



Carling Technologies®

Innovative Designs. Powerful Solutions.

MINIATURE SWITCHES



CATALOG

FOUNDED IN 1920



Since its founding, Carling Technologies has continually forged a tradition of leadership in quality and product innovation.

There are few products that Carling Technologies hasn't turned "ON" and fewer industries that haven't turned to Carling for solutions. With ISO and TS registered manufacturing facilities and technical sales offices worldwide, Carling ranks among the world's largest manufacturers of circuit breakers, switches, power distribution units, digital switching systems and electronic controls.



SWITCHES & CONTROLS

- Rocker
- Toggle
- Pushbutton
- Rotary

CIRCUIT PROTECTION

- Hydraulic-Magnetic
- Thermal
- GFCI / ELCI

CUSTOM SOLUTIONS

- PDU's
- Keypads
- Control Modules

MULTIPLEXED POWER SYSTEMS

- HMI Devices & I/O Modules
- Programmable Displays
- Data Communication Interfaces
- Electrical Systems Monitoring

STRATEGIC MARKETS SERVED:



On/Off Highway



Marine



Telecom/Datacom



Military



Renewable Energy

GLOBAL LOCATIONS:

Carling Technologies
World Headquarters
Plainville, CT, USA
ISO9001:2015
IATF16949:2016

Maretron
Phoenix, AZ, USA

Carling Technologies
Brownsville, TX, USA
ISO14001:2015
ISO9001:2015
IATF16949:2016

Carling Technologies
Matehuala, Mexico
ISO14001:2015
ISO9001:2015
IATF16949:2016

Carling Technologies
Jupiter, FL, USA

Carling Technologies
European Headquarters
Exeter, UK
ISO9001:2015
IATF 16949:2016

Carling Technologies
Kowloon, Hong Kong
ISO9001:2015
IATF16949:2016

Carling Technologies
Zhongshan, China
ISO14001:2015
ISO9001:2015
IATF16949:2016

OTHER SERVED INDUSTRIES:



Medical



Industrial Control



Audio / Visual



Commercial Food



HVAC



Floor Care



Generators



Small Appliances



Security Systems



Test & Measurement

WORLDWIDE NUMBERS:



2400+
EMPLOYEES



150+
ENGINEERS

COMPETITIVE ADVANTAGES⁺



Innovative &
Eco-Friendly Products



Excellent Quality &
Customer Service



Reliable &
On-Time Delivery



Vertical
Integration



70+
DISTRIBUTORS



50+
REP FIRMS

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HELPFUL TIP

Click on a product to go directly to that page number!

Carling's miniature and subminiature sealed & non-sealed switches come in 1-4 pole configurations with ratings from 0.4VA to 6 amps. The miniature and subminiature switch lines include rocker, paddle, toggle, push button, and slide switches with PC, PCB, snap-in, and surface mount options. Certifications include UL, CSA, and cUL.

Available Online are tools such as a part configurator, product selectors and stock checks. Please visit www.carlingtech.com for the latest information on all our products.

Application Solution Engineers are readily available to assist you in selecting the appropriate product for your application. For further assistance, please email us at team2@carlingtech.com

Custom Design Solutions can be tailor-made for most any application using our extensive engineering resources.

Other Products such as switches & controls, hydraulic-magnetic, thermal and ground fault circuit breakers are also available.

SELECTOR GUIDE

	Series	Sub-Miniature	Miniature	Sealed	Surface Mount	Approvals	IP Rating
ROCKER	1S1 	✓	–	–	–		N/A
	1SS 	✓	–	✓	–	N/A	IP67
	1SM 	✓	–	✓	✓	N/A	IP67
	1M1 	–	✓	–	–		N/A
	1MS 	–	✓	✓	–		IP67
TOGGLE	2S1 	✓	–	–	–		N/A
	2SM 	✓	–	✓	✓	N/A	IP67
	2SS 	✓	–	✓	–	N/A	IP67
	2M1 	–	✓	–	–		N/A
	2M1H 	–	✓	✓	–		IP67
	2MS 	–	✓	✓	–		IP67
PUSHBUTTON	3S1 	✓	–	–	–	N/A	N/A
	3SS 	✓	–	✓	–	N/A	IP67
	3SM 	✓	–	✓	✓	N/A	IP67
	3MN 	–	✓	–	–		N/A
	3MS 	–	✓	✓	–		IP68
	3MA 	–	✓	–	–		N/A
	3MNH 	–	✓	✓	–		IP67
SLIDE	4S1 	✓	–	–	–	N/A	N/A
	4M1 	–	✓	–	–		N/A

*Manufacturer reserves the right to change product information without prior notice

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.



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:

[Configure a Complete Part](#)

[**Download CAD & Sales Drawing >**](#)



1SS-Series
Sealed
Sub-Miniature
Rocker Switch



1S1-Series
Sub-Miniature
Rocker Switch



1SM-Series
Sealed Surface Mount
Sub-Miniature
Rocker Switch

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	1S1-Series: 30,000 make & break cycles @ full load 1SS & 1SM-Series: 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

Material

Case	all UL94 V-0 1S1-Series: Dially phthalate (DAP) 1SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized 1SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
Rocker	1S1-Series: Nylon (UL 94V-0) 1SS & 1SM-Series: Nylon, black standard, internal o-ring sealed
Bushing	1S1-Series: Brass, nickel plated 1SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) 1SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0)
Housing	1S1-Series: Stainless Steel
Switch Support	1S1 & 1SM-Series: Brass, tin plated
Terminal Seal	Epoxy

Physical

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

1SS - **WMSP** **1** - **R2** / **2** **M2** **G** **E**

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

1 SERIES

1SS Sealed Sub-Miniature Rocker Switch

2 POLES

WMSP Single pole - uses terminals 1, 2 & 3
WMDP Double pole - uses terminals 1, 2, 3, 4, 5 & 6

3 CIRCUIT

Position:	1	2	3
	(-) - momentary	Connected Terminals	2-1, 5-4
1	2-3, 5-6	ON	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

4 ACTUATOR STYLE

R1 Small Rocker
R2 Narrow Black Rocker

5 ACTUATOR COLOR

1 White
2 Black
3 Red
Other colors available, consult factory.

6 TERMINATION

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

See page 6-7 for dimensional specifications.

7 CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
G silver ¹	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
K gold ^{2,5}	tin ⁴	0.4VA max 20V max (AC/DC)	IP67
P silver ^{1,6}	tin ⁴	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
R gold ²	gold ^{2,3}	0.4VA max 20V max (AC/DC)	IP67

8 EPOXY SEAL

E Epoxy Seal **0** without Epoxy Seal

Notes:

Tin option not available with M1 terminal.

- 1 Movable contact and terminal 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 Terminal platings: tin over copper alloy
- 5 Terminal contact platings: gold over nickel alloy
- 6 Terminal contact platings: silver over nickel alloy

1S1 - MSP 1 - R2 / 2 M6 Q E

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

1 SERIES**1S1** Sub-Miniature Rocker Switch**2 POLES****MSP** Single pole - uses terminals 1, 2 & 3**MDP** Double pole - uses terminals 1, 2, 3, 4, 5 & 6**3 CIRCUIT**

() - momentary

Position:	1	2	3
	2-3, 5-6	Connected Terminals	2-1, 5-4
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

4 ACTUATOR STYLE

R1 Small Rocker
R2 Narrow Black Rocker
R3 Medium Rocker

5 ACTUATOR COLOR

1 White
 2 Black
 3 Red

Other colors available, consult factory.

6 TERMINATION

M1 Solder Lug
M2 PCB
M6 PC Mount, 90° horizontal
M7 PC Mount, 90° vertical
VS2 PC Mount, U bracket
VS3 PC Mount, U bracket

M61 Snap-In, U bracket, 90° horizontal
M71 Snap-In, U bracket, 90° horizontal
VS21 Snap-In, U bracket

See page 8-9 for dimensional specifications.

7 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
K	gold ²	tin ³	0.4VA max 20V max (AC/DC)	N/A
P	silver ¹	tin ³	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
Q	silver ¹	silver ¹	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
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:

Tin option available with M1 termination.

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: tin over nickel over copper alloy

1SM - WMSP 1 - R2 - M2 G E

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

1 SERIES**1SM** Sealed Surface Mount Sub-Miniature Rocker Switch**2 POLES****WMSP** Single pole - uses terminals 1, 2 & 3**3 CIRCUIT**

() - momentary

Position:	1	2	3
	2-3	Connected Terminals	2-1
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

4 ACTUATOR STYLE**R2** Narrow Black Rocker**5 TERMINATION**

M6 Surface Mount, 90° flat - horizontal / side
S6 Surface Mount, 90° horizontal / back
S7 Surface Mount, 90° vertical

See page 10 for dimensional specifications.

6 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
K	gold ^{2,5}	tin ⁴	0.4VA max 20V max (AC/DC)	IP67
P	silver ^{1,6}	tin ⁴	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
Q	silver ¹	silver ¹	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
R	gold ²	gold ³	0.4VA max 20V max (AC/DC)	IP67

7 EPOXY SEAL**E** Epoxy Seal **0** without Epoxy Seal**8 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:

Tin option not available with M1 termination.

1 Movable contact and terminal platings: silver over copper alloy

2 Movable contact platings: gold over nickel over copper alloy

3 Terminal platings: gold over nickel over copper alloy

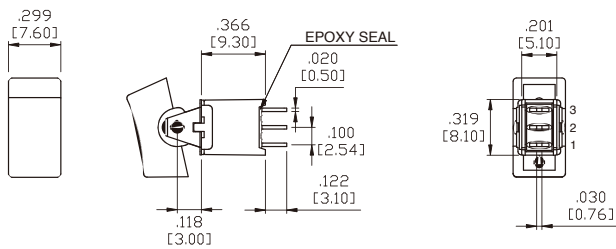
4 Terminal platings: tin over copper alloy

5 Terminal contact platings: gold over nickel alloy

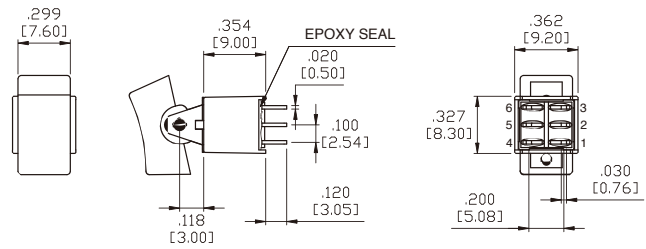
6 Terminal contact platings: silver over nickel alloy

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

Single Pole

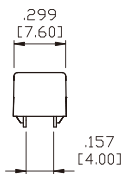
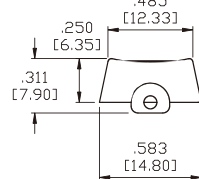


Double Pole

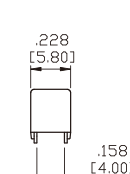
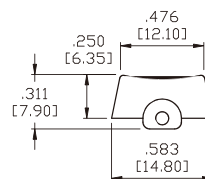


Actuator Options

R1



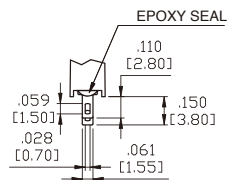
R2



Termination Options

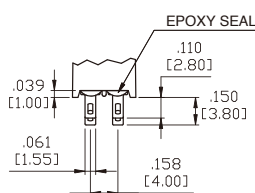
M1 STD. Solder Lug

SP



THK .020 [0.50]

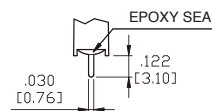
DP



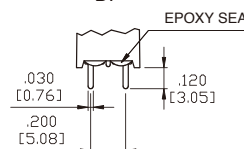
THK .020 [0.50]

M2 PC Thru-Hole

SP



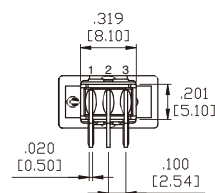
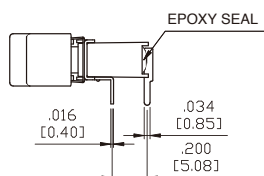
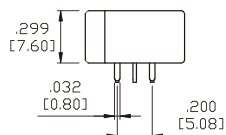
DP



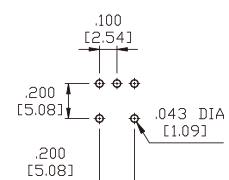
P.C.MOUNTING



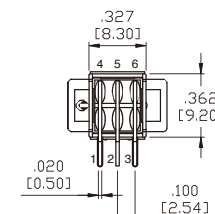
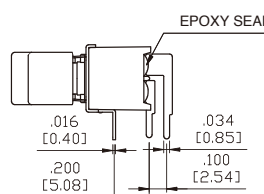
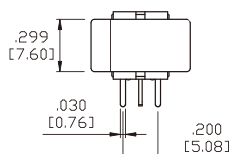
M6 Single Pole



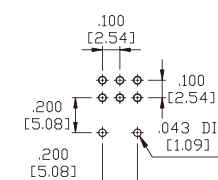
P.C.MOUNTING



M6 Double Pole



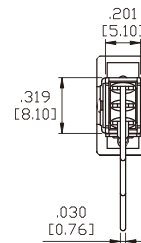
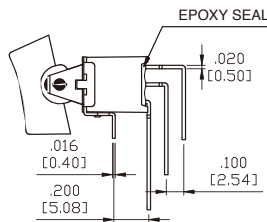
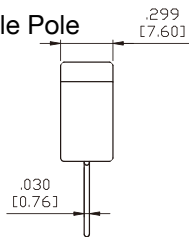
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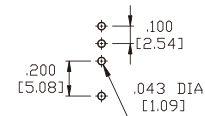
15S-Series Dimensional Specifications: in. [mm]

Termination Options

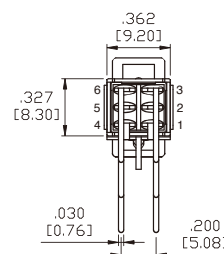
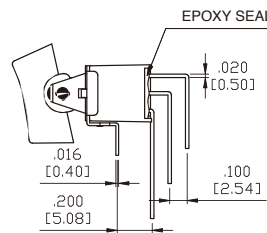
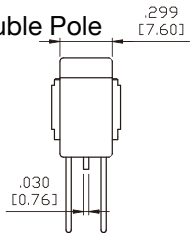
M7 Single Pole



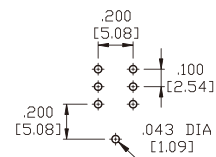
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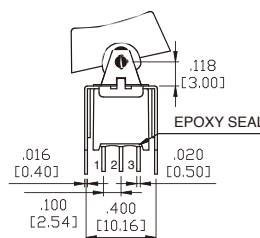
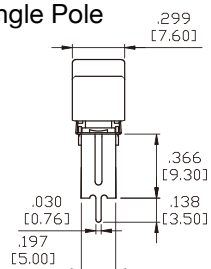
M7 Double Pole



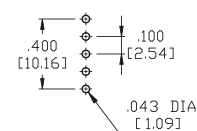
P.C.MOUNTING



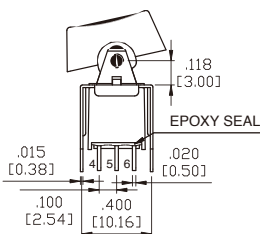
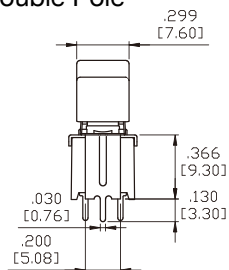
VS2 Single Pole



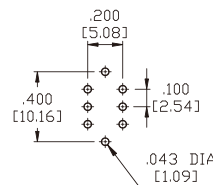
P.C.MOUNTING



VS2 Double Pole

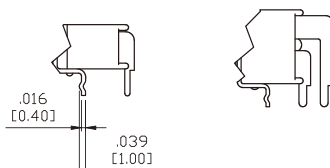


P.C.MOUNTING

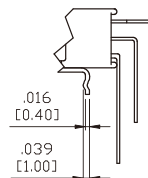


Snap-In Termination Options

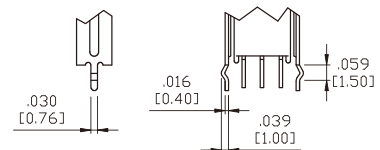
M61



M71

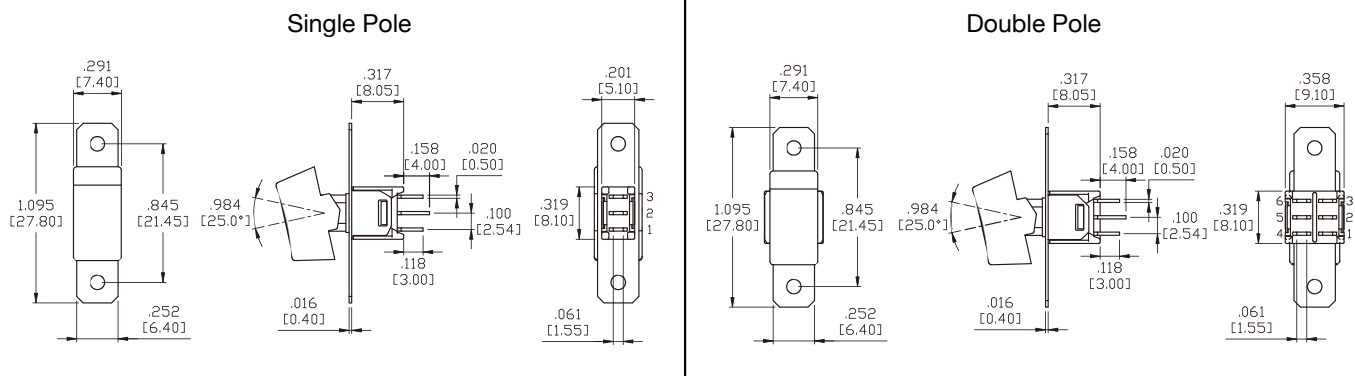


VS21

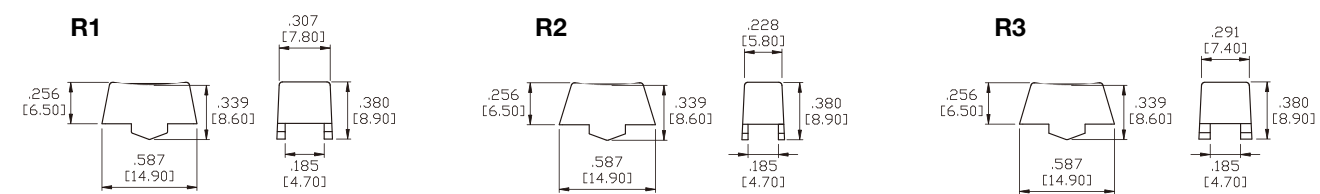


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

151-Series Dimensional Specifications: in. [mm]



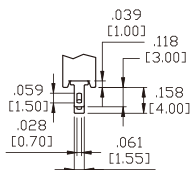
Actuator Options



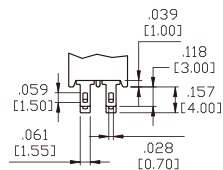
Termination Options

M1 STD. Solder Lug

Single Pole

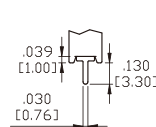


Double Pole

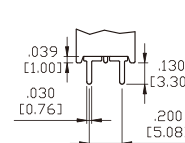


M2 PC Thru-Hole

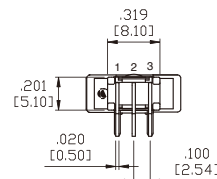
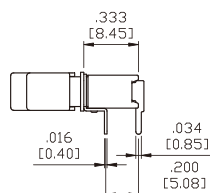
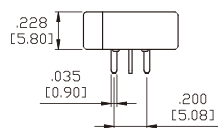
Single Pole



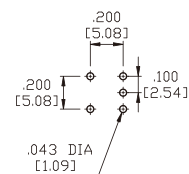
Double Pole



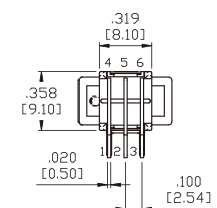
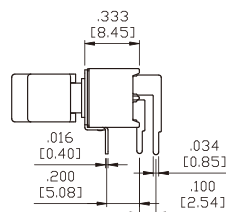
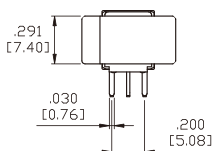
M6 Single Pole



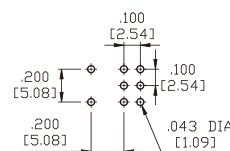
P.C.MOUNTING



M6 Double Pole



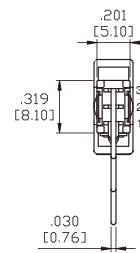
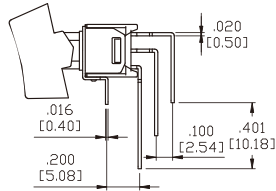
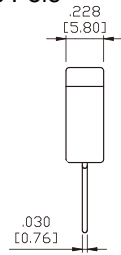
P.C.MOUNTING



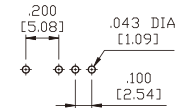
1S1-Series Dimensional Specifications: in. [mm]

Termination Options

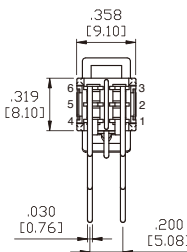
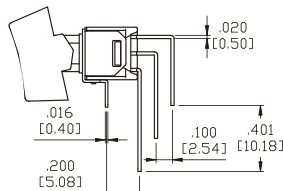
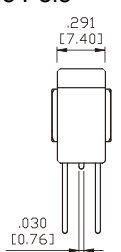
M7 Single Pole



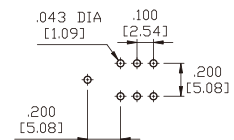
P.C.MOUNTING



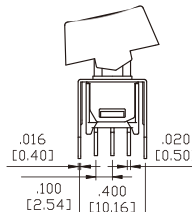
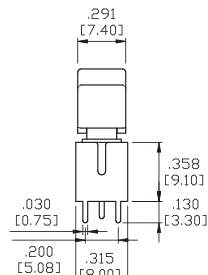
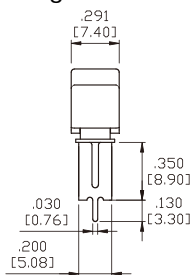
M7 Double Pole



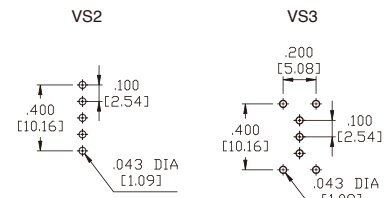
P.C.MOUNTING



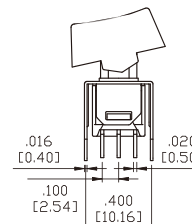
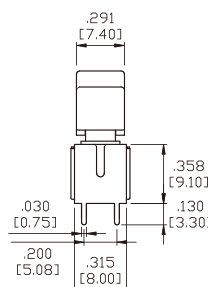
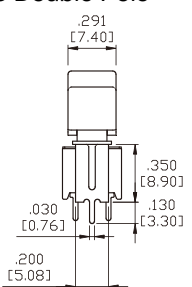
VS2-VS3 Single Pole



