoplastic polyester (UL 94V-0), with internal o-ring 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
Bushing	3S1-Series: Brass, nickel plated 3SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0)
Housing	Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Epoxy



1 SERIES
3SS Sealed Sub-Miniature Pushbutton Switch

2 POLES
WSP Single pole - uses terminals 1, 2 & 3
WDP Double pole - uses terminals 1, 2, 3, 4, 5 & 6

3 CIRCUIT
() - momentary
Switching Position:

1	2
2-3, 5-6	2-1, 5-4
8 ON	(ON)
9 OFF	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 ACTUATOR STYLE 4

M2	PCB
M6	PC Mount, 90° horizontal
M61	Snap-In, 90° horizontal
M7	PC Mount, 90° vertical
M71	Snap-In, 90° vertical
VS2	PC Mount, U bracket
VS21	Snap-In, U bracket

5 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	1A 125VAC or 28VDC	IP67
K	gold ²	tin ^{3,4}	0.4VA max 20V max (AC/DC)	IP67
P	silver ¹	tin ^{3,4}	1A 125VAC or 28VDC	IP67
R	gold ²	gold ²	0.4VA max 20V max (AC/DC)	IP67

6 EPOXY SEAL

E Epoxy Seal	0 without Epoxy Seal
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- Notes:
- Movable contact & terminal platings: silver over copper alloy
 - Movable contact & terminal platings: gold over nickel over copper alloy
 - Terminal platings: tin over nickel over copper alloy
 - Tin option available with PC terminations only.

*Manufacturer reserves the right to change product specification without prior notice.

3S1 - SP 9 - B6 - M7 - R E

1 Series 2 Poles 3 Circuit 4 Bushing 5 Termination 6 Contacts 7 Seal

1 SERIES
3S1 Sub-Miniature Pushbutton Switch

2 POLES
SP Single pole - uses terminals 1, 2 & 3

3 CIRCUIT
 () - momentary
Switching Position:

	1	2
	2-3, 5-6	2-1, 5-4
8	ON	(ON)
9	OFF	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 BUSHING

B5 ¹	10-48 Threaded	B9	Flush Bushing
B6	Unthreaded "D"	B0	1/4" Unthreaded "D"
B7	Unthreaded	OP1	Snap-In with bezel
B8 ²	1/4-40 Threaded "D"	P0	Flush Plunger

5 TERMINATION

M1	Solder Lug	M7	PC Mount, 90° vertical
M2	PCB	M71	Snap-In, 90° vertical
M6	PC Mount, 90° horizontal	VS2	PC Mount, U bracket
M61	Snap-In, 90° horizontal	VS21	Snap-In, U bracket

See page 50-51 for dimensional specifications.

6 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating
G	silver ³	gold over silver	1A@125VAC or 28VDC
K	gold ^{4,7}	tin ⁶	0.4VA max @ 20V max (AC/DC)
P	silver ^{3,8}	tin ⁶	1A@125VAC or 28VDC
Q	silver ³	silver ³	1A@125VAC or 28VDC
R	gold ⁴	gold ⁵	0.4VA max @ 20V max (AC/DC)

7 EPOXY SEAL

E	Epoxy Seal	0	without Epoxy Seal
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Notes:
 1 Hardware includes (2) 2M1-HDW21 nuts, and (1) 2M1-HDW22 washer
 2 Hardware includes (2) 2M1-HDW21 nuts, (1) 2M1-HDW22 washer, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 locking ring
 3 Movable contact and terminal platings: silver over copper alloy
 4 Movable contact and terminal platings: gold over nickel over copper alloy
 5 Terminal platings: gold over nickel over copper alloy
 6 Terminal platings: tin over copper alloy
 7 Terminal contact platings: Gold over nickel alloy
 8 Terminal contact platings: silver over nickel alloy

3SM - SP 9 - M6 - R E

1 Series 2 Poles 3 Circuit 4 Termination 5 Contacts 6 Seal 7 Packaging

1 SERIES
3SM Sealed Surface Mount Sub-Miniature Pushbutton Switch

2 POLES
SP Single pole - uses terminals 1, 2 & 3

3 CIRCUIT
 () - momentary
Switching Position:

	1	2
	2-3	2-1
8	ON	(ON)
9	OFF	(ON)

Note: Plunger at rest in Position 1. Plunger depressed in Position 2.