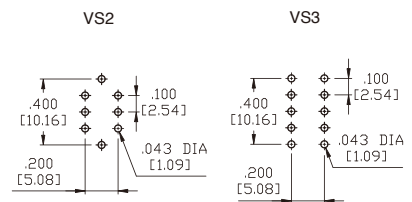
P.C.MOUNTING



VS2-VS3 Double Pole

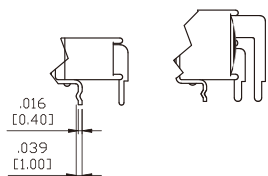


P.C.MOUNTING

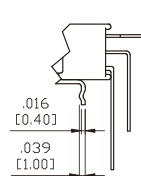


Snap-In Termination Options

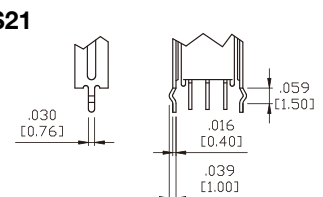
M61



M71

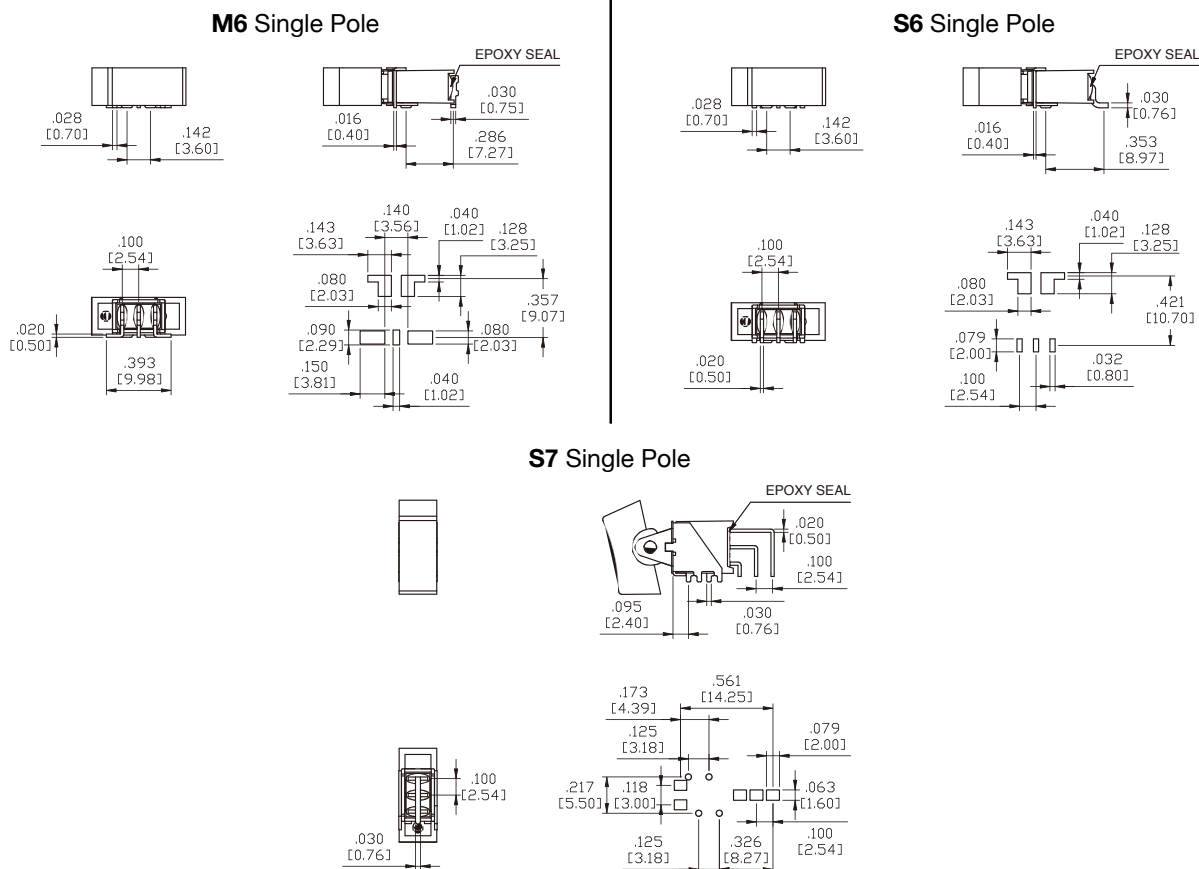


VS21

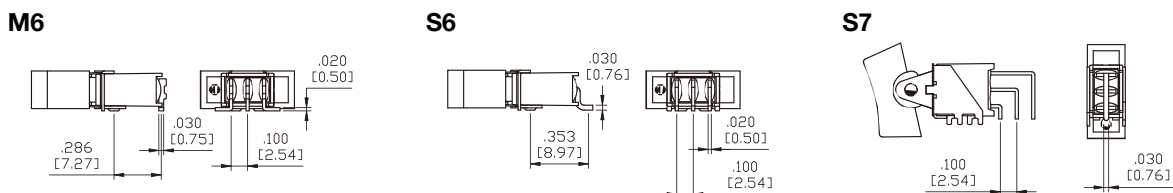


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

15M-Series Dimensional Specifications: in. [mm]



Termination Options



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.



1MS-Series



1M1-Series



1MS-Series

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 - SP 1 - R6 / 2 M6 G E

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

1 SERIES**1MS** Sealed Miniature Rocker 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

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)
6 *	ON	ON	ON
7 *	(ON)	ON	(ON)
8 *	ON	ON	(ON)
9 *	OFF	ON	(ON)

*Center Position Connects 2-3, 5-4, 8-9

4 ACTUATOR STYLE

R1 Standard Rocker **R4** Large Paddle
R2 Standard Paddle **R5** Large Rocker
R3 Medium Rocker **R6** Small Rocker
R7 Medium Paddle

5 ACTUATOR COLOR

1 White 2 Black 3 Red
 Black is standard. Other colors available, consult factory.

6 TERMINATION

M1 Solder Lug **VS2** PC Mount, U bracket
M2 PCB **VS3** PC Mount, U bracket
M3 Quick Connect **VS4** PC Mount, U bracket
M51 Wire Wrap **VS5** PC Mount, U bracket
M52 Wire Wrap **VS21** Snap-In, U bracket
M53 Wire Wrap **VS31** Snap-In, U bracket
M54 Wire Wrap **VS41** Snap-In, U bracket
M6 PC Mount, 90° horizontal **VS51** Snap-In, U bracket
M7 PC Mount, 90° vertical **U2** Vertical Mount, 3-Pole
U4 Snap-In, U bracket, 3-Pole

See page 16-18 for dimensional specifications.

7 CONTACTS / TERMINALS

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

8 EPOXY SEAL**E** Epoxy Seal 0 without Epoxy Seal

Notes:

Tin option not available with M1 and M3 terminals.

- 1 Movable contact and terminal 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 Terminal platings: tin over copper alloy
- 5 Terminal contact platings: gold over nickel alloy
- 6 Terminal contact platings: silver over nickel alloy

1M1 - SP 1 - R8 / 2 - M6 Q E

1 Series 2 Poles 3 Circuit 4 Actuator Style 5 Actuator Color 6 Frame Color 7 Termination 8 Contacts 9 Seal

1 SERIES**1M1** Miniature Rocker 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 ¹	ON	ON	ON
7 ¹	(ON)	ON	(ON)
8 ¹	ON	ON	(ON)
9 ²	NONE	ON	(ON)

4 ACTUATOR STYLE

R1 Standard Rocker **R5** Large rocker
R2 Standard Paddle **R6** Rocker & frame
R3 Medium Rocker **R7** Paddle & frame
R4 Large Paddle **R8** Rocker without frame
R9 Paddle without frame

5 ACTUATOR COLOR / 6 FRAME COLOR

0 No Frame* 2 Black
 1 White 3 Red
 Black is standard. Other colors available, consult factory.
 *Actuator style R8 or R9 only.

7 TERMINATION

M1 Solder Lug **VS3** PC Mount, U bracket
M2 PCB **VS4** PC Mount, U bracket
M3 Quick Connect **VS5** PC Mount, U bracket
M51 Wire Wrap **M61** Snap-In, U bracket, 90° horizontal
M52 Wire Wrap **M71** Snap-In, U bracket, 90° vertical
M53 Wire Wrap **VS21** Snap-In, U bracket
M54 Wire Wrap **VS31** Snap-In, U bracket
M6 PC Mount, 90° horizontal **VS41** Snap-In, U bracket
M7 PC Mount, 90° vertical **VS51** Snap-In, U bracket
VS2 PC Mount, U bracket **U4** Snap-In, U bracket, 3-Pole

See page 21-23 for dimensional specifications.

8 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ³	gold over silver	5A 125VAC or 28VDC, 2A 250VAC	UL, UL
K	gold ^{4,7}	tin ⁶	0.4VA max 20V max (AC/DC)	N/A
P	silver ^{3,8}	tin ⁶	5A 125VAC or 28VDC, 2A 250VAC	UL, UL
Q	silver ³	silver ³	5A 125VAC or 28VDC, 2A 250VAC	UL, UL
R	gold ⁴	gold ⁵	0.4VA max 20V max (AC/DC)	N/A

9 EPOXY SEAL**E** Epoxy Seal 0 without Epoxy Seal

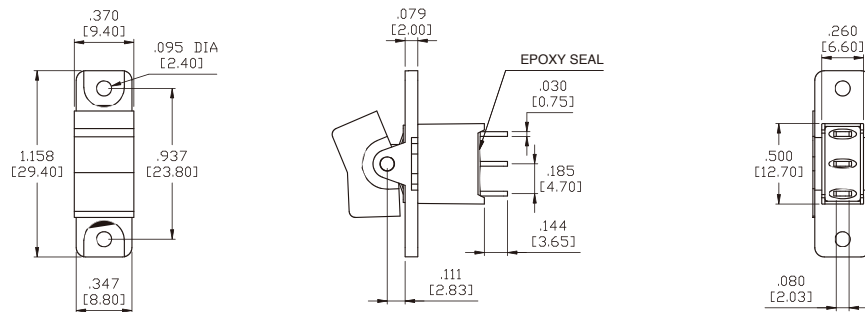
Notes:

Tin option not available with M1 and M3 terminals.

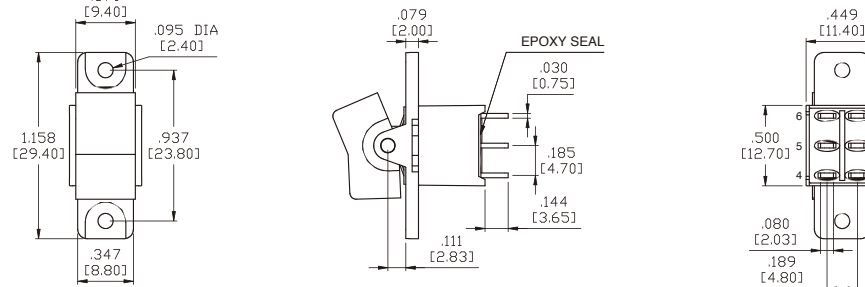
- 1 Double-Pole and Four-Pole only. Center position connects 2-3, 5-4, 8-9, 11-10
- 2 Double-Pole only
- 3 Movable contact and terminal platings: silver over copper alloy
- 4 Movable contact platings: gold over nickel over copper alloy
- 5 Terminal platings: gold over nickel over copper alloy
- 6 Terminal platings: tin over copper alloy
- 7 Terminal contact platings: gold over nickel alloy
- 8 Terminal contact platings: silver over nickel alloy

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

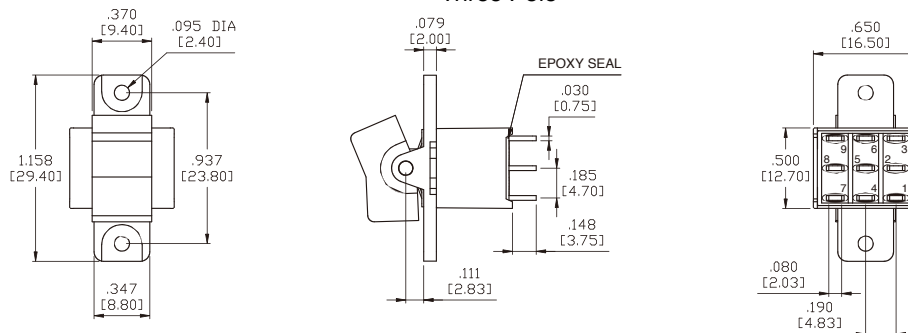
Single Pole



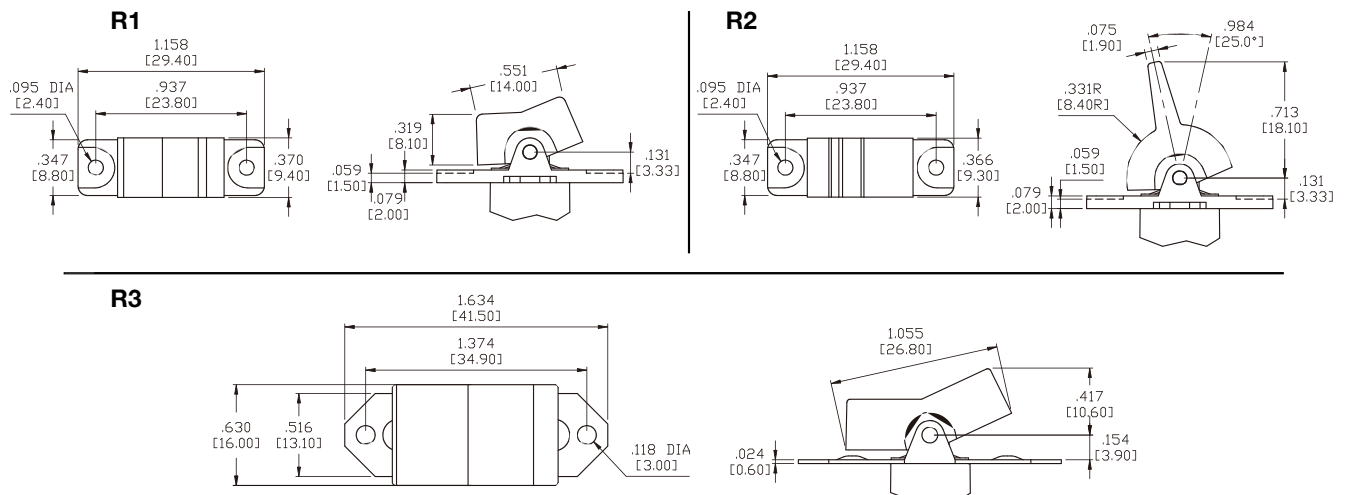
Double Pole



Three Pole

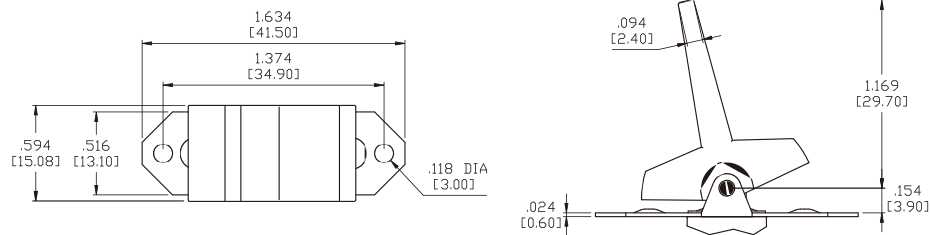
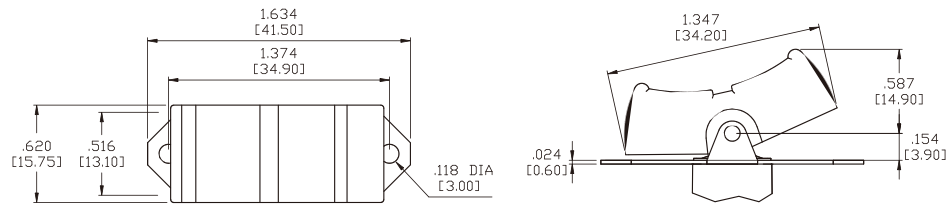
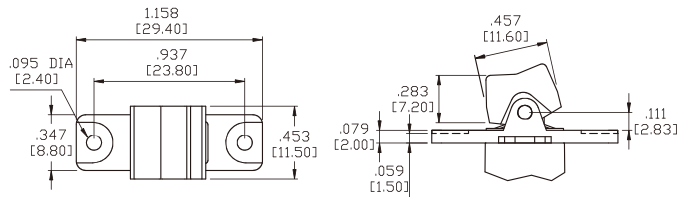
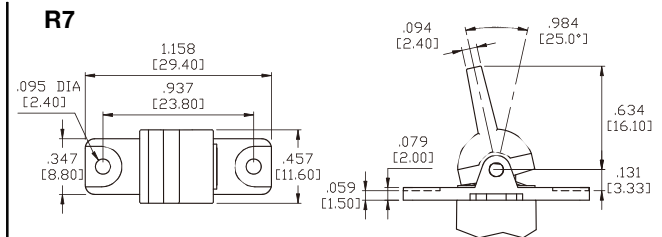


Actuator Options for Panel Rear Mount

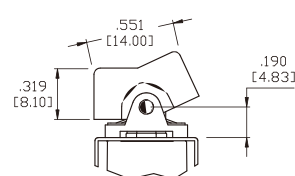
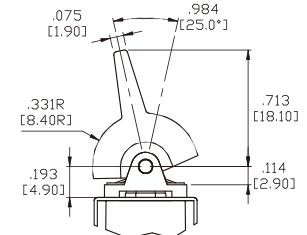
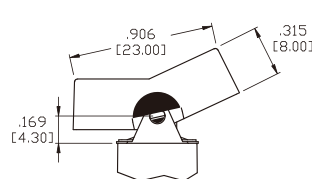
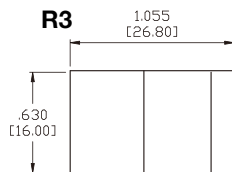
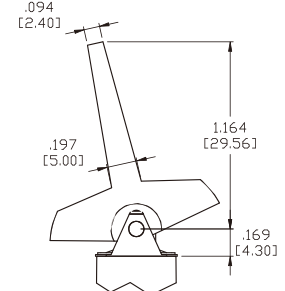
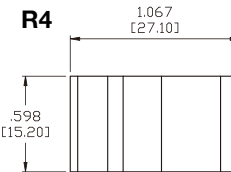
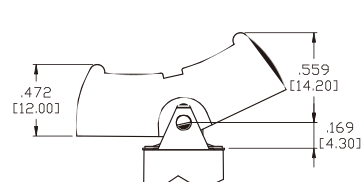
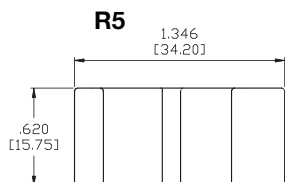
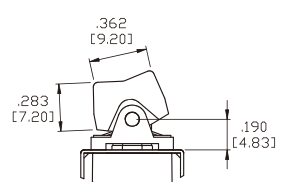
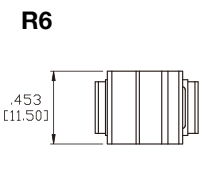


1MS-Series Dimensional Specifications: in. [mm]

Actuator Options for Panel Rear Mount

R4

R5

R6

R7


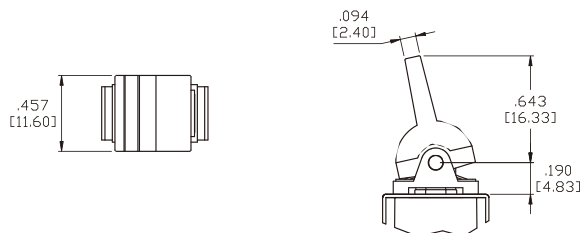
Actuator Options for PC Mount

R1

R2

R3

R4

R5

R6


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

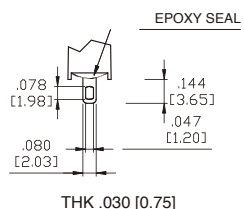
Actuator Options for PC Mount

R7

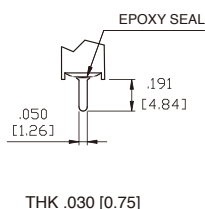


Termination Options

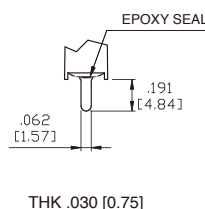
M1 Standard Solder Lug



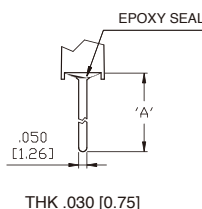
M2 PC Thru-Hole



M3 Quick Connect

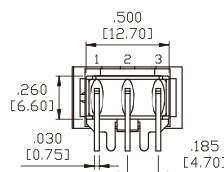
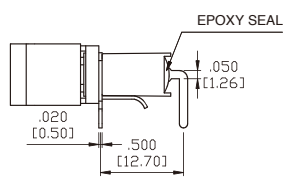
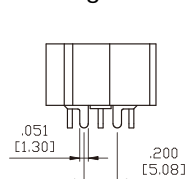


M5 Wire Wrap

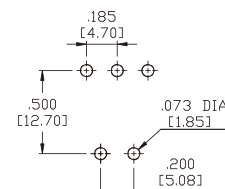


OPTION CODE	DIM.'A'
M5-1	.711 [18.05]
M5-2	.924 [23.48]
M5-3	.386 [9.80]
M5-4	1.022 [25.97]

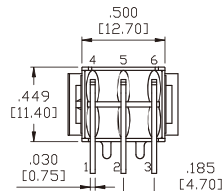
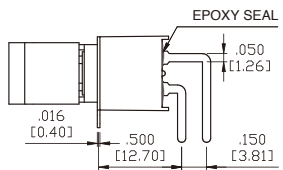
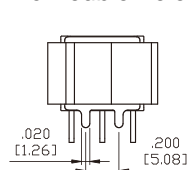
M6 Single Pole



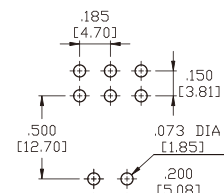
P.C.MOUNTING



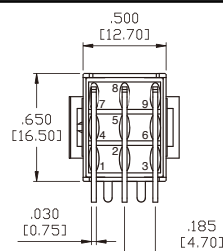
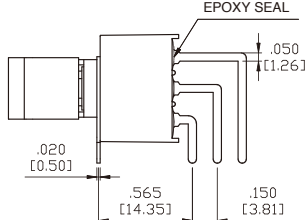
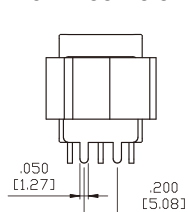
M6 Double Pole



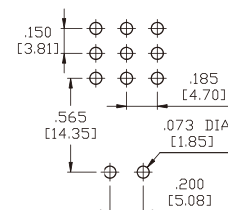
P.C.MOUNTING



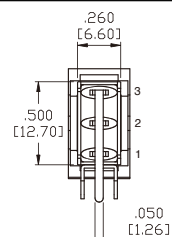
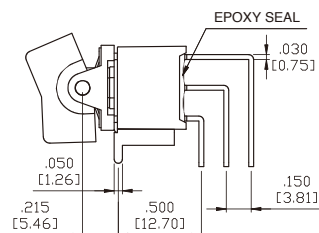
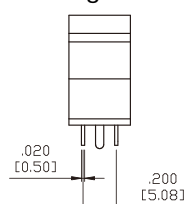
M6 Three Pole



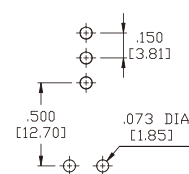
P.C.MOUNTING



M7 Single Pole



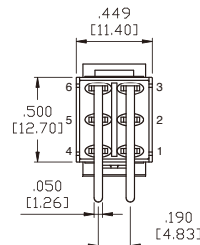
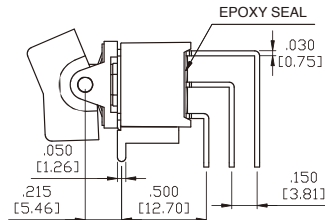
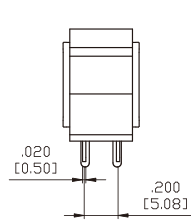
P.C.MOUNTING



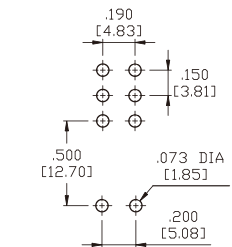
1MS-Series Dimensional Specifications: in. [mm]

Termination Options

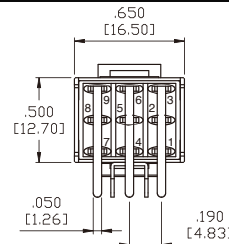
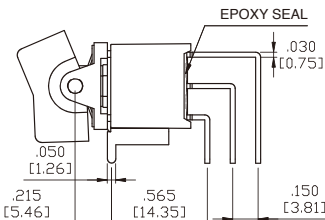
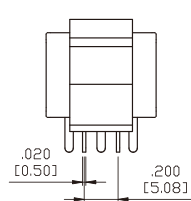
M7 Double Pole



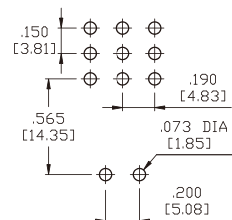
P.C.MOUNTING



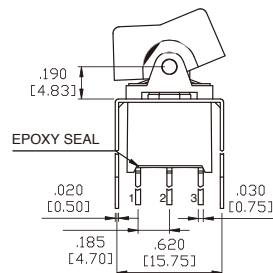
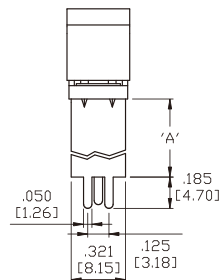
M7 Three Pole



P.C.MOUNTING

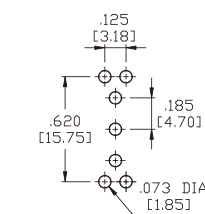


VS2-VS3 Single Pole

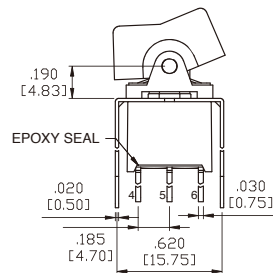
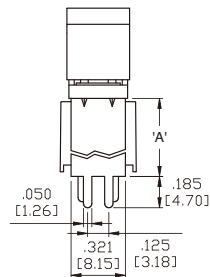


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

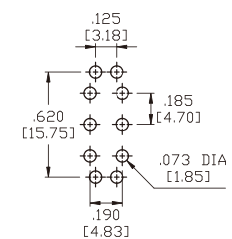


VS2-VS3 Double Pole

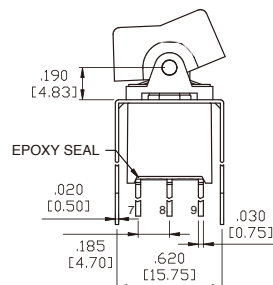
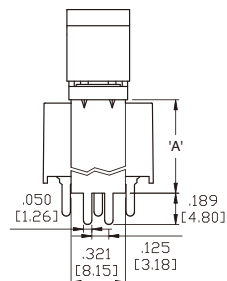


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

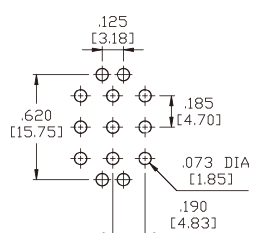


U2-VS3 Three Pole



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

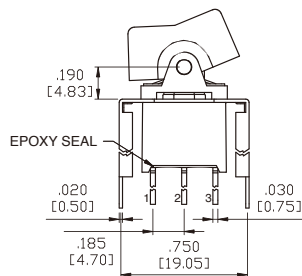
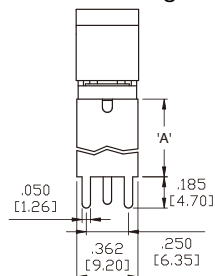
P.C.MOUNTING



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

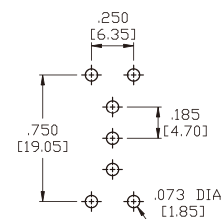
Termination Options

VS4-VS5 Single Pole

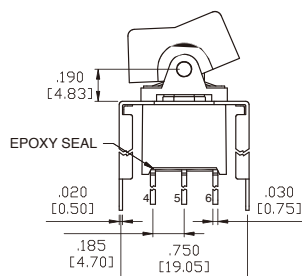
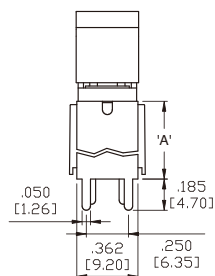


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

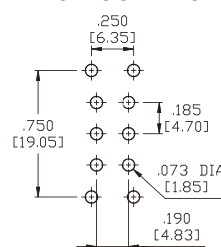


VS4-VS5 Double Pole

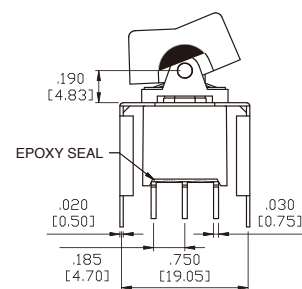
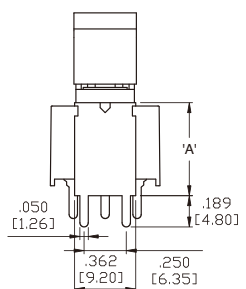


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

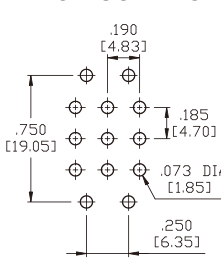


U4-VS5 Three Pole



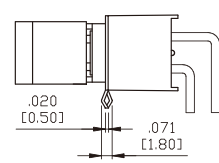
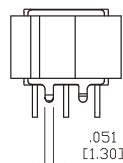
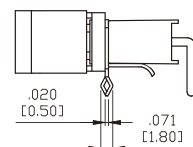
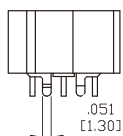
OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

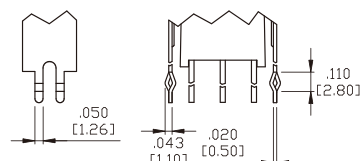


Snap-In Termination Options

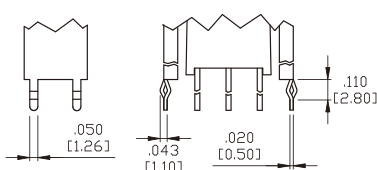
M61



VS21, VS31



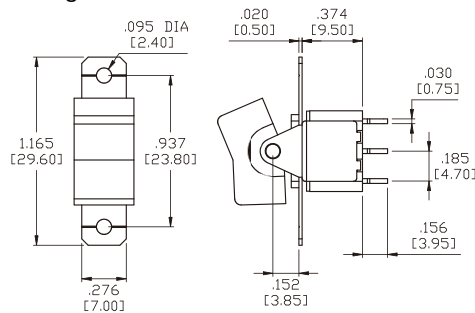
VS41, VS51



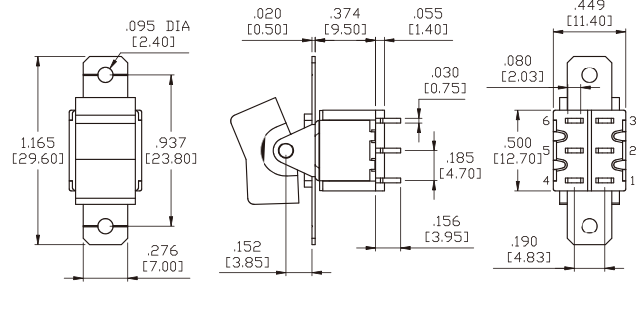
* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

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

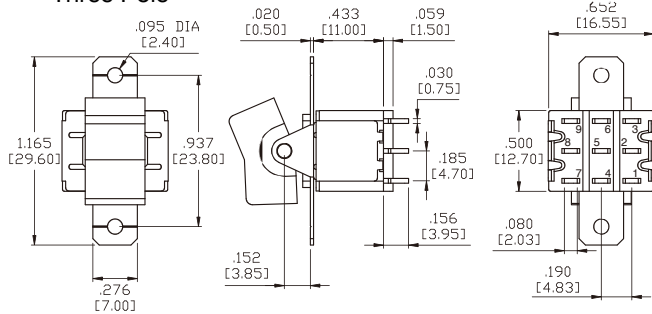
Single Pole



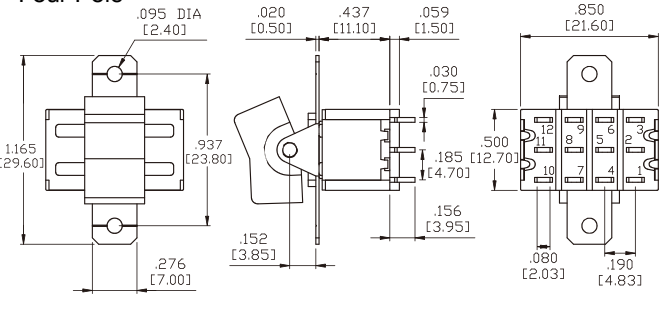
Double Pole



Three Pole

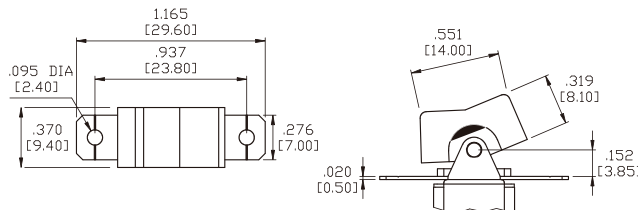


Four Pole

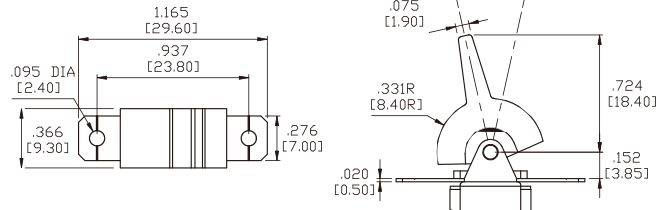


Actuator Options for Panel Rear Mount

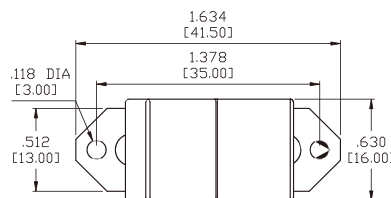
R1



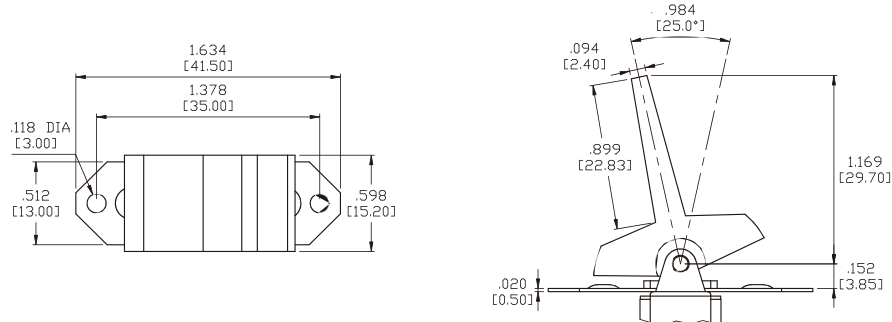
R2



R3

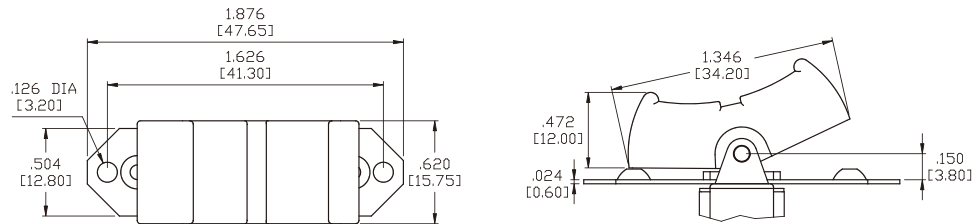


R4

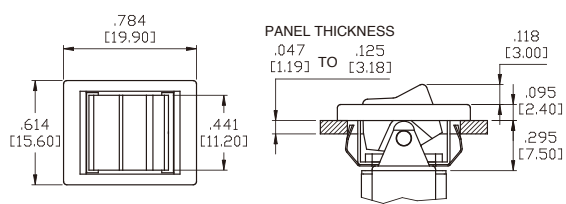
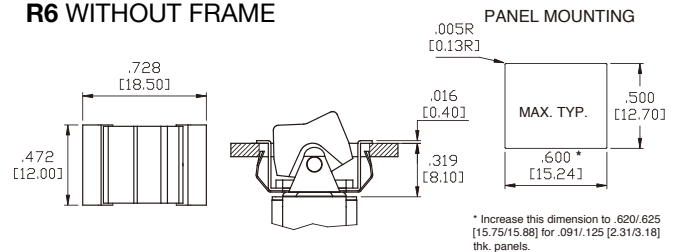
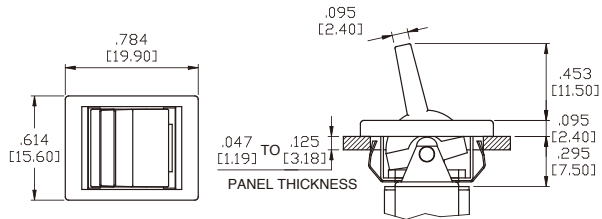
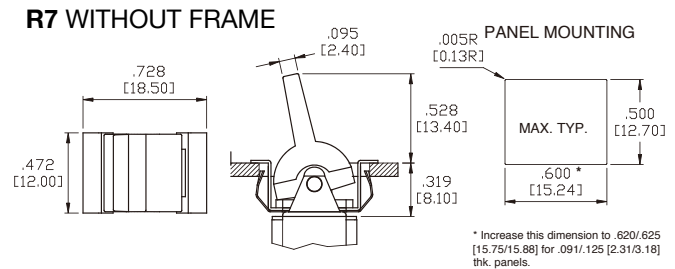


1M1-Series Dimensional Specifications: in. [mm]

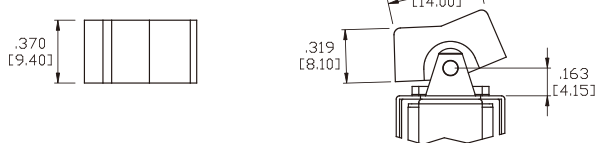
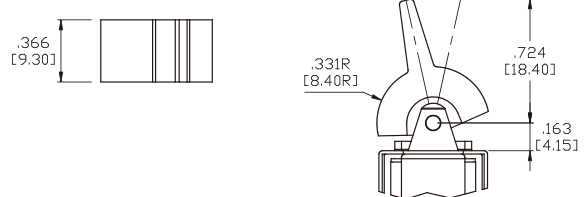
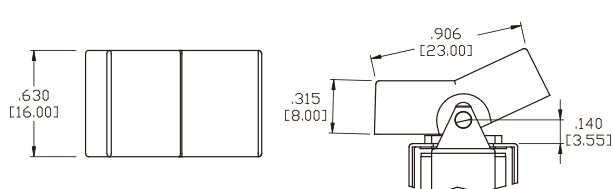
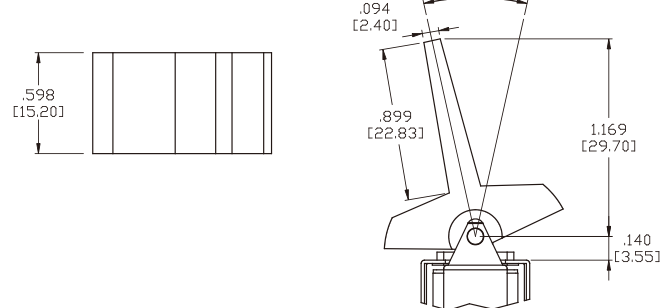
Actuator Options for Panel Rear Mount

R5


Actuator Options for Snap-In Mount

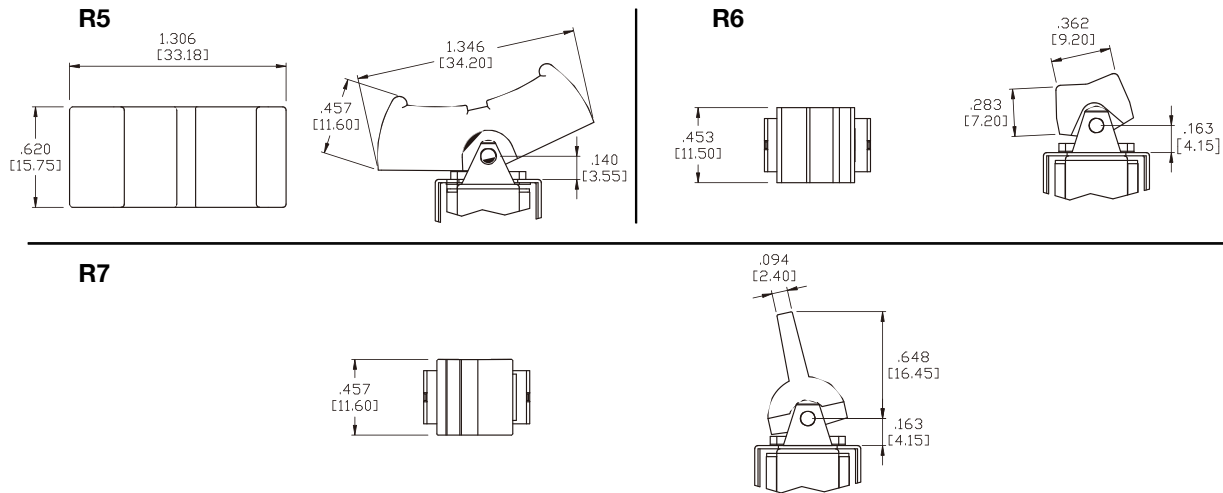
R6

R6 WITHOUT FRAME

R7

R7 WITHOUT FRAME


Actuator Options for PC Mount

R1

R2

R3

R4


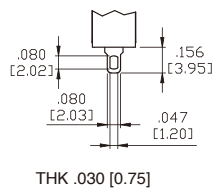
1M1-Series Dimensional Specifications: in. [mm]

Actuator Options for PC Mount

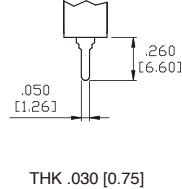


Termination Options

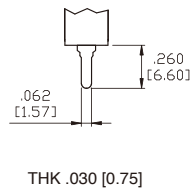
M1 Standard Solder Lug



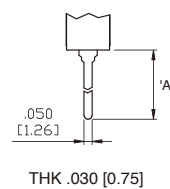
M2 PC Thru-Hole



M3 Quick Connect

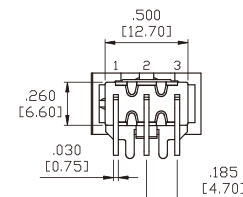
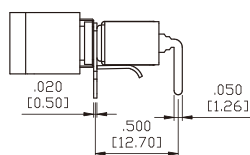
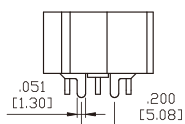


M5 Wire Wrap

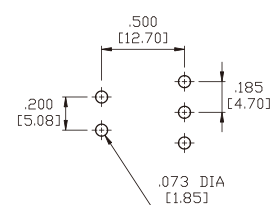


OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

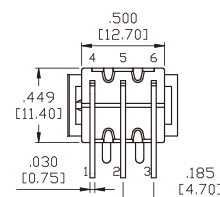
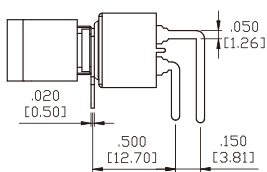
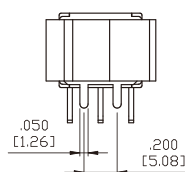
M6 Single Pole



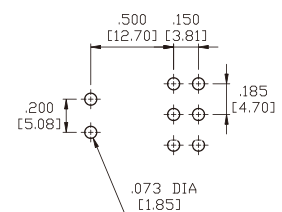
P.C.MOUNTING



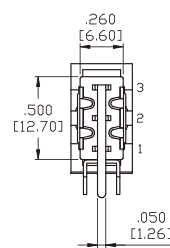
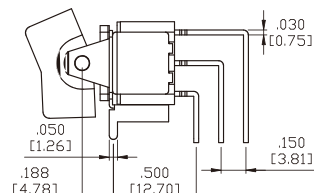
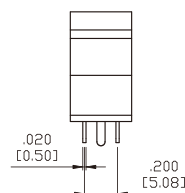
M6 Double Pole



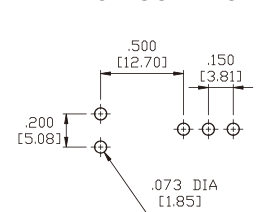
P.C.MOUNTING



M7 Single Pole



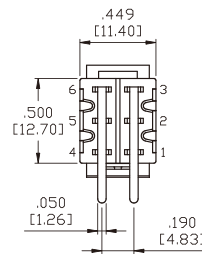
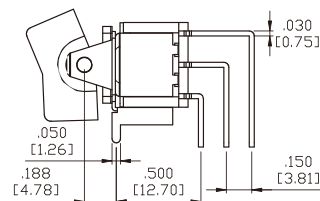
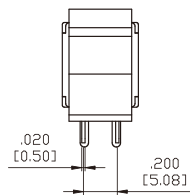
P.C.MOUNTING



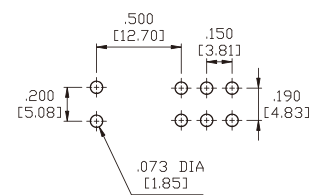
1M1-Series Dimensional Specifications: in. [mm]

Termination Options

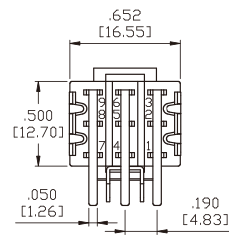
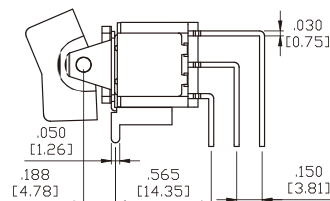
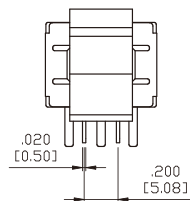
M7 Double Pole



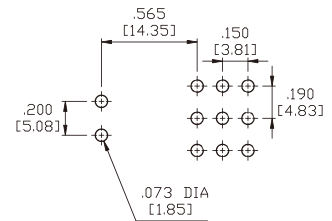
P.C.MOUNTING



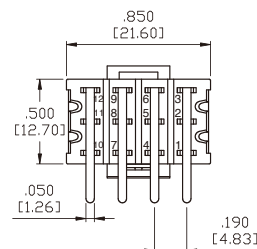
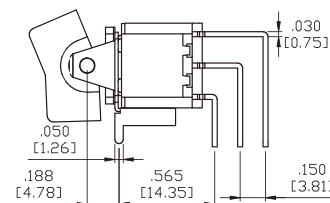
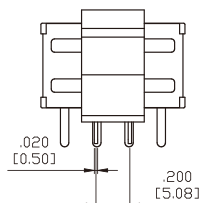
M7 Three Pole



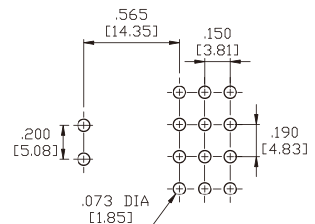
P.C.MOUNTING



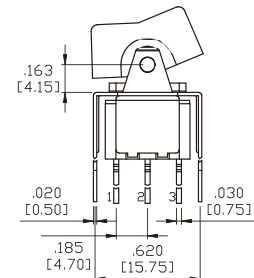
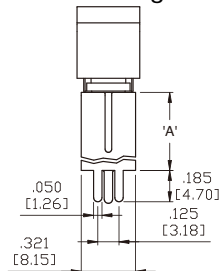
M7 Four Pole