4 TERMINATION

K6	Surface Mount, horizontal .433 [11.00 mm]
M6	Surface Mount, 90° flat .286 [7.26 mm]
M7	Surface Mount, 90° right angle
S6	Surface Mount, 90° horizontal .353 [8.97 mm]

5 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	1A 125VAC or 28VDC	IP67
K	gold ^{2,5}	tin ⁴	0.4VA max 20V max (AC/DC)	IP67
P	silver ^{1,6}	tin ⁴	1A 125VAC or 28VDC	IP67
Q	silver ¹	silver ¹	1A 125VAC or 28VDC	IP67
R	gold ²	gold ³	0.4VA max 20V max (AC/DC)	IP67

6 EPOXY SEAL

E	Epoxy Seal	0	without Epoxy Seal
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7 PACKAGING
T/R tape reel - 500 pieces per reel
 Switches are bulk packed, unless T/R is specified at the end of the part number.

Notes:
 1 Movable contact and terminals platings: silver over copper alloy
 2 Movable contact platings: gold over nickel over copper alloy
 3 Terminal platings: gold over nickel over copper alloy
 4 Terminals platings: tin over copper alloy
 5 Terminal contact platings: gold over nickel alloy
 6 Terminal contact platings: silver over nickel alloy

3S-Series Accessories

To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word "assembled".
 Ex: 3S1-SP9-B6-M7-RE-C23 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 3S1-C13.

Optional Cap

3S1 - C1 3

1 Series 2 Toggle Cap Size 3 Color

1 SERIES
3S1 Fits 3SS, 3S1 or 3MS

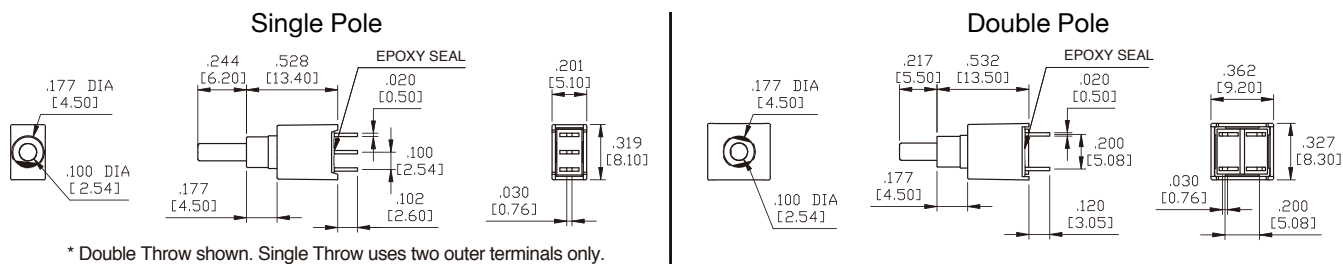
2 TOGGLE CAP SIZE

C1	.158" [4.01 mm] height	C2	.138" [35.05 mm] height
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3 CAP COLOR

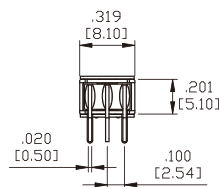
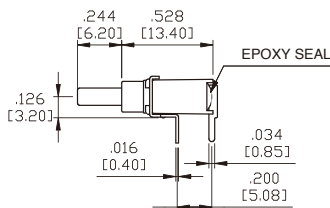
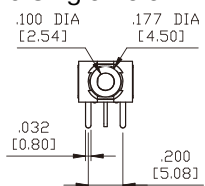
1	White	5	Yellow
2	Black	6	Green
3	Red	7	Blue
4	Orange		

3SS-Series Dimensional Specifications: in. [mm]

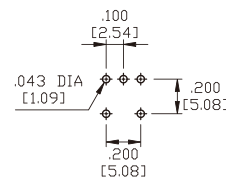


Termination Options

M6 Single Pole

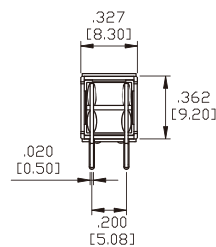
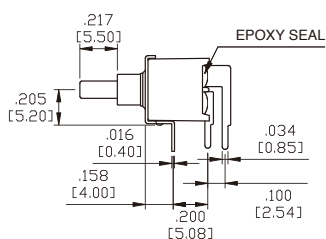
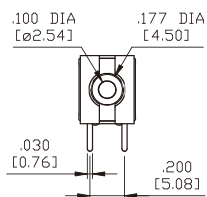


P.C.MOUNTING

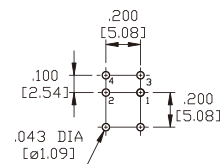


* Double Throw shown. Single Throw uses two outer terminals only.