P.C.MOUNTING

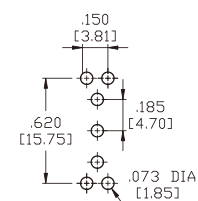


VS2-VS3 Single Pole

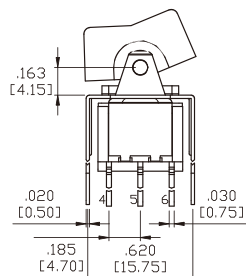
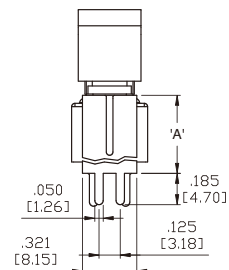


OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

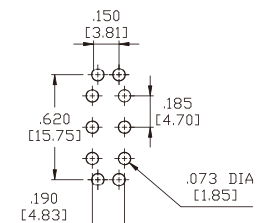


VS2-VS3 Double Pole



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

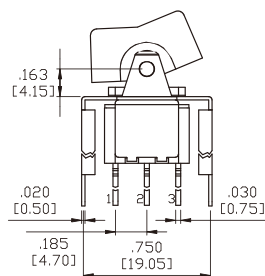
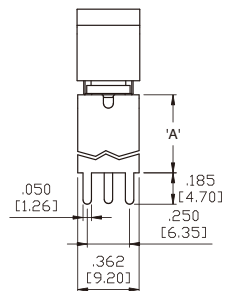
P.C.MOUNTING



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

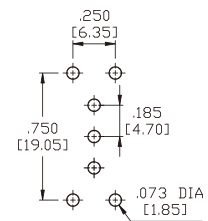
Termination Options

VS4-VS5 Single Pole

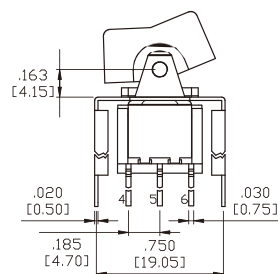
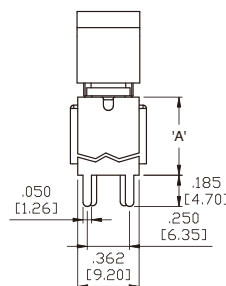


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

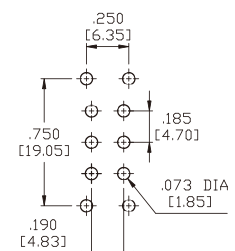


VS4-VS5 Double Pole

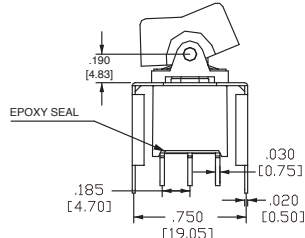
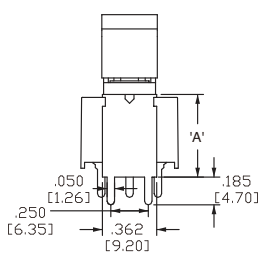


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

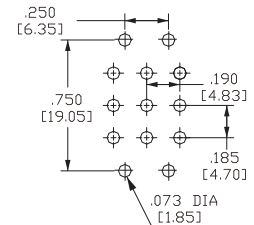


U4-VS5 Three Pole



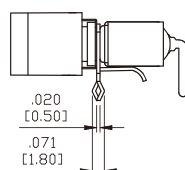
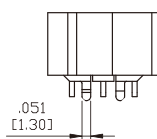
OPTION CODE	DIM. 'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

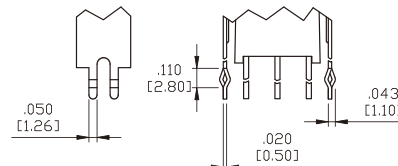


Snap-In Termination Options

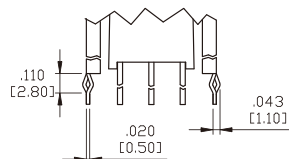
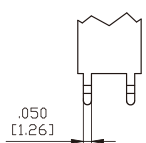
M61



VS21, VS31



VS41, VS51

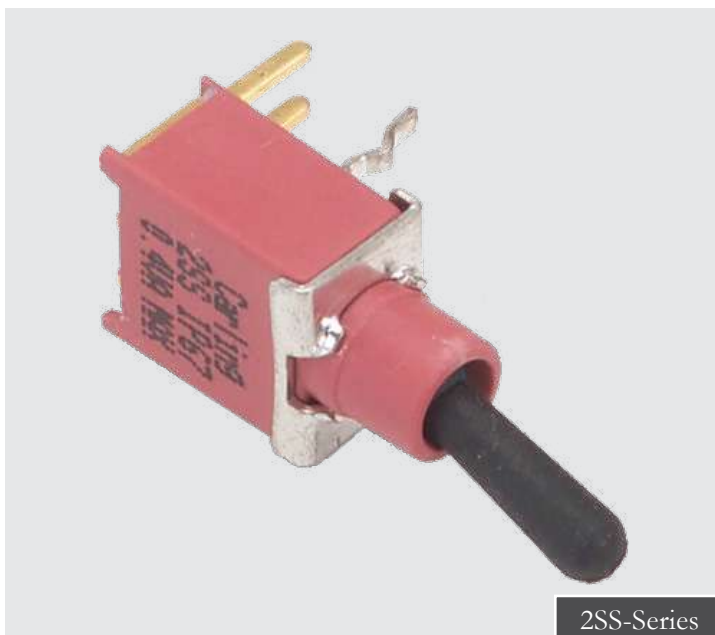


* PC Mounting for M61, VS21, VS31, VS41, VS51 refer to M6, VS2, VS3, VS4, VS5 respectively.

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

Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)



2SS-Series
Sealed
Sub-Miniature
Toggle Switch



2S1-Series
Sub-Miniature
Toggle Switch



2SM-Series
Sealed Surface Mount
Sub-Miniature
Toggle Switch

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	30,000 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	2SS & 2SM-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210
Actuator Travel	25°

Material

Case	all UL94 V-0 <i>2S1-Series:</i> Dially phthalate (DAP) <i>2SS-Series:</i> Glass filled nylon 6/6, flame retardant, heat stabilized <i>2SM-Series:</i> Glass filled nylon 4/6, flame retardant, heat stabilized
Rocker	<i>2S1-Series:</i> Brass, chrome plated. <i>2SS & 2SM-Series:</i> Brass, chrome plated or nylon, internal o-ring sealed
Bushing	<i>2S1-Series:</i> Brass, nickel plated <i>2SS-Series:</i> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) <i>2SM-Series:</i> Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0)
Housing	Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Epoxy

2SS - **MSP** **1** - **T1** - **B4** - **M6** **G** **E**

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

1 SERIES

2SS Sealed Sub-Miniature Toggle Switch

2 POLES

MSP Single pole - uses terminals 1, 2 & 3
MDP Double pole - uses terminals 1, 2, 3, 4, 5 & 6

3 CIRCUIT

() - momentary

Position:	1	2	3
	2-3, 5-6	Connected Terminals	2-1, 5-4
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

4 ACTUATOR STYLE / LENGTH

T1 Round toggle .421" [10.70 mm]
T2 Round toggle .240" [6.10 mm]
T3 Round toggle .342" [8.70 mm]
T4 Round toggle .551" [14.00 mm]
P1 ESD resistant toggle .425" [10.80 mm]
P2 ESD resistant toggle .268" [6.80 mm]
P3 ESD resistant toggle .244" [6.20 mm]
P4 ESD resistant toggle .291" [7.40 mm]

5 BUSHING

B1 Threaded
B4 Unthreaded

6 TERMINATION

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

See page 27-28 for dimensional specifications.

7 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ¹	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
K	gold ²	tin ³	0.4VA max 20V max (AC/DC)	IP67
P	silver ¹	tin ³	3A 125VAC or 28VDC, 1.5A 250VAC	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:

Tin option not available with M1 terminal.

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

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

2S1 - **MSP** **1** - **T1** - **B4** - **M6** **Q** **E**

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

1 SERIES**2S1** Sub-Miniature Toggle Switch**2 POLES****MSP** Single pole - uses terminals 1, 2 & 3**MDP** Double pole - uses terminals 1, 2, 3, 4, 5 & 6**3 CIRCUIT**

() - momentary

Position:	1	2	3
	2-3, 5-6	Connected Terminals	2-1, 5-4
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

4 ACTUATOR STYLE / LENGTH ⁹

T1 Round toggle .374" [9.50 mm] **T3** Round toggle .311" [7.90 mm]
T2 Round toggle .236" [6.00 mm] **T4** Round toggle .449" [11.40 mm]

5 BUSHING ¹

B1 Threaded Standard, keyway
B2 Non-Threaded Standard, keyway
B3 Threaded Short, keyway
B4 Non-Threaded Short, keyway
B5 High Torque, flat, .276"
B6 High Torque, keyway, .276"
B7 Long threaded
B8 Non threaded Long, keyway

6 TERMINATION

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

See page 29-30 for dimensional specifications.

7 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ²	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	
K ⁸	gold 3,6	tin ⁵	0.4VA max 20V max (AC/DC)	N/A
P ⁸	silver 2,7	tin ⁵	3A 125VAC or 28VDC, 1.5A 250VAC	
Q	silver ²	silver ²	3A 125VAC or 28VDC, 1.5A 250VAC	
R	gold ³	gold ⁴	0.4VA max 20V max (AC/DC)	N/A

8 EPOXY SEAL**E** Epoxy Seal 0 without Epoxy Seal

Notes: Tin option available with PC type terminations only.

1 All Switches come with standard nut, washer and locking ring shipped bulk. B5 & B7 bushing styles use small locking ring. See page 76-77.

2 Movable contact and terminal platings: silver over copper alloy

3 Movable contact and terminal platings: gold over nickel over copper alloy

4 Terminal platings: gold over nickel over copper alloy

5 Terminal platings: tin over copper alloy

6 Terminal contact platings: gold over nickel alloy

7 Terminal contact platings: silver over nickel alloy

8 Not available with M1 terminal

9 Lengths shown are with B1 - B4 bushings.

For B5 & B6 subtract .108", for B7 & B8 subtract .043"

2SM - **MSP** **1** - **T1** - **M6** **G** **E**

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

1 SERIES**2SM** Sealed Surface Mount Sub-Miniature Toggle Switch**2 POLES****MSP** Single pole - uses terminals 1, 2 & 3**3 CIRCUIT**

() - momentary

Position:	1	2	3
	2-3	Connected Terminals	2-1
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON
4	(ON)	OFF	(ON)
5	ON	OFF	(ON)

4 ACTUATOR STYLE / LENGTH ¹

T1 Round toggle .425" [10.80 mm]
T2 Round toggle .240" [6.10 mm]
P1 ESD resistant plastic toggle .425" [10.80 mm]
P2 ESD resistant plastic toggle .268" [6.80 mm]
P3 ESD resistant plastic toggle .244" [6.20 mm]
P4 ESD resistant plastic toggle .291" [7.40 mm]

5 TERMINATION

K6 Surface Mount, .433" [11.00 mm]
L6 Surface Mount, .354" [9.00 mm]
M6 Surface Mount, 90° flat, .286" [7.26 mm]
M7 Surface Mount, 90° vertical
S6 Surface Mount, 90°, .353" [8.96 mm]

See page 31 for dimensional specifications.

6 CONTACTS / TERMINALS

	Contact Material	Terminal Plating	Rating	Approvals
G	silver ²	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
K	gold ³	tin ⁴	0.4VA max 20V max (AC/DC)	IP67
P	silver ²	tin ⁴	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
Q	silver ²	silver ²	3A 125VAC or 28VDC, 1.5A 250VAC	IP67
R	gold ³	gold ³	0.4VA max 20V max (AC/DC)	IP67

7 EPOXY SEAL**E** Epoxy Seal 0 without Epoxy Seal**8 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:

Tin option available with PC type terminations only.

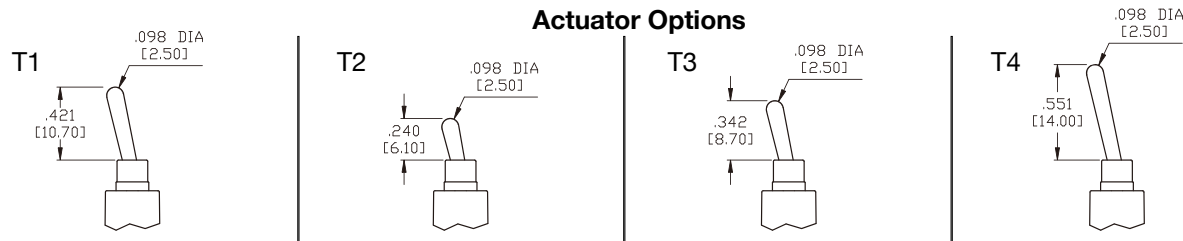
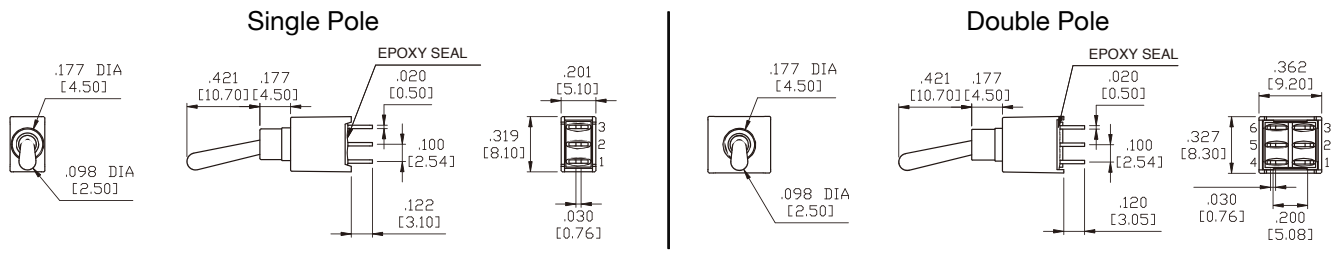
1 Bushing is unthreaded .177" [4.50 mm] height

2 Movable contact & terminal platings: silver over copper alloy

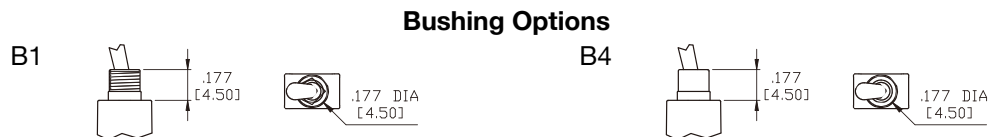
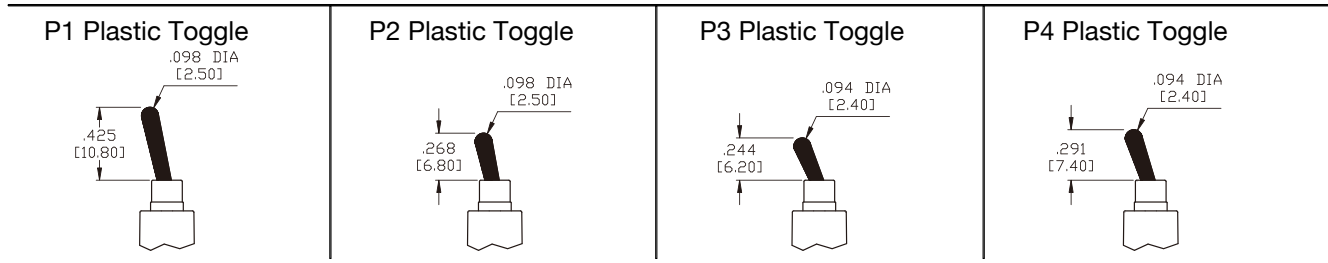
3 Movable contact & terminal platings: gold over nickel over copper alloy

4 Terminal platings: tin over nickel over copper alloy

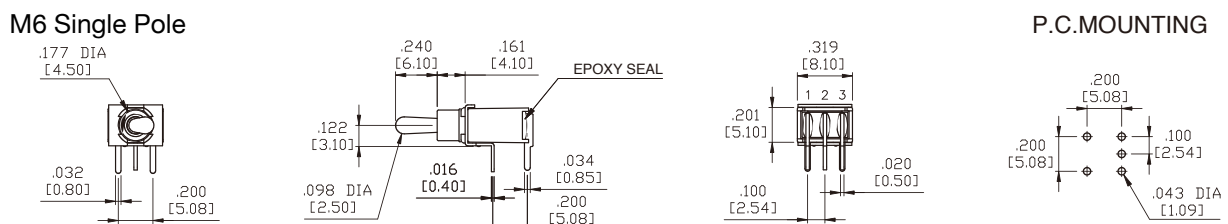
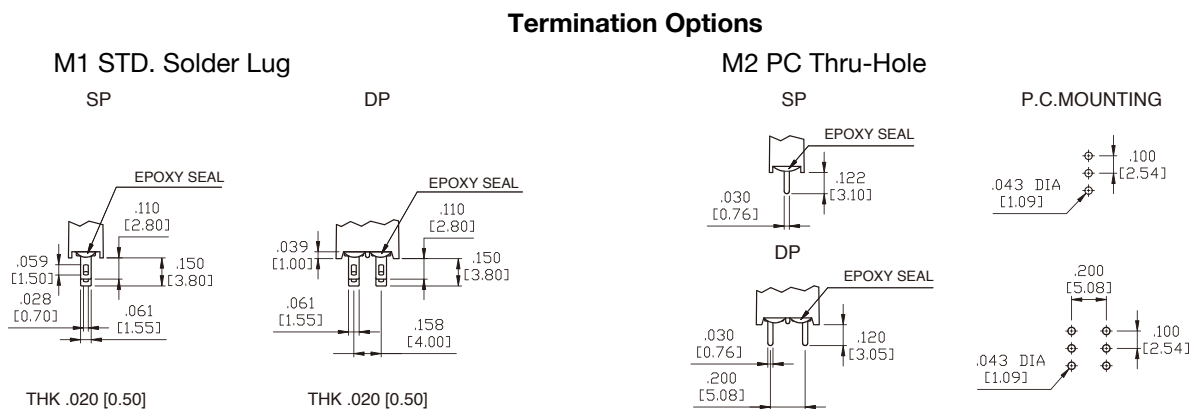
2SS-Series Dimensional Specifications: in. [mm]



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



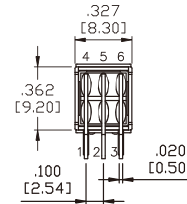
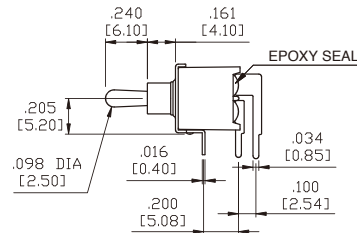
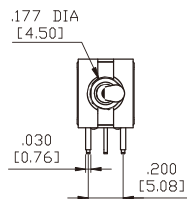
* Subtract 2.55mm from toggle length for B1 bushing.



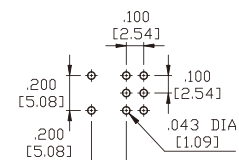
2SS-Series Dimensional Specifications: in. [mm]

Termination Options

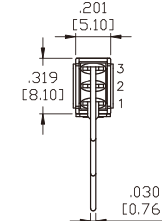
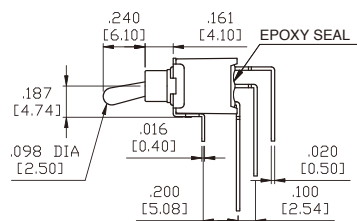
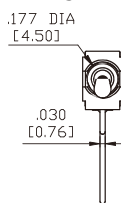
M6 Double Pole



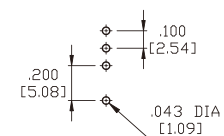
P.C.MOUNTING



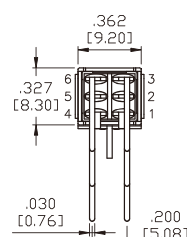
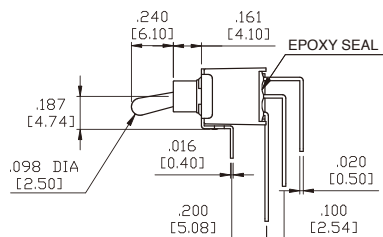
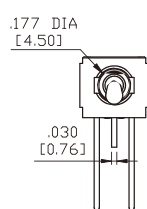
M7 Single Pole



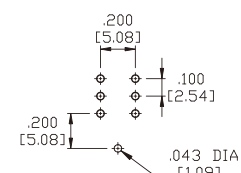
P.C.MOUNTING



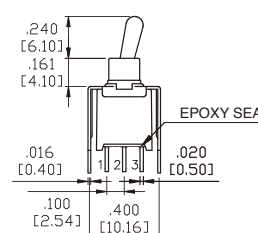
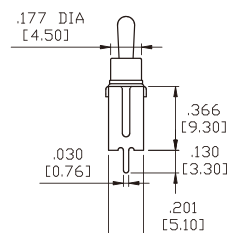
M7 Double Pole



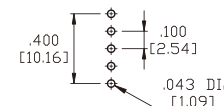
P.C.MOUNTING



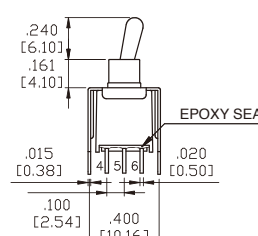
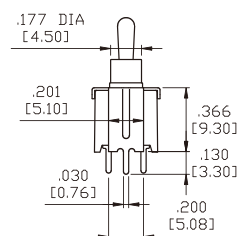
VS2 Single Pole



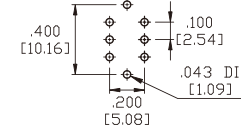
P.C.MOUNTING



VS2 Double Pole

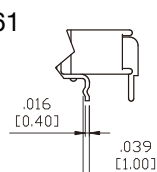


P.C.MOUNTING

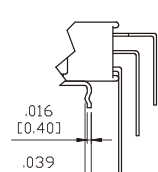


Snap-In Termination Options

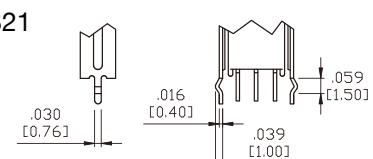
M61



M71

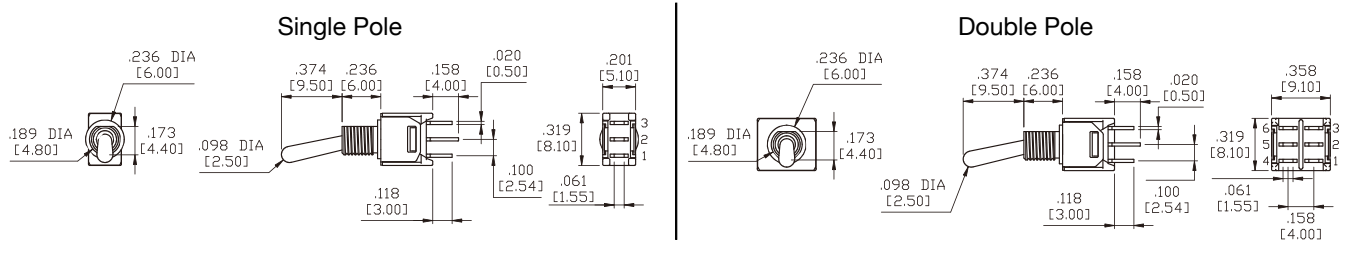


VS21

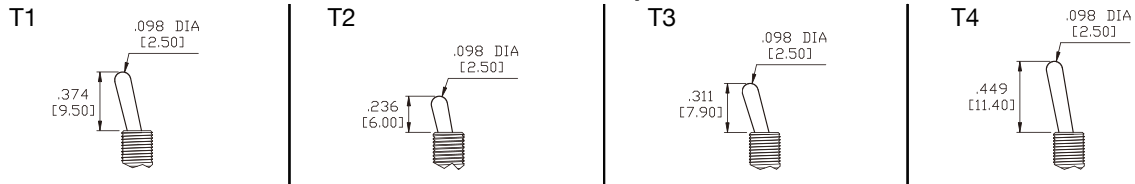


* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

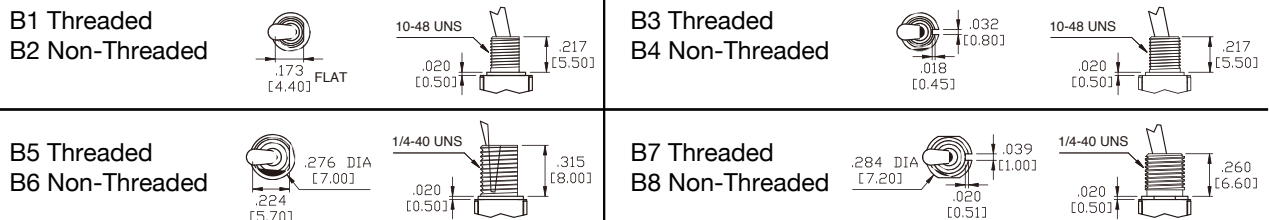
2S1-Series Dimensional Specifications: in. [mm]