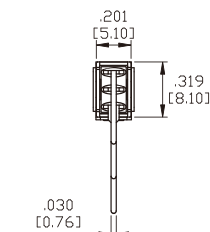
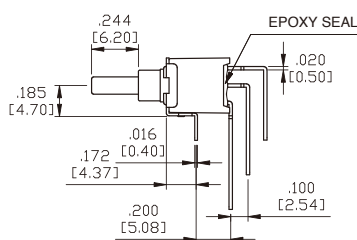
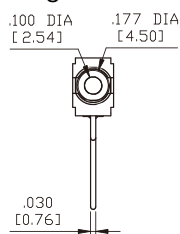
M6 Double Pole



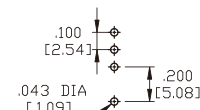
P.C.MOUNTING



M7 Single Pole

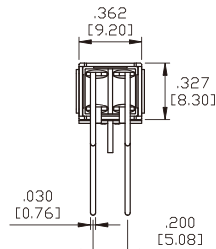
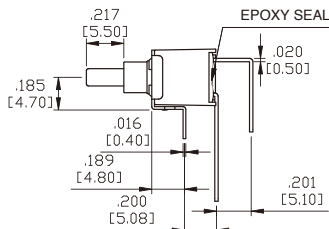
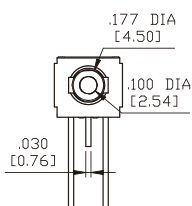


P.C.MOUNTING

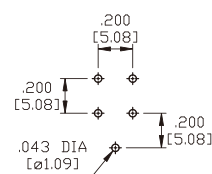


* Double Throw shown. Single Throw uses two outer terminals only.

M7 Double Pole



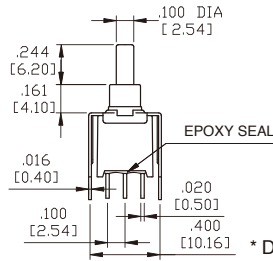
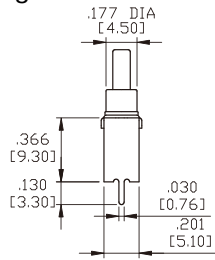
P.C.MOUNTING



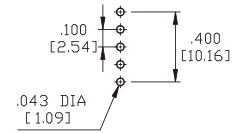
3SS-Series Dimensional Specifications: in. [mm]

Termination Options

VS2 Single Pole

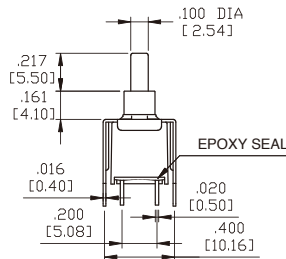
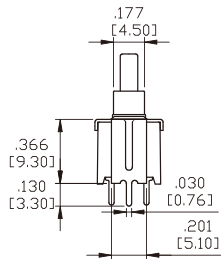


P.C. MOUNTING

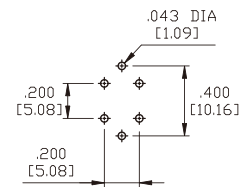


* Double Throw shown. Single Throw uses outer terminals only.

VS2 Double Pole

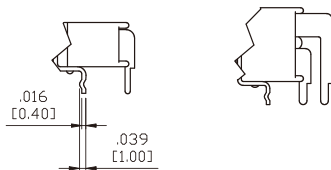


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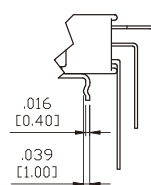


Snap-In Termination Options

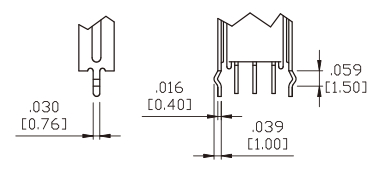
M61



M71

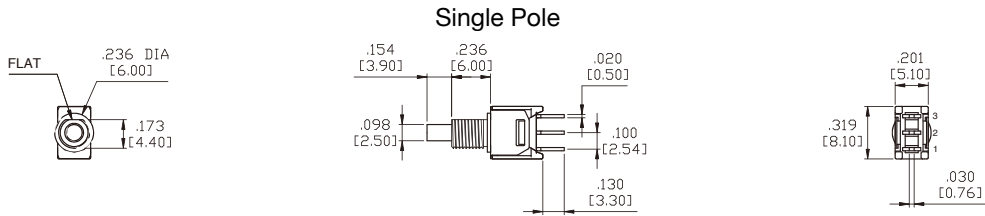


VS21



* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

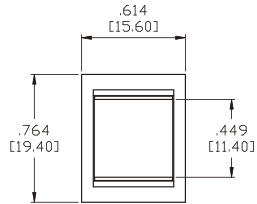
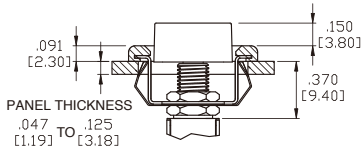
3S1-Series Dimensional Specifications: in. [mm]



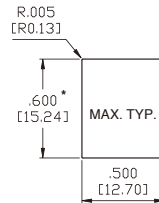
* Double Throw shown. Single Throw uses two outer terminals only.

Actuator Options for Snap-In Front Mount

OP1

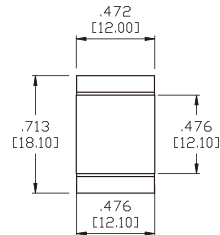
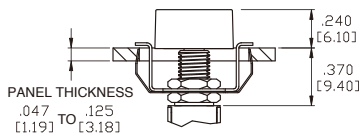


PANEL MOUNTING

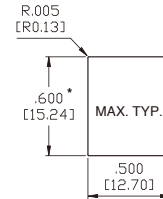


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

OP1 Without Frame



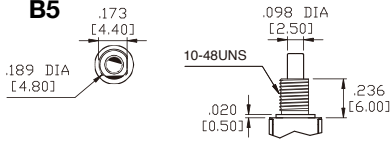
PANEL MOUNTING



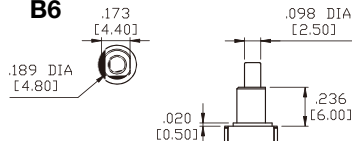
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

Bushing Options

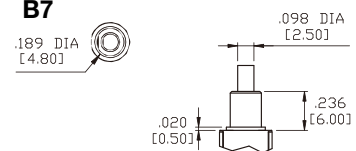
B5



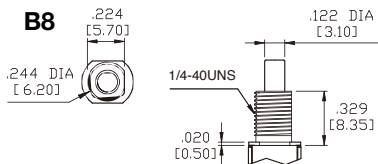
B6



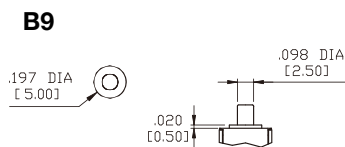
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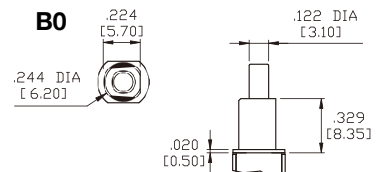
B8



B9

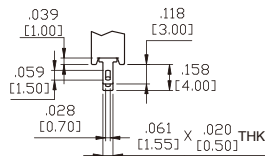


B0

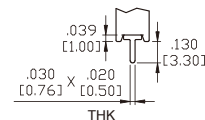


Termination Options

M1



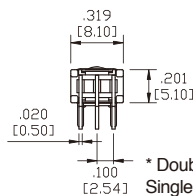
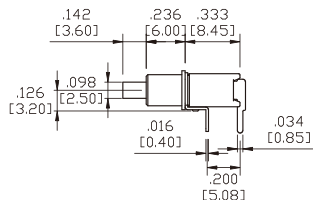
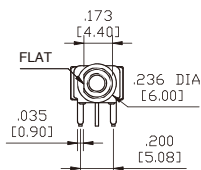
M2



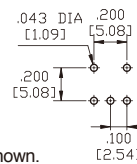
3S1-Series Dimensional Specifications: in. [mm]

Termination Options

M6 Single Pole

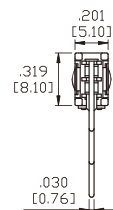
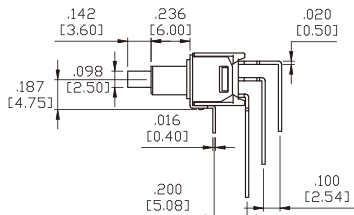
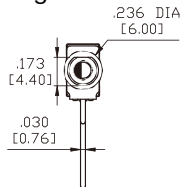


P.C.MOUNTING



* Double Throw shown.
Single Throw uses two outer terminals only.

M7 Single Pole

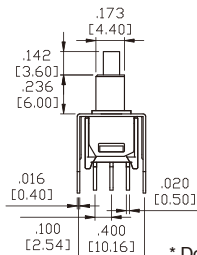
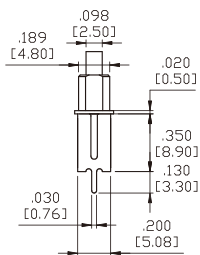


P.C.MOUNTING

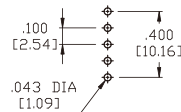


* Double Throw shown.
Single Throw uses two outer terminals only.