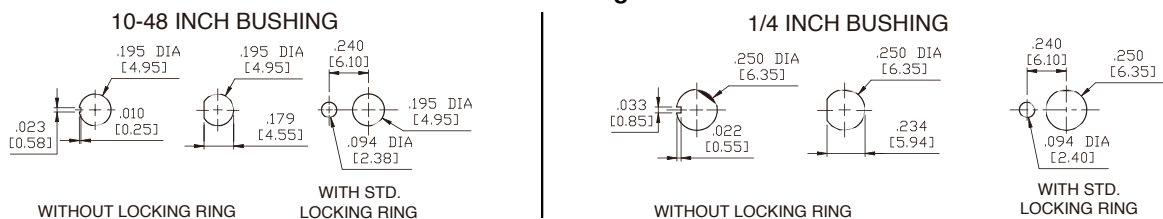
Actuator Options



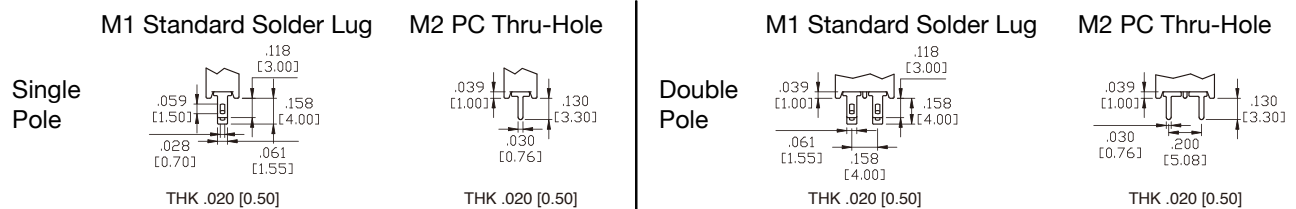
Bushing Options



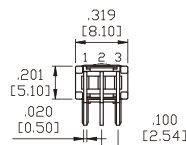
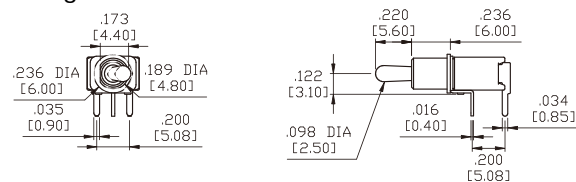
Panel Mounting



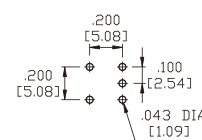
Termination Options



M6 Single Pole



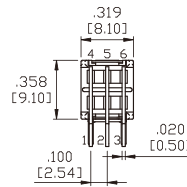
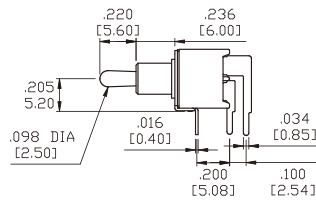
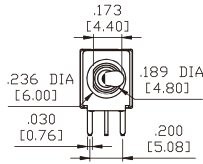
P.C. MOUNTING



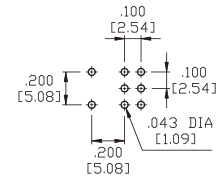
2S1-Series Dimensional Specifications: in. [mm]

Termination Options

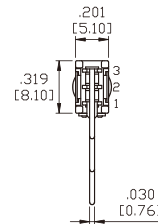
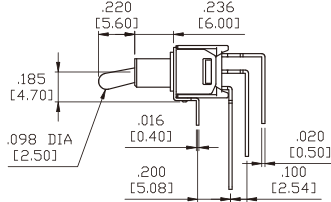
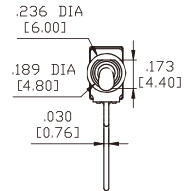
M6 Double Pole



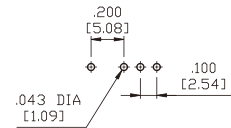
P.C.MOUNTING



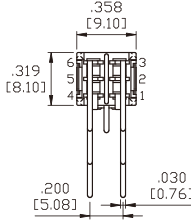
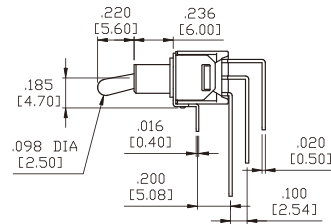
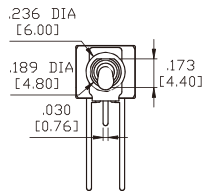
M7 Single Pole



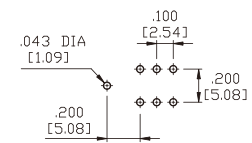
P.C.MOUNTING



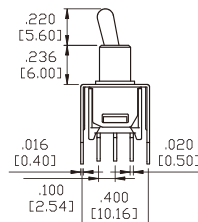
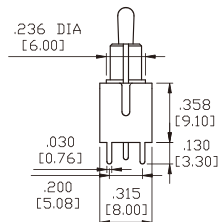
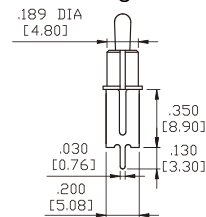
M7 Double Pole



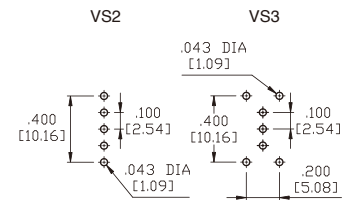
P.C.MOUNTING



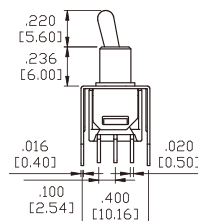
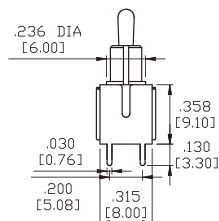
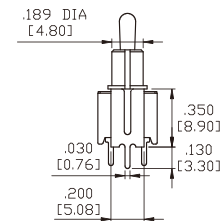
VS2-VS3 Single Pole



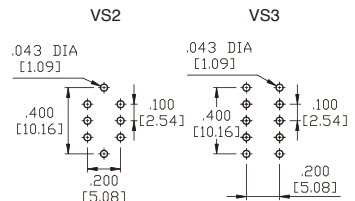
P.C.MOUNTING



VS2-VS3 Double Pole

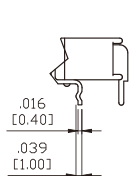


P.C.MOUNTING

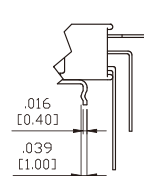


Snap-In Termination Options

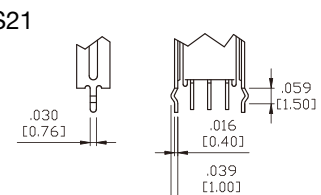
M61



M71



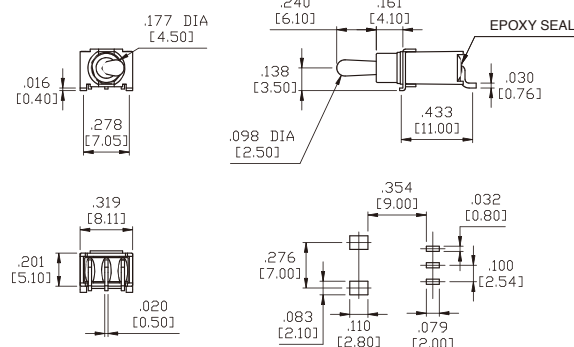
VS21



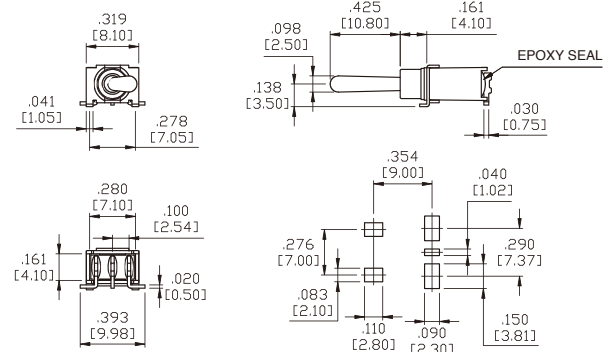
* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

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

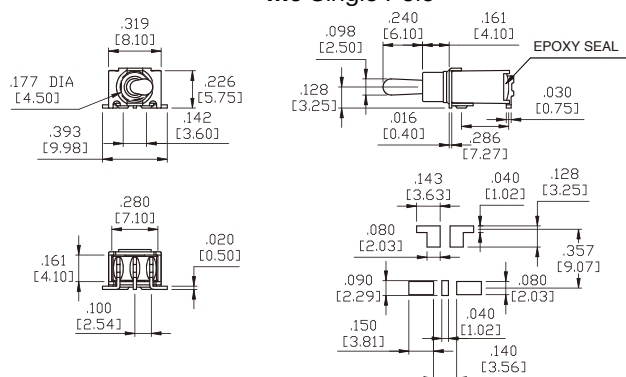
K6 Single Pole



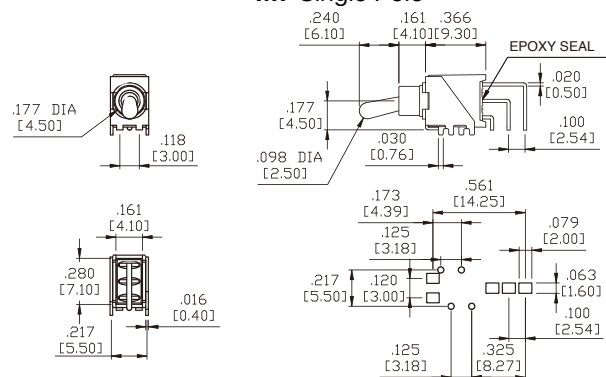
L6 Single Pole



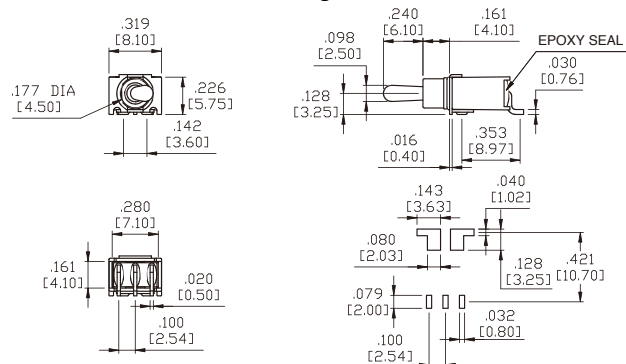
M6 Single Pole



M7 Single Pole

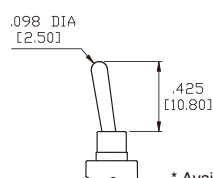


S6 Single Pole



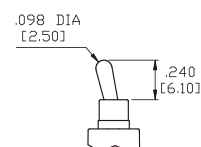
Actuator Options

T1

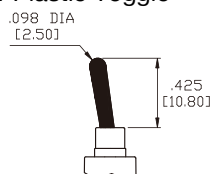


* Available with L6, S6, K6, M7 terminals only.

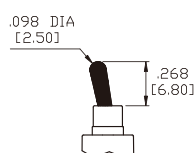
T2



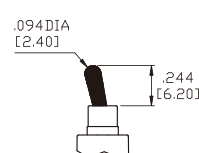
P1 Plastic Toggle



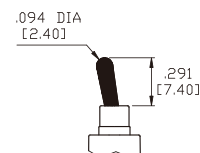
P2 Plastic Toggle



P3 Plastic Toggle



P4 Plastic Toggle



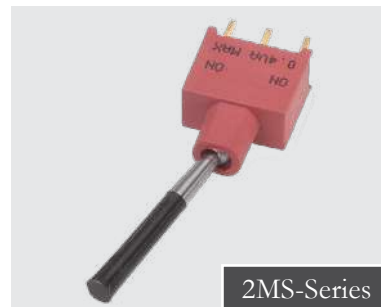
2M-Series

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.



2M1H-Series



2MS-Series



2M1-Series

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:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)



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> Dially 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 Stainless Steel
Housing	<i>2MS-Series:</i> Nylon (UL 94V-0)
Bracket	<i>2M1-Series:</i> Stainless Steel
Actuator Pivot Retainer	<i>2MS-Series:</i> Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Epoxy

2M1H - DP1 - TJ - BK - M2 R E

¹
Series

²
Pole / Circuit

³
Actuator Style

⁴
Bushing

⁵
Termination

⁶
Contacts

⁷
Seal

1 SERIES

2M1H Premium Sealed Miniature Toggle Switch

2 POLE / CIRCUIT

() - momentary

Position:	1	2	3
	2-3, 5-6	Connected Terminals	2-1, 5-4
SP1	ON	NONE	ON
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	US, 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	US, 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	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	IP67
Q silver ¹	silver ¹	5A 125VAC or 28VDC, 2A 250VAC	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		3 CAP COLOR	
2M1	Fits 2M1H, 2MS or 2M1	1	White
2 TOGGLE CAP SIZE		2	Black
T1	10.6 mm	3	Red
T2	7.6 mm	5	Yellow
		6	Green
		7	Blue

Optional Dress and Knurled Nuts

2M1

-

HDW3

1

Series

2

Nut

1 SERIES		2 NUT	
2M1	Fits 2M1H, 2MS or 2M1	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		2 RUBBER BOOT SEAL	
2M1	Fits 2M1H, 2MS or 2M1	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

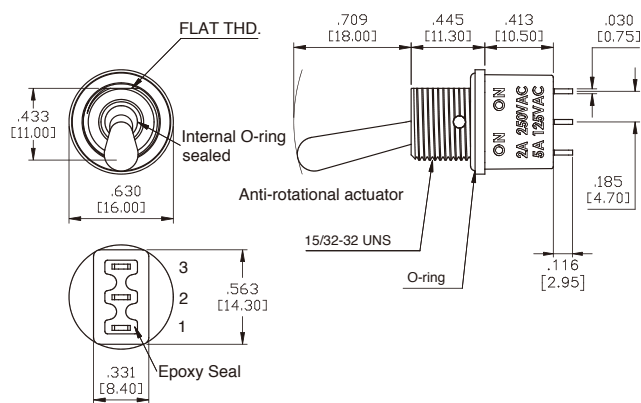
2

Rubber O-Ring

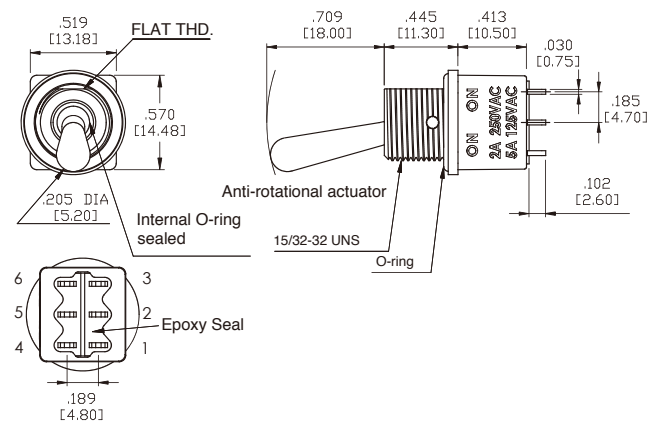
1 SERIES		2 RUBBER O-RING	
3MNH	Fits 3MNH or 2M1H	WCP-0872	For 15/32 bushing option

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

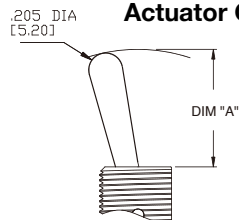
Single Pole



Double Pole

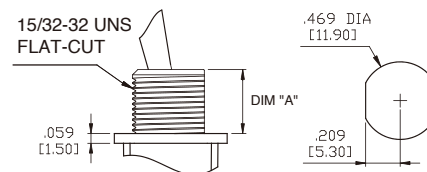


Actuator Options



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

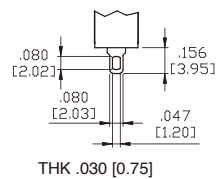
Bushing Options & Mounting



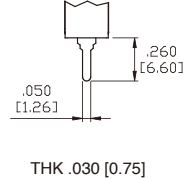
OPTION CODE	DIM. "A"
BK	.386 [9.80]

Termination Options

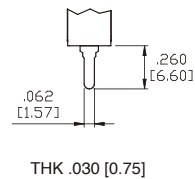
M1 Standard Solder Lug



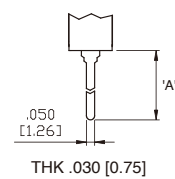
M2 PC Thru-Hole



M3 Quick Connect



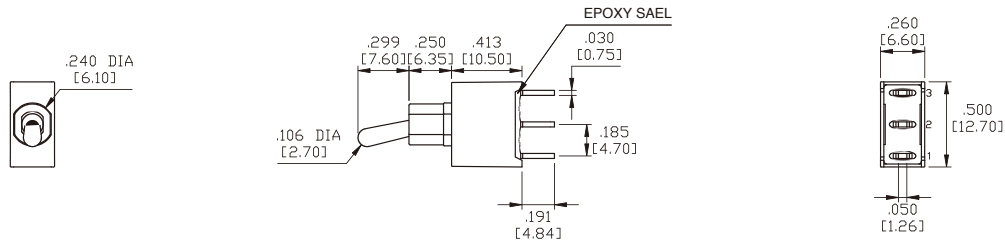
M5 Wire Wrap



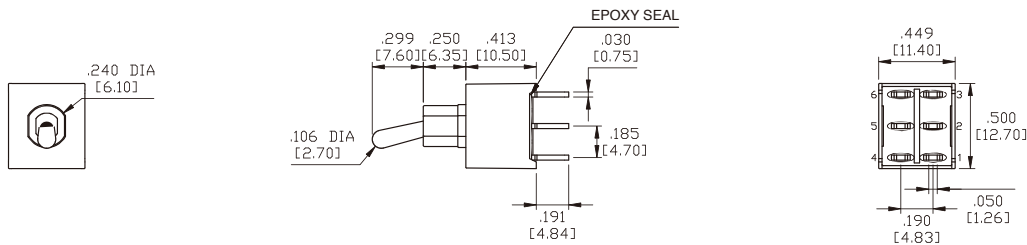
OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

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

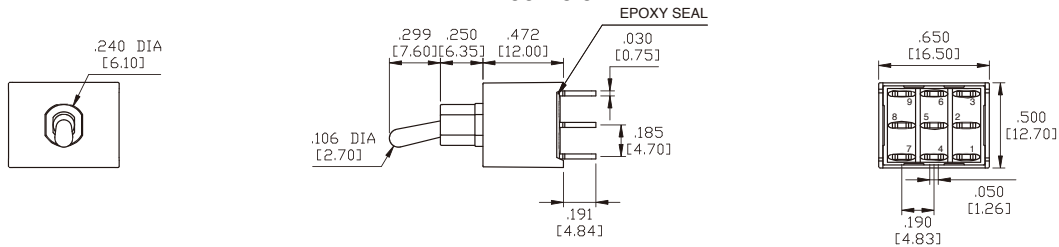
Single Pole



Double Pole

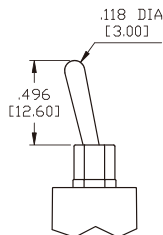


Three Pole

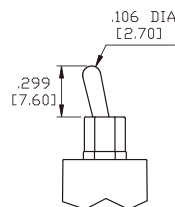


Actuator Options

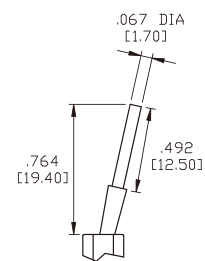
T1



T2

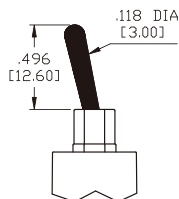


T9 with Plastic Cap

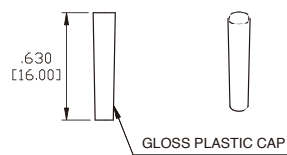
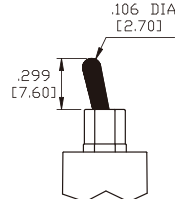


NO.	COLOR
1	White
2	Black(std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

P1 Plastic Toggle



P2 Plastic Toggle

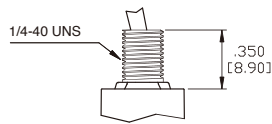


* Shown with B4 bushing. Subtract .075" (1.90 mm) from actuator height for B1 bushing.

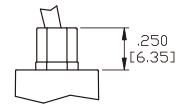
2MS-Series Dimensional Specifications: in. [mm]

Bushing Options

B1

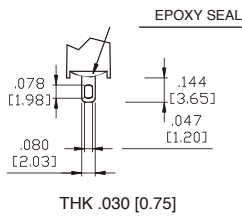


B4

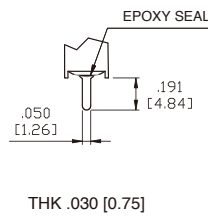


Termination Options

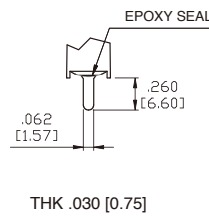
M1 Standard Solder Lug



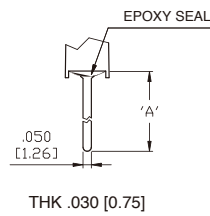
M2 PC Thru-Hole



M3 Quick Connect

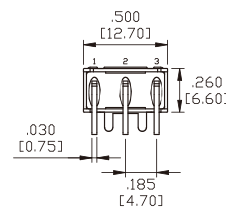
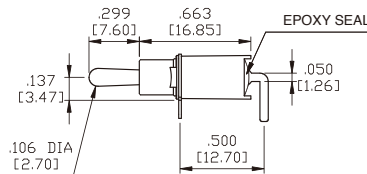
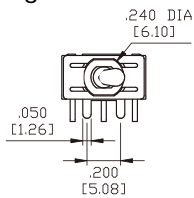


M5 Wire Wrap

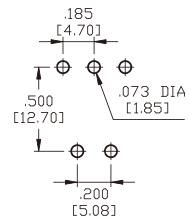


OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

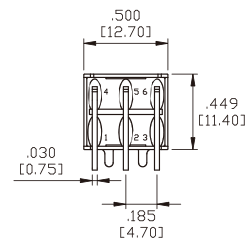
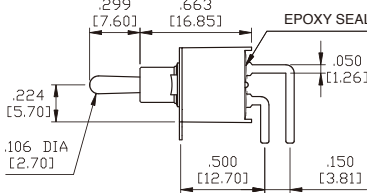
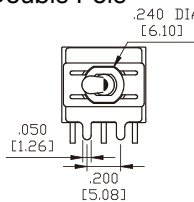
M6 Single Pole



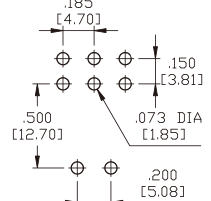
P.C.MOUNTING



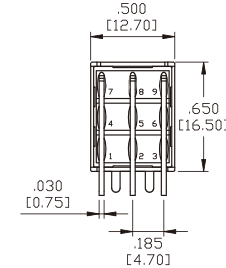
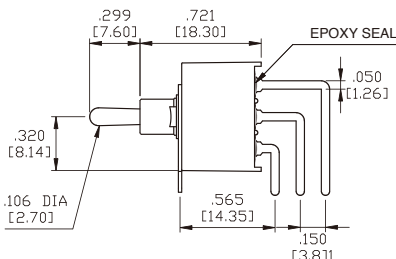
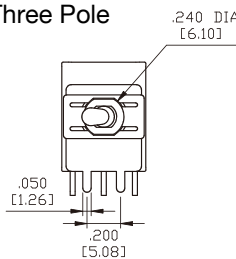
M6 Double Pole



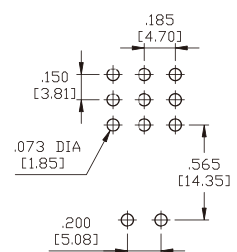
P.C.MOUNTING



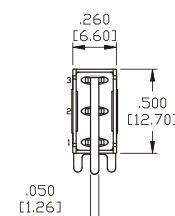
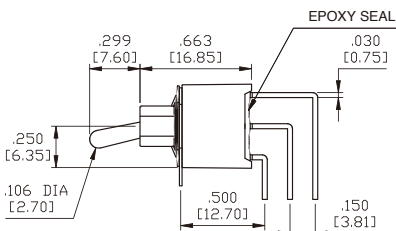
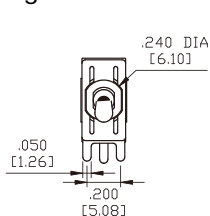
M6 Three Pole



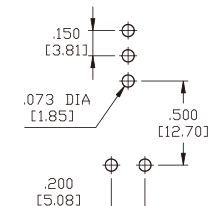
P.C.MOUNTING



M7 Single Pole



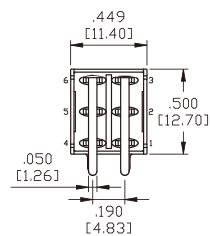
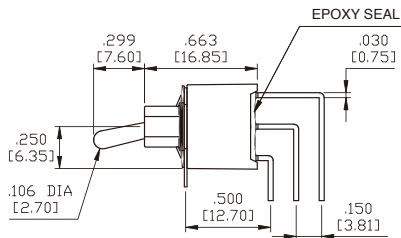
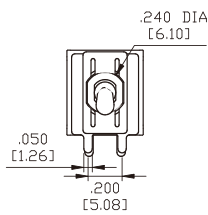
P.C.MOUNTING



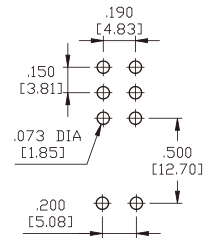
2MS-Series Dimensional Specifications: in. [mm]

Termination Options

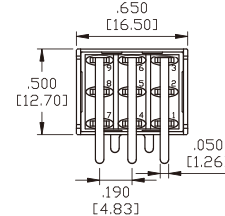
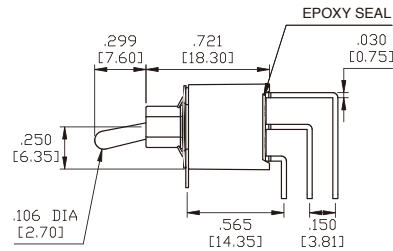
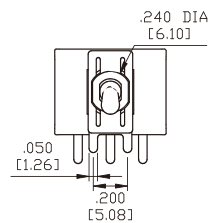
M7 Double Pole



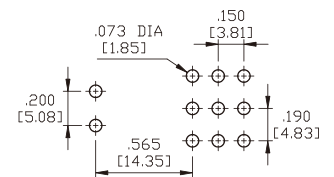
P.C.MOUNTING



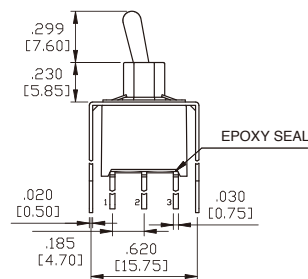
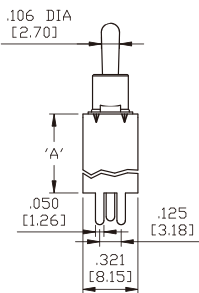
M7 Three Pole



P.C.MOUNTING

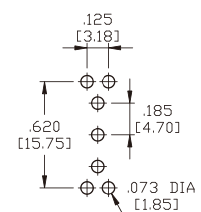


VS2-VS3 Single Pole

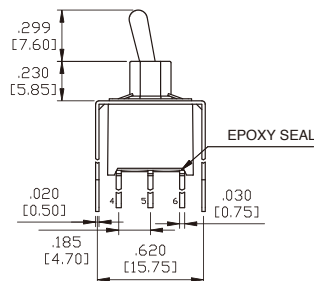
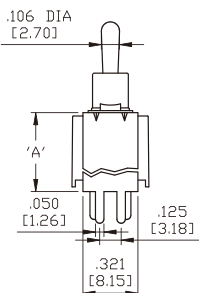


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

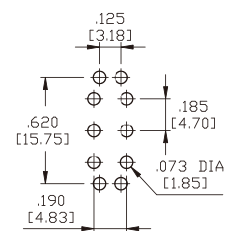


VS2-VS3 Double Pole

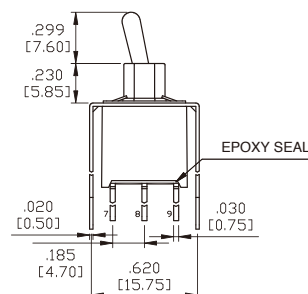
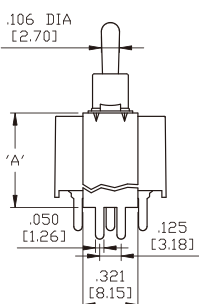


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

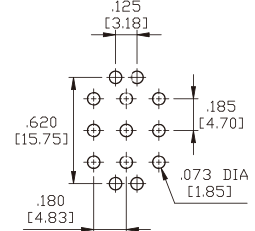


U2-VS3 Three Pole



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

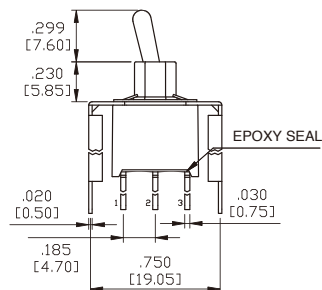
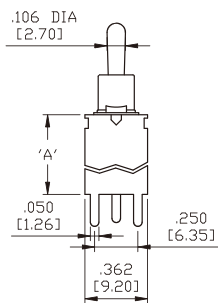
P.C.MOUNTING



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

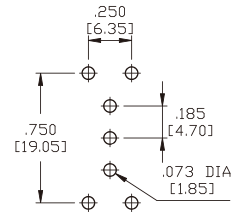
Termination Options

VS4-VS5 Single Pole

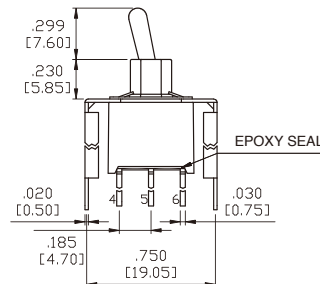
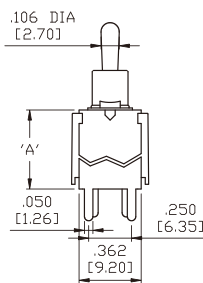


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

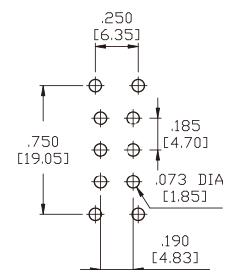


VS4-VS5 Double Pole

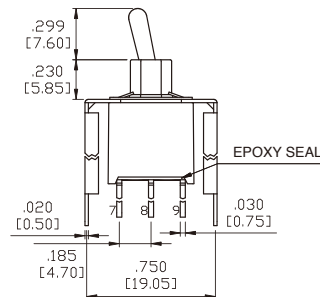
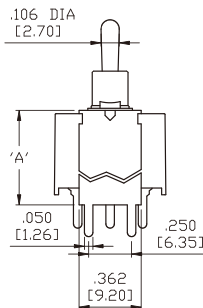


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

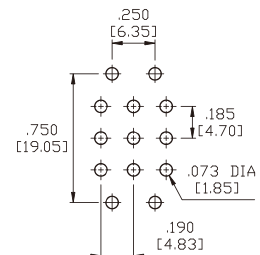


U4-VS5 Three Pole



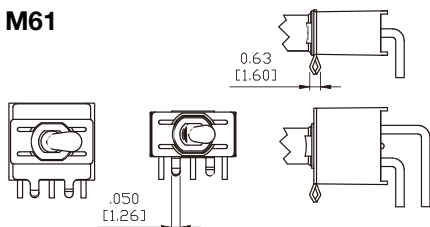
OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

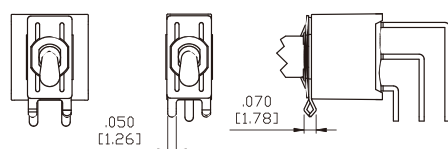


Snap-In Termination Options

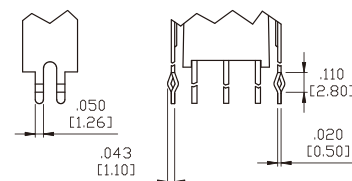
M61



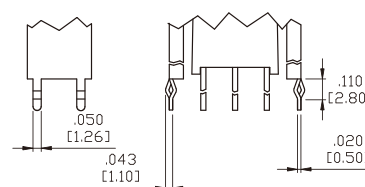
M71



VS21, VS31



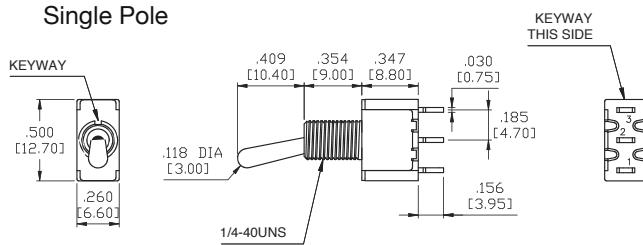
VS41, VS51



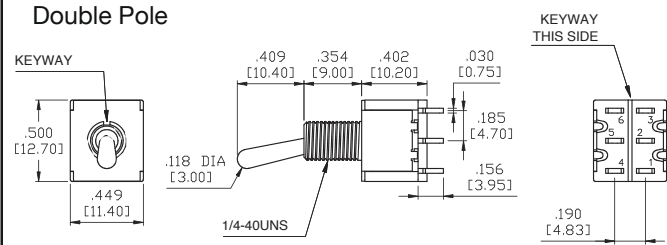
* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

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

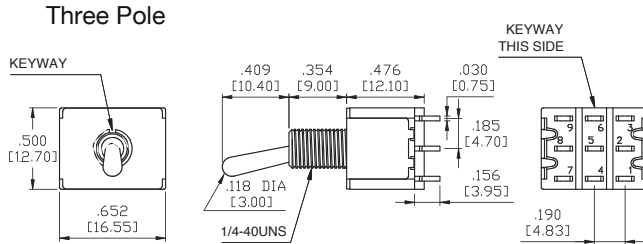
Single Pole



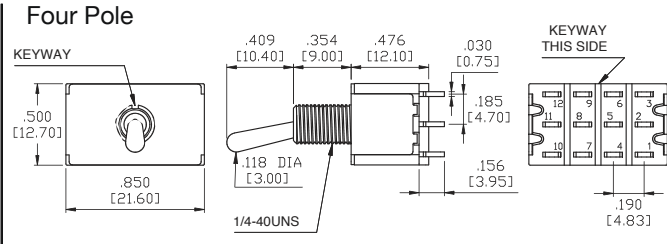
Double Pole



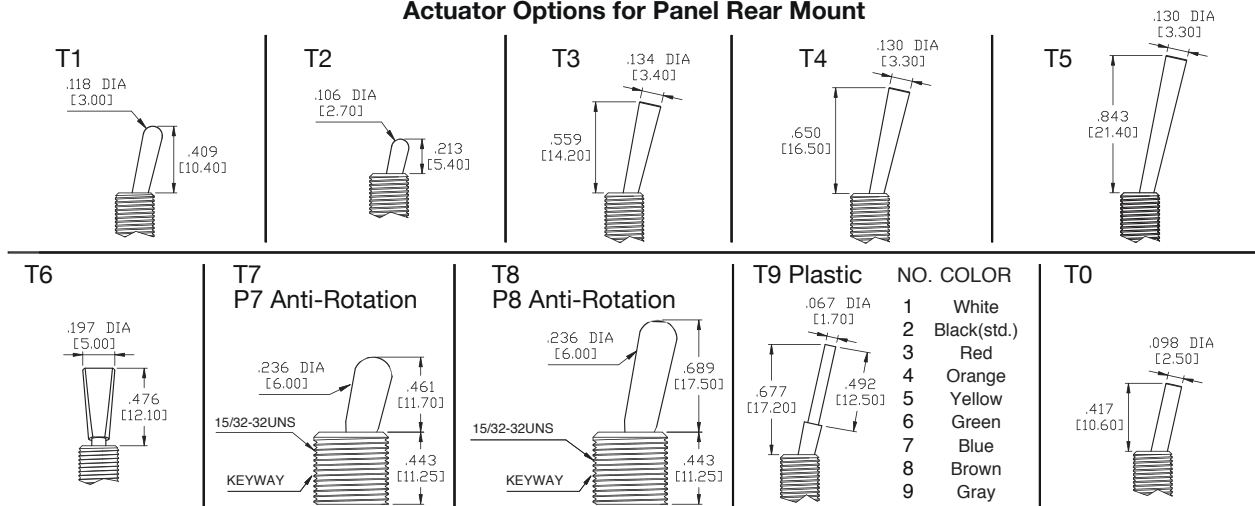
Three Pole



Four Pole

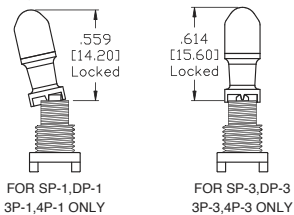


Actuator Options for Panel Rear Mount

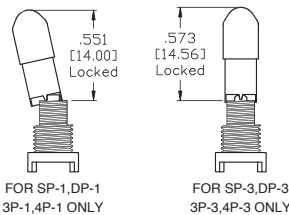


* T6 actuator is available with B1, B2, B5, B6, BA, BB & BE bushing. Actuator length shown for T1 – T5, T9 and T10 is with B1 bushing. T7, P7, T8 & P8 does not require a bushing code.

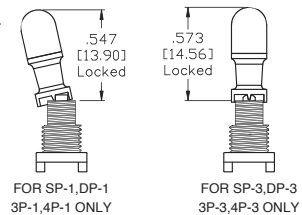
Locking Lever
TA



Locking Lever
TI

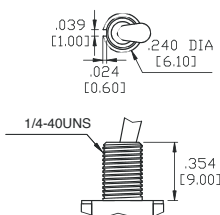


Locking Lever
TL

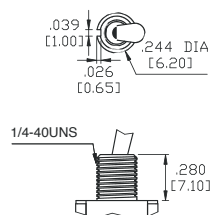


Bushing Options

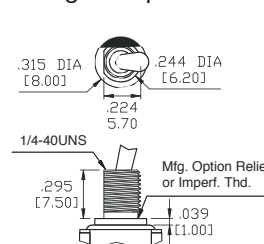
B1 Threaded
B2 Non-Threaded



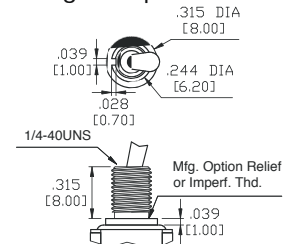
B3 Threaded
B4 Non-Threaded



B5 High Torque



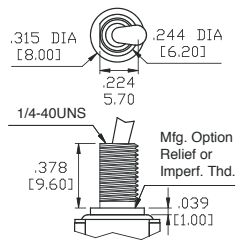
B6 High Torque



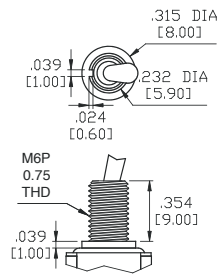
2M1-Series Dimensional Specifications: in. [mm]

Bushing Options

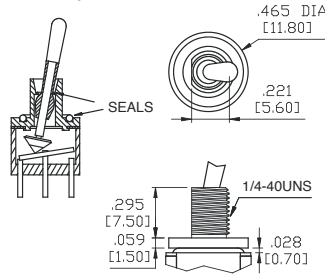
B7 Long



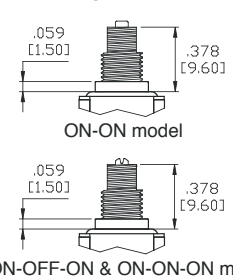
B8 Metric



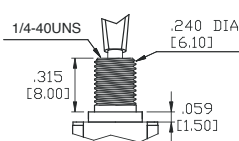
B9 Splash-Proof



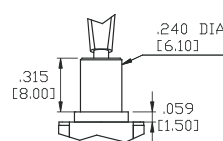
BL Locking Lever



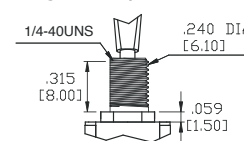
BA Threaded for T6



BB Non-Threaded for T6

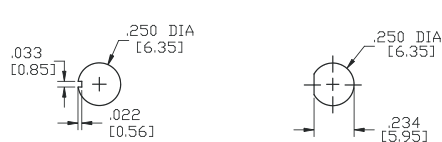


BB High Torque for T6

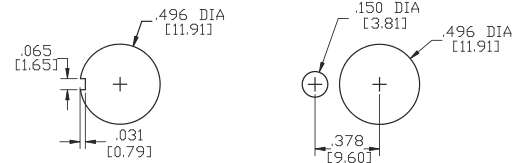


Panel Mounting

1/4 INCH BUSHING

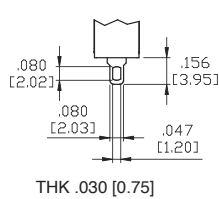


15/32 INCH BUSHING

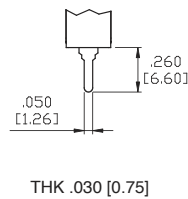


Termination Options

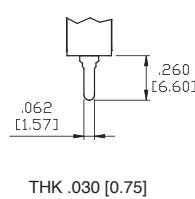
M1 Standard Solder Lug



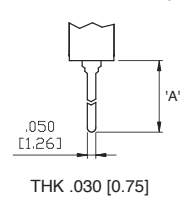
M2 PC Thru-Hole



M3 Quick Connect

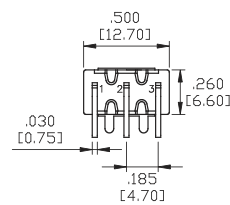
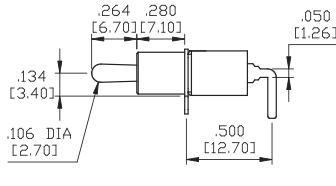
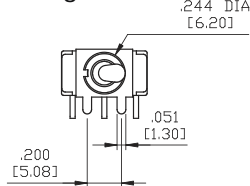


M5 Wire Wrap

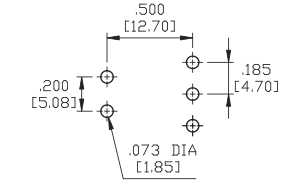


OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

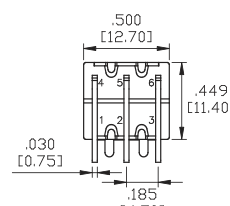
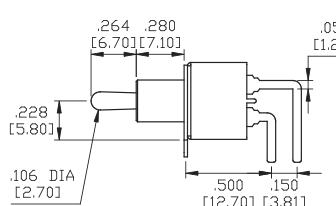
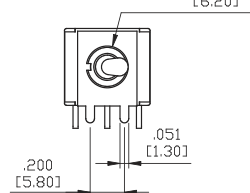
M6 Single Pole



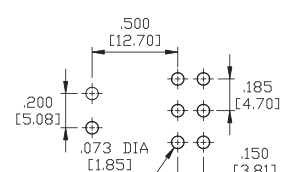
P.C.MOUNTING



M6 Double Pole



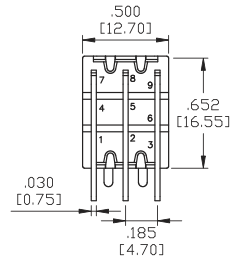
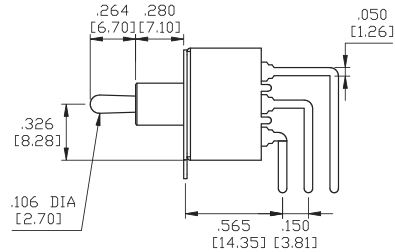
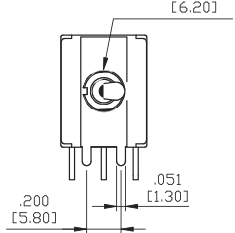
P.C.MOUNTING



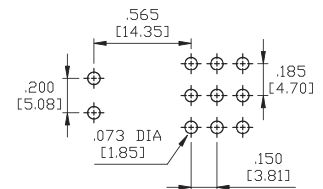
2M1-Series Dimensional Specifications: in. [mm]

Termination Options

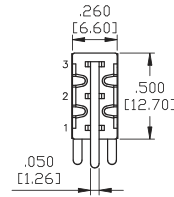
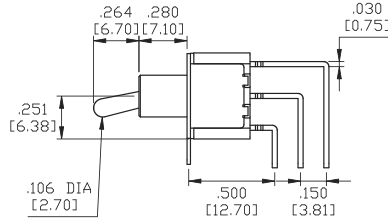
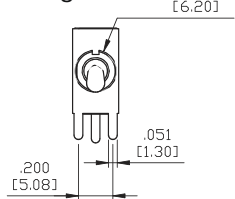
M6 Three Pole



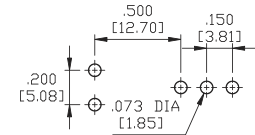
P.C.MOUNTING



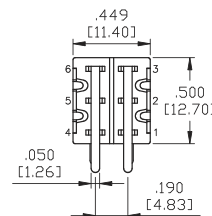
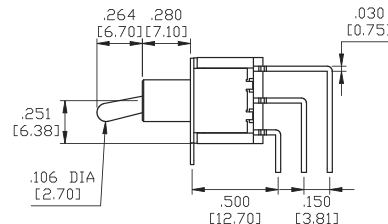
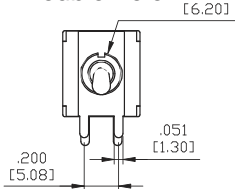
M7 Single Pole