VS2 Single Pole



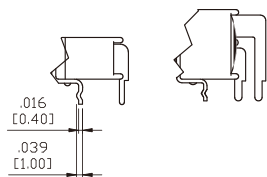
P.C.MOUNTING



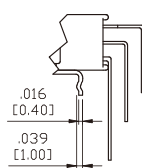
* Double Throw shown. Single Throw uses outer terminals only.

Snap-In Termination Options

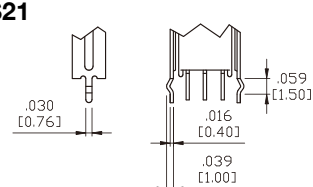
M61



M71



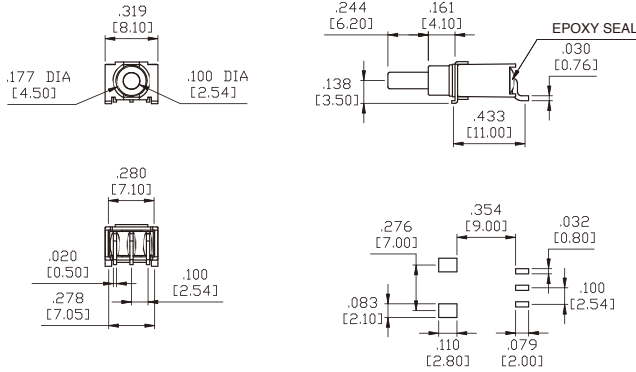
VS21



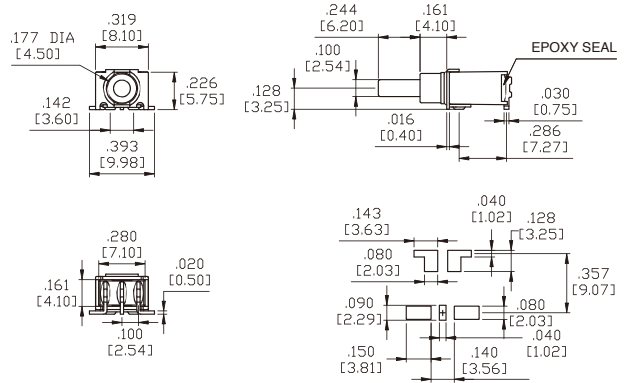
* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

3SM-Series Dimensional Specifications: in. [mm]

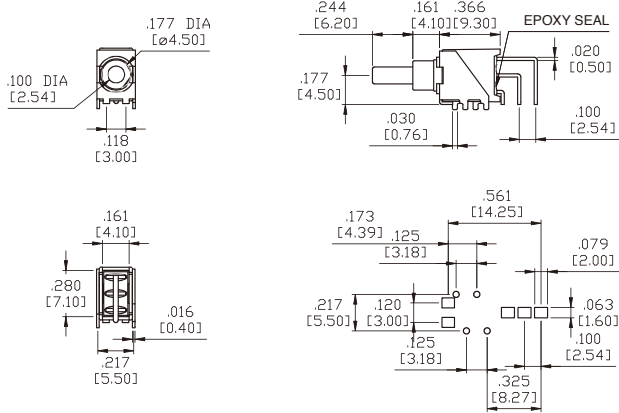
K6 Single Pole



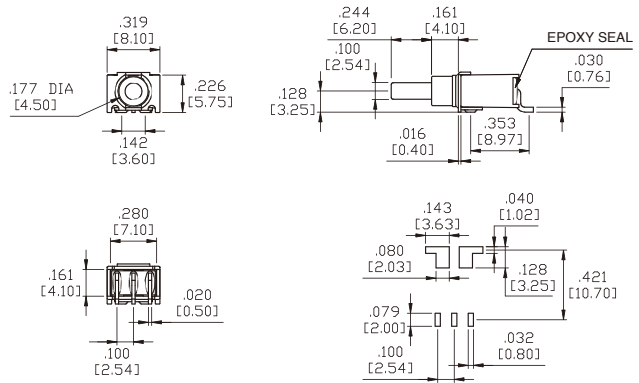
M6 Single Pole



M7 Single Pole



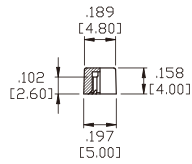
S6 Single Pole



* Double Throw shown. Single Throw uses two outer terminals only.

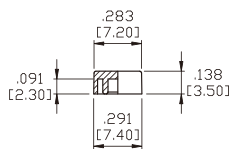
Plunger Caps

C1



* MATERIAL: ABS.

C2



* MATERIAL: ABS.

CAP COLORS			
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

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