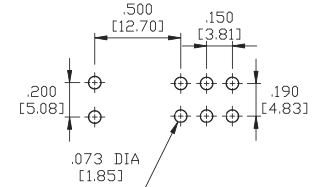
P.C.MOUNTING



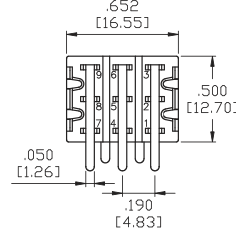
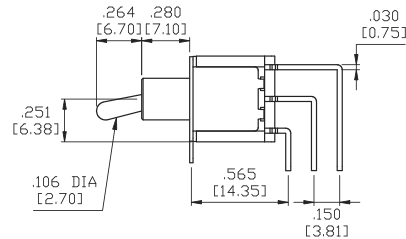
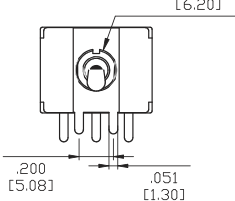
M7 Double Pole



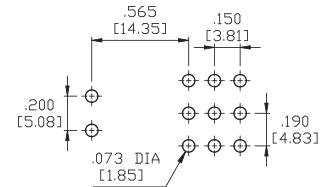
P.C.MOUNTING



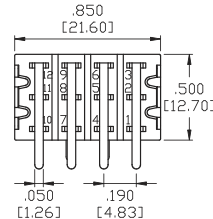
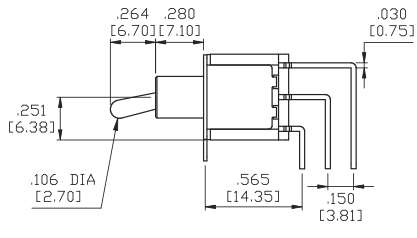
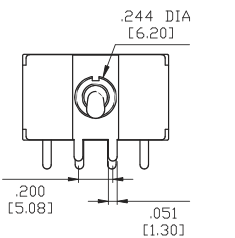
M7 Three Pole



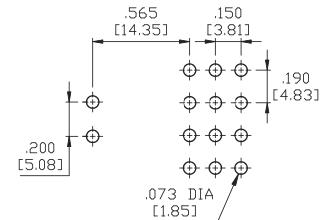
P.C.MOUNTING



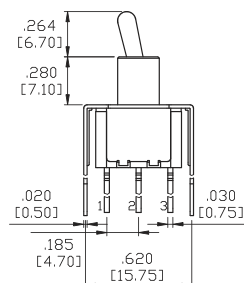
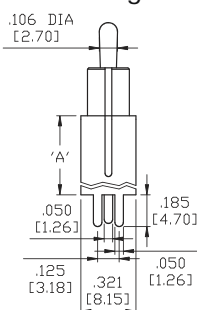
M7 Four Pole



P.C.MOUNTING

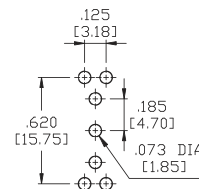


VS2-VS3 Single Pole



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

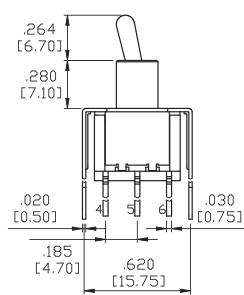
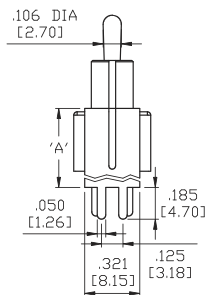
P.C.MOUNTING



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

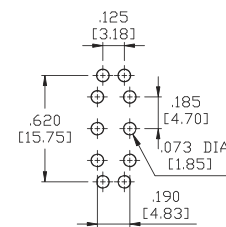
Termination Options

VS2-VS3 Double Pole

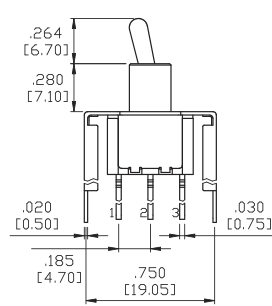
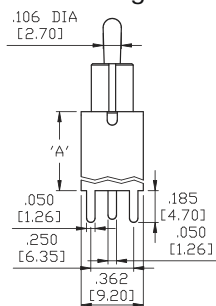


OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

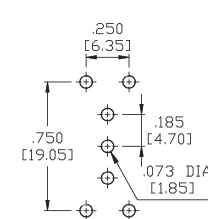


VS4-VS5 Single Pole

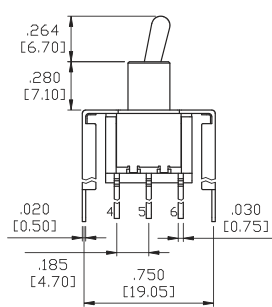
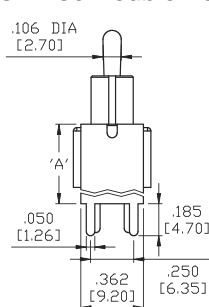


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

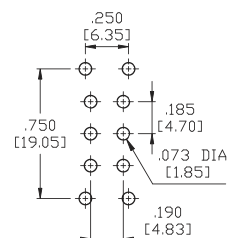


VS4-VS5 Double Pole



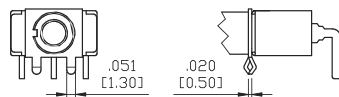
OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

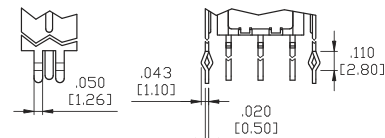


Snap-In Termination Options

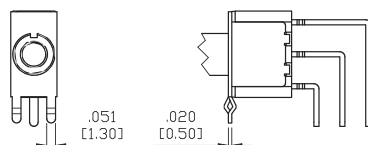
M61 (available with SP & DP)



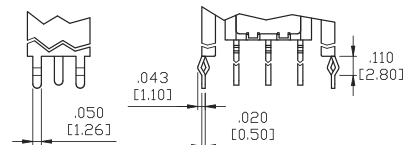
VS21, VS31



M71 (available with SP & DP)



VS41, VS51

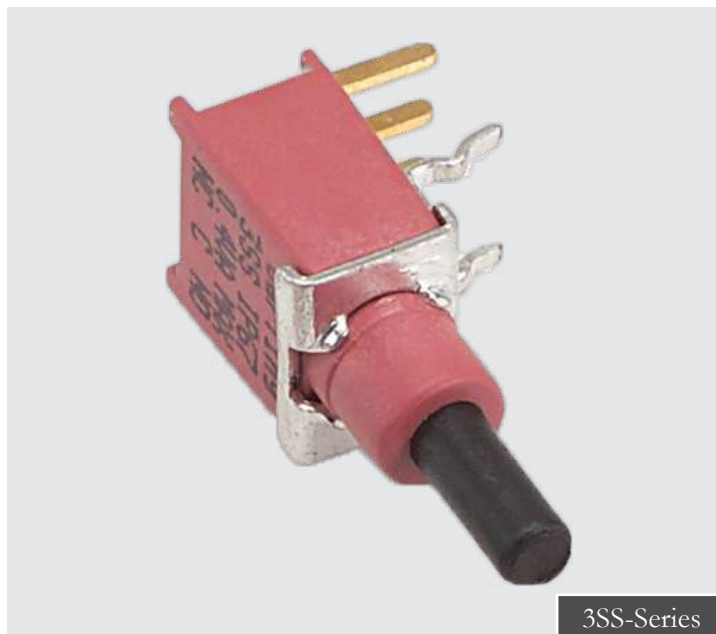


* PC Mounting for M61,M71,VS21,VS31,VS41,VS51 refer to M6,M7,VS2,VS3,VS4,VS5 respectively.

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 >**](#)



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: Dially 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

3SS - **WSP** **9** - **M6** **R** **E**

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

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

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

Notes:

- Hardware includes (2) 2M1-HDW21 nuts, and (1) 2M1-HDW22 washer
- Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 locking ring
- Movable contact and terminal platings: silver over copper alloy
- Movable contact and terminal platings: gold over nickel over copper alloy
- Terminal platings: gold over nickel over copper alloy
- Terminal platings: tin over copper alloy
- Terminal contact platings: Gold over nickel alloy
- 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**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:

- Movable contact and terminals platings: silver over copper alloy
- Movable contact platings: gold over nickel over copper alloy
- Terminal platings: gold over nickel over copper alloy
- Terminals platings: tin over copper alloy
- Terminal contact platings: gold over nickel alloy
- 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

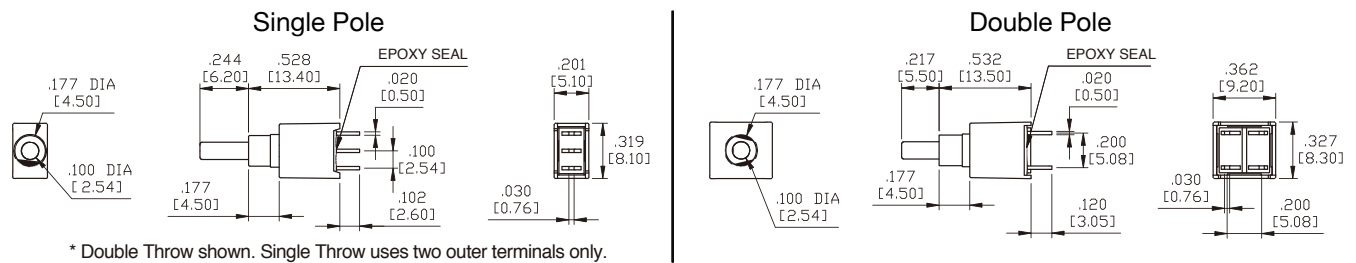
3S1 - C1 3

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**3 CAP COLOR**

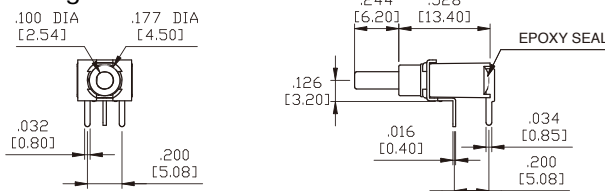
1 White	5 Yellow
2 Black	6 Green
3 Red	7 Blue
4 Orange	

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

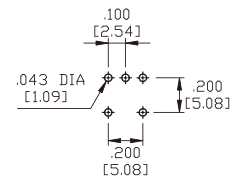


Termination Options

M6 Single Pole

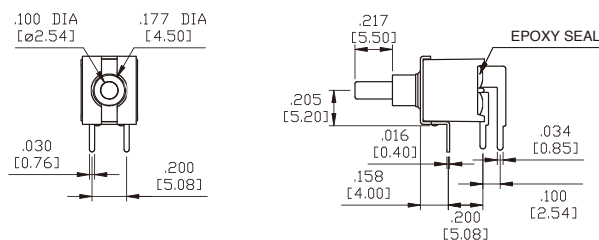


P.C.MOUNTING

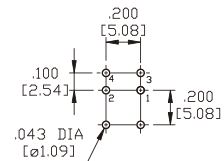


* Double Throw shown. Single Throw uses two outer terminals only.

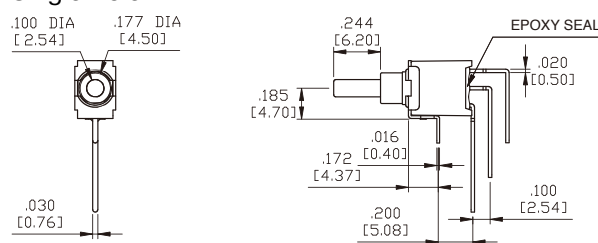
M6 Double Pole



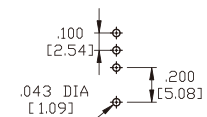
P.C.MOUNTING



M7 Single Pole

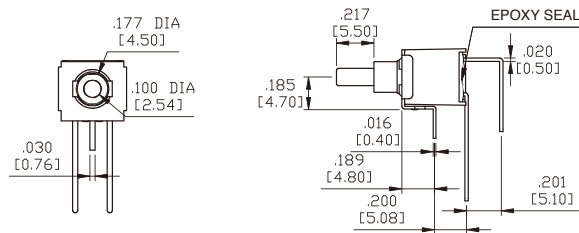


P.C.MOUNTING

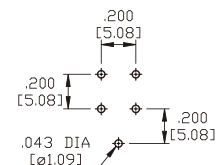


* Double Throw shown. Single Throw uses two outer terminals only.

M7 Double Pole



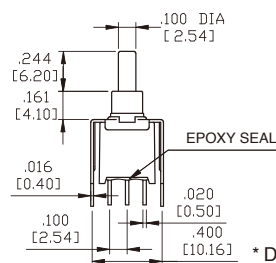
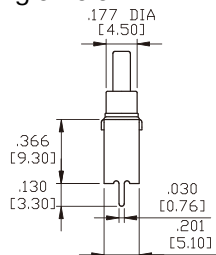
P.C.MOUNTING



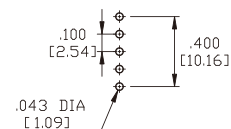
3SS-Series Dimensional Specifications: in. [mm]

Termination Options

VS2 Single Pole

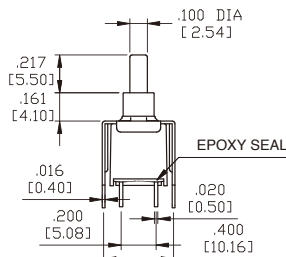
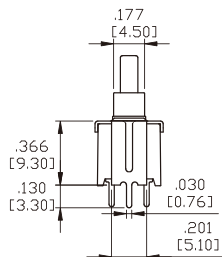


P.C.MOUNTING

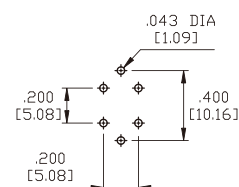


* Double Throw shown. Single Throw uses outer terminals only.

VS2 Double Pole

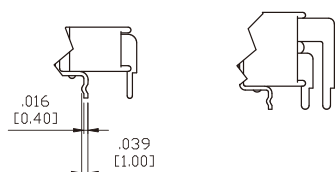


P.C.MOUNTING

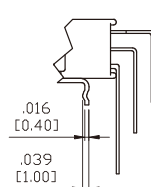


Snap-In Termination Options

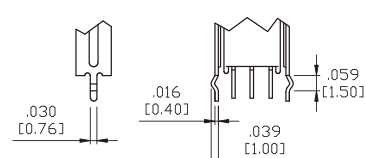
M61



M71

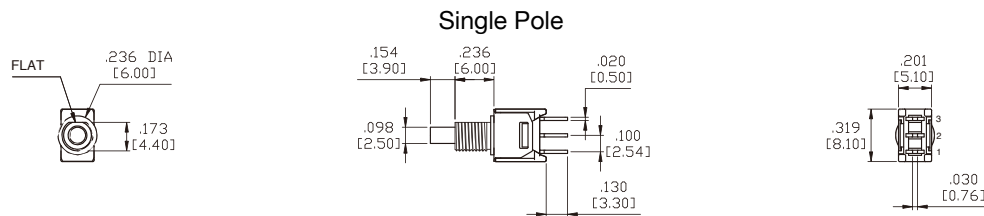


VS21



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

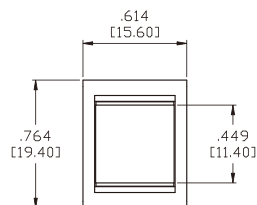
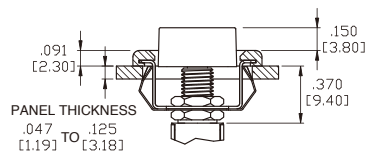
3S1-Series Dimensional Specifications: in. [mm]



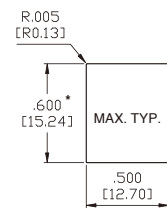
* Double Throw shown. Single Throw uses two outer terminals only.

Actuator Options for Snap-In Front Mount

OP1

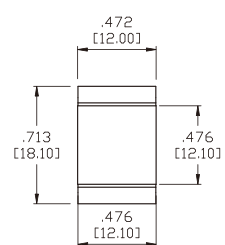
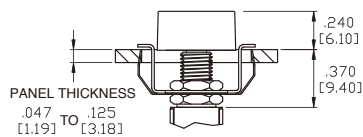


PANEL MOUNTING

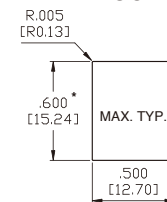


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125[2.31/3.18] thk. panels.

OP1 Without Frame



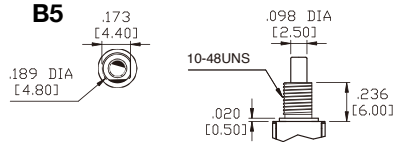
PANEL MOUNTING



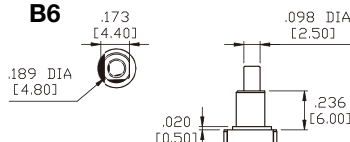
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125[2.31/3.18] thk. panels.

Bushing Options

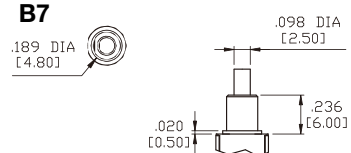
B5



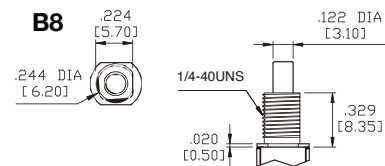
B6



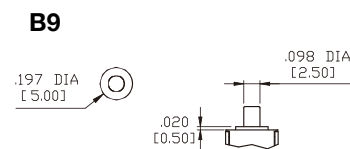
B7



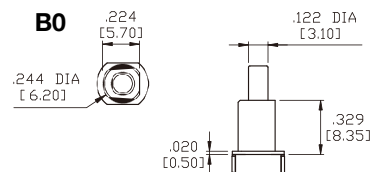
B8



B9

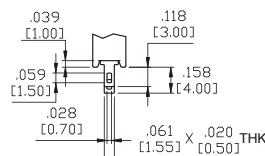


B0

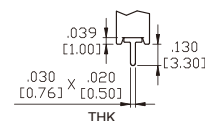


Termination Options

M1



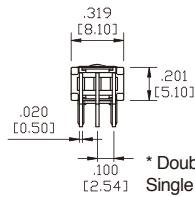
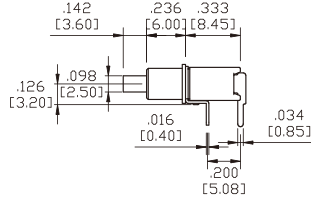
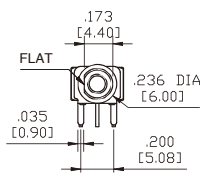
M2



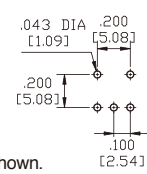
3S1-Series Dimensional Specifications: in. [mm]

Termination Options

M6 Single Pole

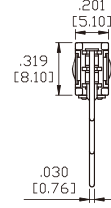
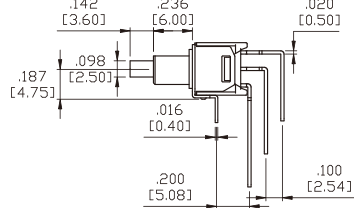
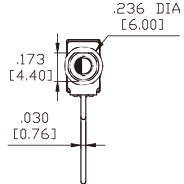


P.C.MOUNTING

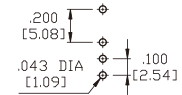


* Double Throw shown.
Single Throw uses two outer terminals only.

M7 Single Pole

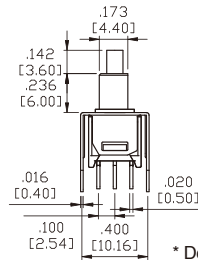
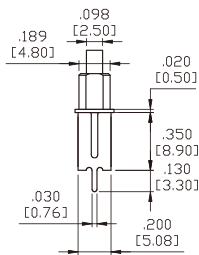


P.C.MOUNTING

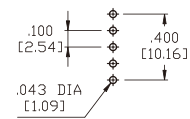


* Double Throw shown.
Single Throw uses two outer terminals only.

VS2 Single Pole



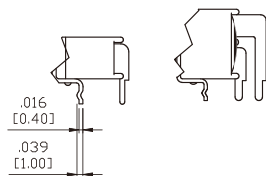
P.C.MOUNTING



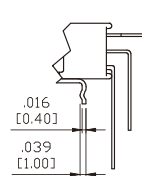
* Double Throw shown. Single Throw uses outer terminals only.

Snap-In Termination Options

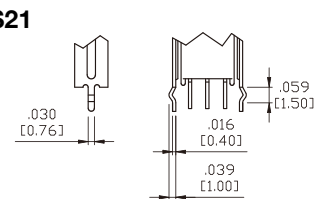
M61



M71



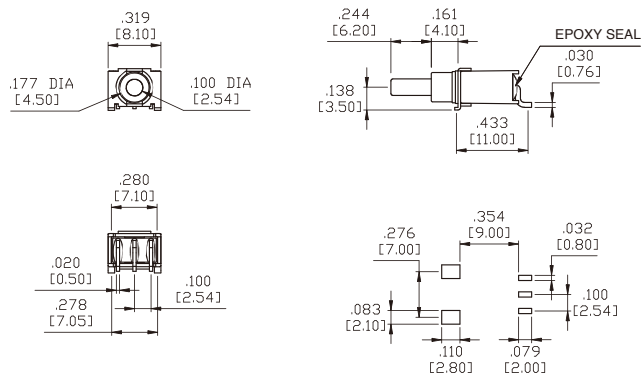
VS21



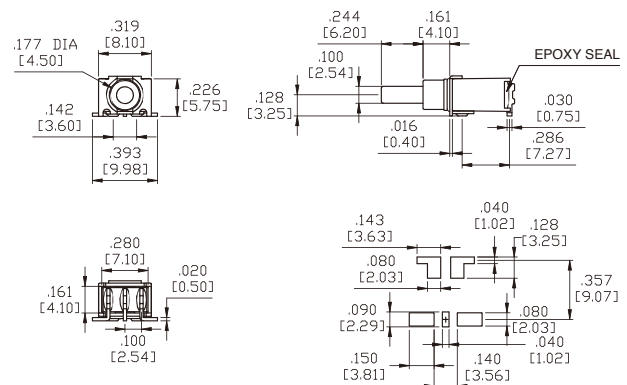
* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

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

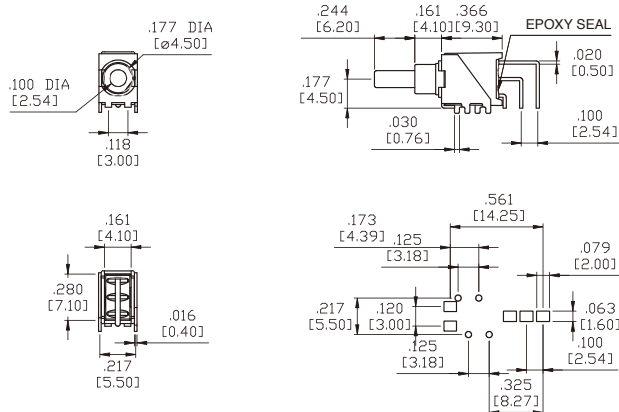
K6 Single Pole



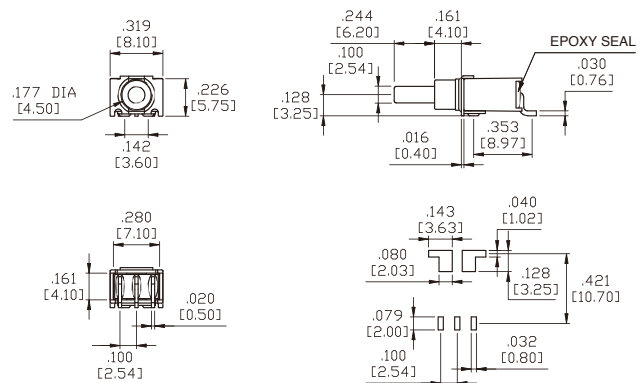
M6 Single Pole



M7 Single Pole



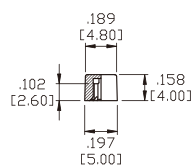
S6 Single Pole



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

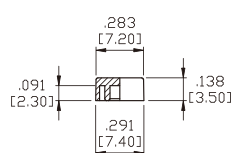
Plunger Caps

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		

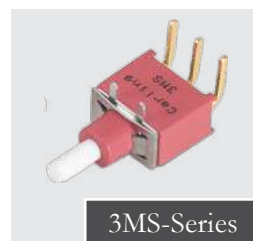
3M-Series

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.



3MNH-Series



3MS-Series



3MN-Series



3MA-Series

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](#)

[**Download CAD & Sales Drawing >**](#)



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	<i>3MS-Series:</i> 50 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts. <i>3MN, 3MA & 3NMH-Series:</i> 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>3MS-Series:</i> IP68 <i>3MNH-Series:</i> IP67
Cap Installation Support	<i>3MS-Series:</i> 10 lbs. max.
Solder Heat Resistance	MIL-STD-202, Method 210

Material

Case	<i>3MS-Series:</i> Glass filled nylon 6/6, flame retardant, heat stabilized (UL94V-0) <i>3MN, 3MA & 3NMH-Series:</i> Dially phthalate (DAP) (UL 94V-0)
Plunger	<i>3MS & 3MA-Series:</i> Glass filled nylon or glass filled polyester (UL94V-0) <i>3MN-Series:</i> Thermoplastic polyester, black <i>3NMH-Series:</i> Brass, black finish with o-ring seal
Bushing	<i>3MN-Series:</i> Brass, nickel plated <i>3MA-Series:</i> Zinc, nickel plated <i>3NMH-Series:</i> Brass, black finish with o-ring seal
Housing	<i>3MN & 3MA-Series:</i> Stainless Steel
Switch Support Retainer	<i>3MS-Series:</i> 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 PLUNGER¹

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

5 BUSHING²

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

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	cULus, IP67
Q	silver ⁵	silver ⁵	(SP1, DP1) 6A@125VAC or 28VDC 3A@250VAC (SP7, DP7) 1A@120VAC or 38VDC	cULus, IP67
R	gold ⁶	gold ⁷	0.4VA max @ 20V max (AC/DC)	N/A

8 EPOXY SEAL**E** Epoxy Seal

Notes:

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

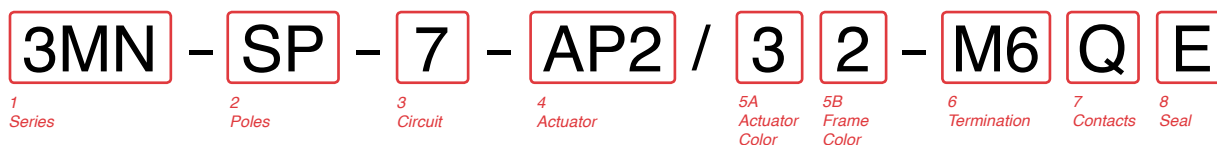
Contact Material Terminal Plating Rating			Approvals
G	silver ³	gold over silver	1A 120VAC or 38VDC cULus, IP68
Q	silver ³	silver ³	1A 120VAC or 38VDC cULus, IP68
R	gold ²	gold ²	0.4VA max 20V max (AC/DC) IP68

8 EPOXY SEAL**E** Epoxy Seal **0** without Epoxy Seal

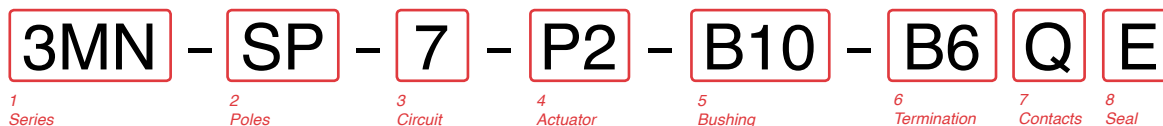
Notes:

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

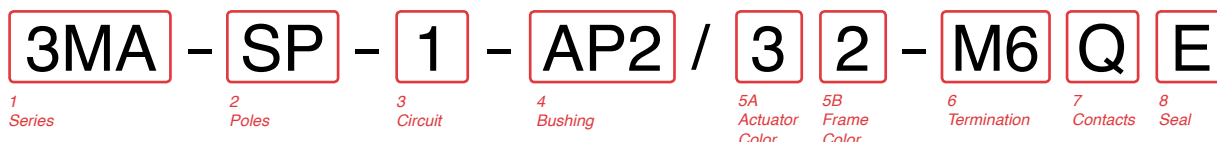
OR**5B BUSHING****B6** Unthreaded (for terminations VS6-VS9 only)**B10**¹ Threaded keyway**B11**² Threaded with flat**B20** Unthreaded keyway**B21** Unthreaded with flat**6 TERMINATION****M1** Solder Lug**M2** PCB**M51** Wire Wrap .750 [19.05]**M52** Wire Wrap .964 [24.40]**M53** Wire Wrap .425 [10.80]**M6** 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) N/A	

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

3MA-Series with Square Actuator



3MA-Series with Plunger Actuator

**1 SERIES****3MA** Alternate 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
3P¹ Three pole uses terminals 1,2, 3, 4, 5, 6, 7, 8 & 9
4P¹ Four pole uses terminals 1,2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

3 CIRCUIT

() - momentary

Switching

Position:	2-3, 5-6, 8-9, 11-12	2 Connected Terminals	3 2-1, 5-4, 8-7, 11-10
1	ON	NONE	ON
2 *	ON	NONE	(ON)

*Available in SP & DP only.

4 ACTUATOR**Square Actuator** (use with Color Options in Selection 5A & 5B)**AP1** Square with no frame**AP2** Square raised above frame**Plunger Actuator** (use with Bushing Options in Selection 5)**PA** Standard Plunger**PI** Medium Plunger**PL** Brass Chrome Plunger**PC** Brass Chrome Plated Plunger with Cap (for BD bushing only)**PD** Brass Chrome Plated Plunger (for BD bushing only)**5A ACTUATOR COLOR & 5B FRAME COLOR**^{4,5}

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

OR**5 BUSHING**

BD¹ Big bushing for PC, PD actuator 15/32"
B10² Threaded 1/4 - 40
B20 Unthreaded
B21 Unthreaded with flat

6 TERMINATION

M1 Solder Lug
M2 PCB
M51 Wire Wrap .750
M52 Wire Wrap .964
M53 Wire Wrap .425
M54 Wire Wrap 1.062
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

7 CONTACTS / TERMINALS

	Contact	Material	Terminal Plating	Rating	Approvals
G	silver ⁶	gold over silver	6A 125VAC or 28VDC 3A 250VAC		
K	gold ⁷	tin ⁸	0.4VA max 20V max (AC/DC)		N/A
P	silver ⁶	gold over silver	6A 125VAC or 28VDC 3A 250VAC		
Q	silver ⁶	silver ⁶	6A 125VAC or 28VDC 3A 250VAC		
R	gold ⁷	gold ⁷	0.4VA max 20V max (AC/DC)		N/A

8 EPOXY SEAL**E** Epoxy Seal **0** without Epoxy Seal

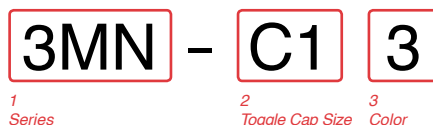
Notes:

- Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW12 washer, and (1) 2M1-HDW17 locking ring
- Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
- Tin option available with PC type terminations only.
- Available with circuit 1 only
- Black, white and red are standard. Other colors available, consult factory for details.
- Selection 5B is blank if actuator style is AP1 (no frame)
- 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, available for PC mount terminations only

3M-Series Accessories

To order a cap assembled on a switch, specify the switch number followed by the cap part number and the word "assembled". Ex: 3MN-SP-7-P2-B6-M6QE-C13ASSEMBLED. To order caps in bulk, specify the Series, followed by the cap. Ex: 3MN-C13

Optional Cap

**1 SERIES****3MN** Fits 3MN, 3MS or 3MA**2 PUSHBUTTON CAP SIZE**

C1 Round 8 mm diameter	C5 ¹ Round 15 mm diameter
C2 Round 9.70 mm diameter	C6 ² Brass Chrome Plated, 3.15 mm diameter
C3 Square 11.7 x 11.7 mm	
C4 Round 5 mm diameter	

3 CAP COLOR

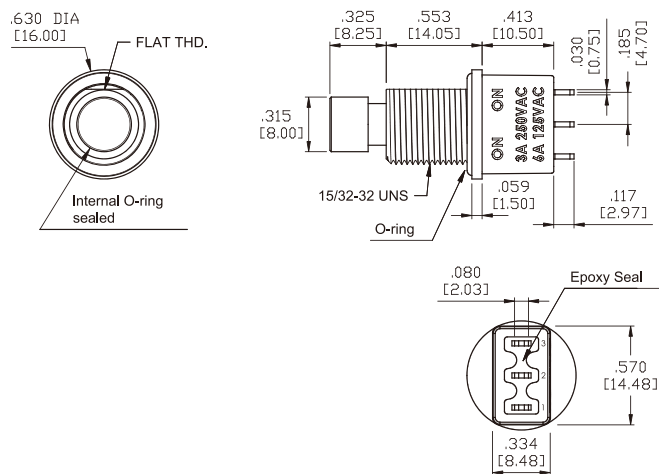
1 White	4 Orange
2 Black	5 Yellow
3 Red	6 Green
	7 Blue

Notes:

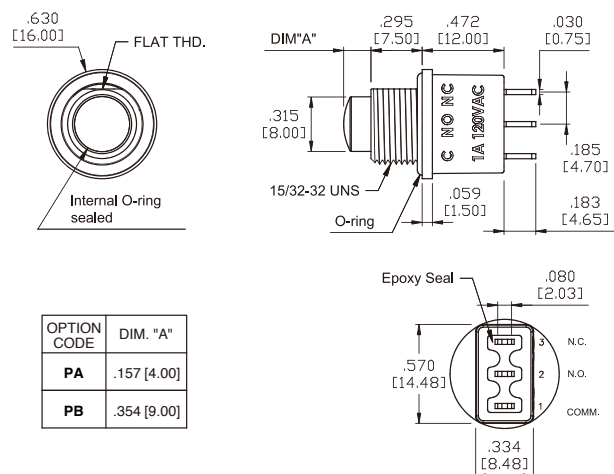
- For 3MA with PL Bushing
- For 3MA with PD Bushing

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

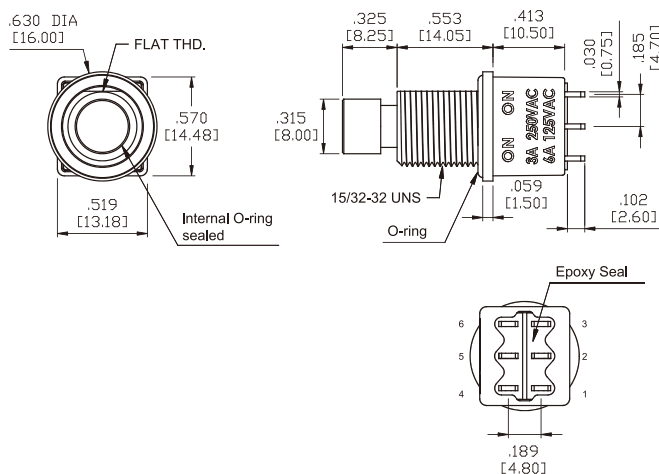
Single Pole Maintained Circuit



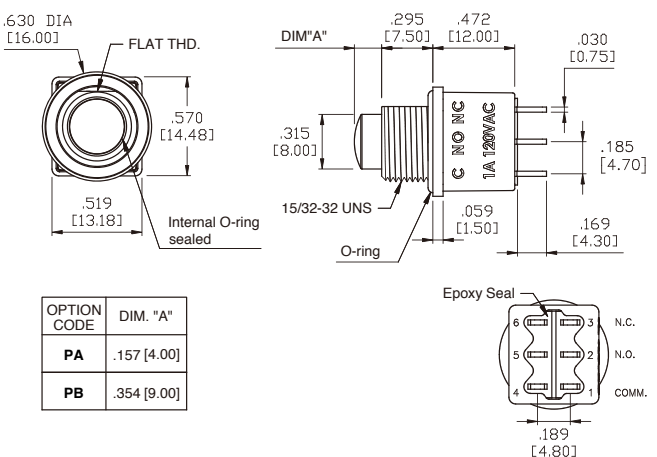
Single Pole Momentary Circuit



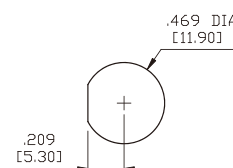
Double Pole Maintained Circuit



Double Pole Momentary Circuit

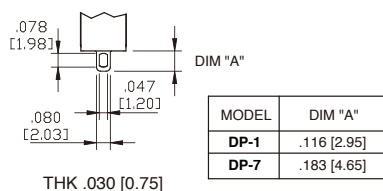


Panel Mounting



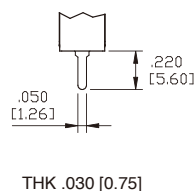
15/32-32 UNS FLAT-CUT
THREADED BUSHING

M1 Standard Solder Lug

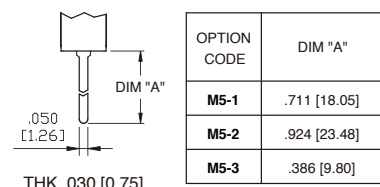


Termination Options

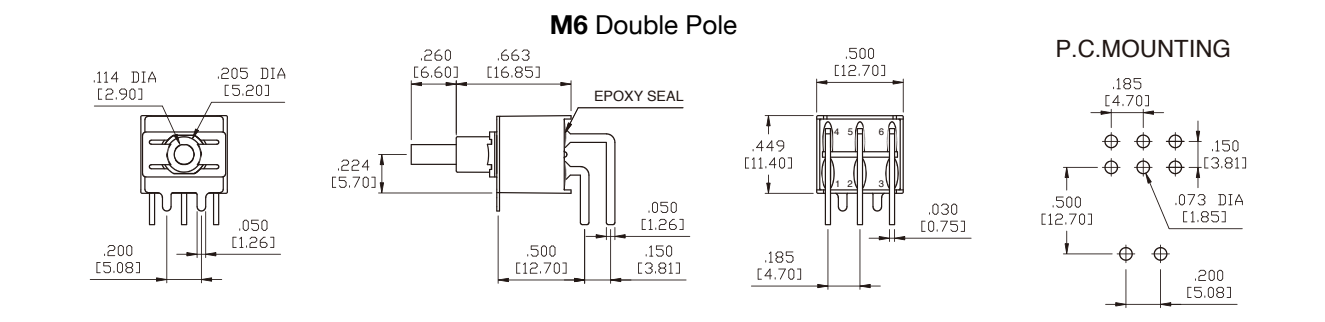
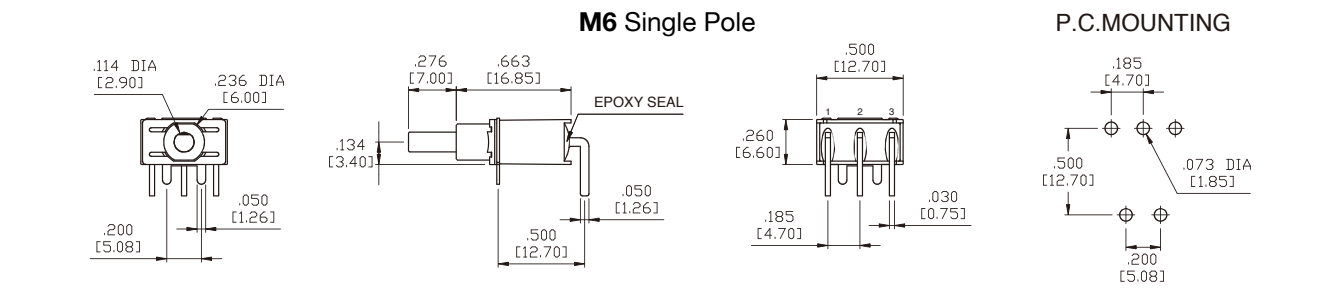
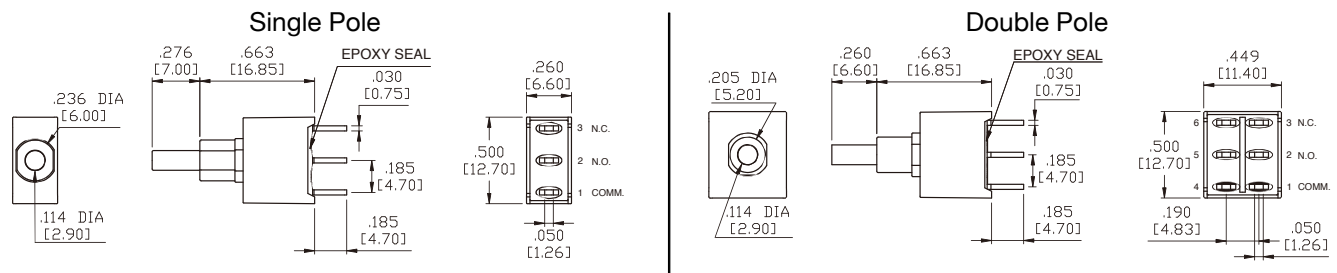
M2 PC Thru-Hole



M5 Wire Wrap

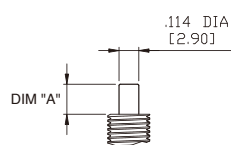


3MS-Series Dimensional Specifications: in. [mm]



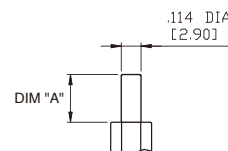
Plunger Options

For B1 Bushing



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

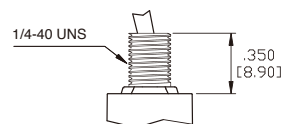
For B4 Bushing



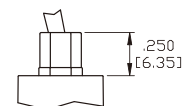
OPTION CODE	DIM. "A"
P1	.276 [7.00]
P2	.323 [8.20]
P3	.181 [4.60]

Bushing Options

B1



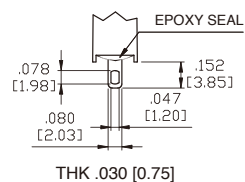
B4



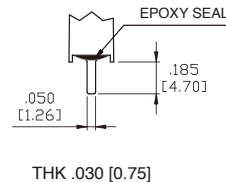
3MS-Series Dimensional Specifications: in. [mm]

Termination Options

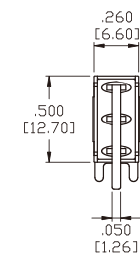
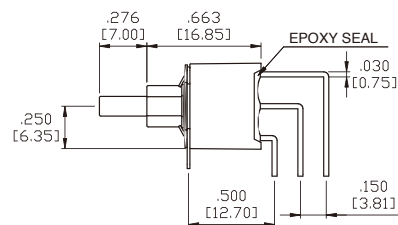
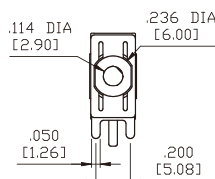
M1



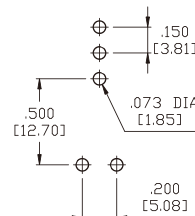
M2



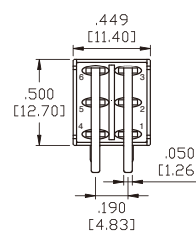
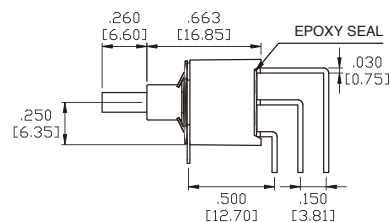
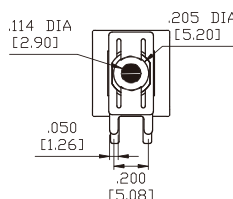
M7 Single Pole



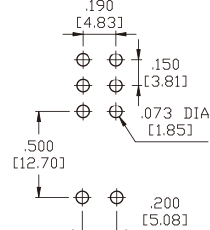
P.C.MOUNTING



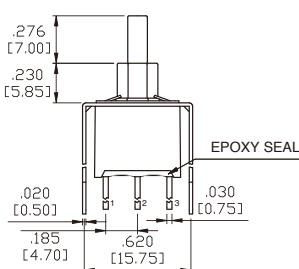
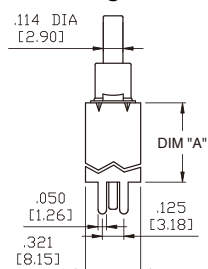
M7 Double Pole



P.C.MOUNTING

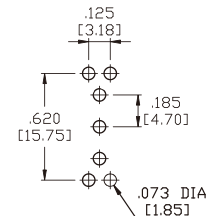


VS2-VS3 Single Pole

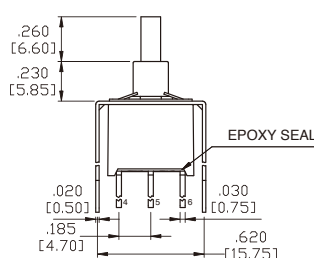
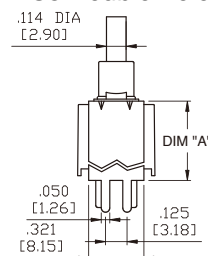


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

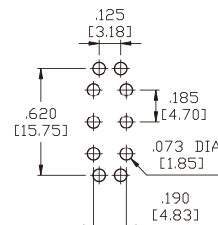


VS2-VS3 Double Pole



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

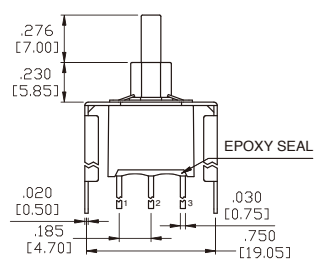
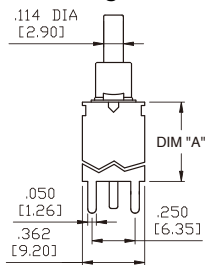
P.C.MOUNTING



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

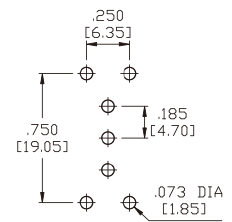
Termination Options

VS4-VS5 Single Pole

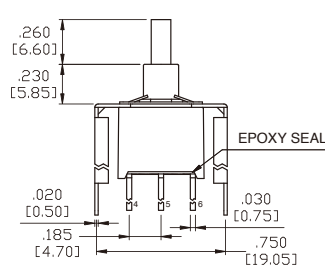
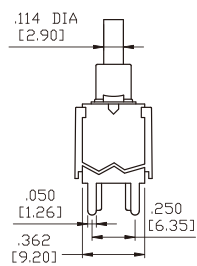


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

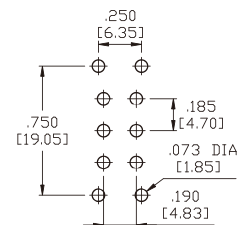


VS4-VS5 Double Pole



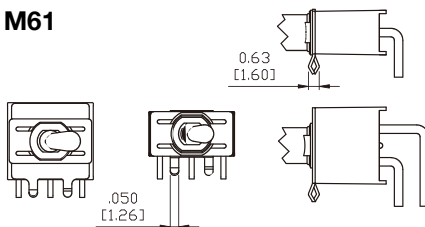
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

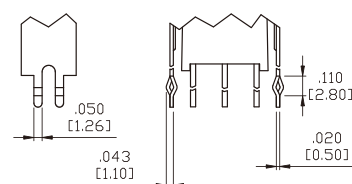


Snap-In Termination Options

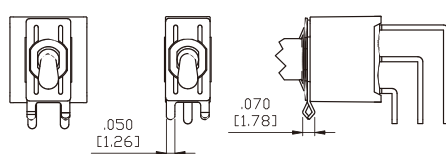
M61



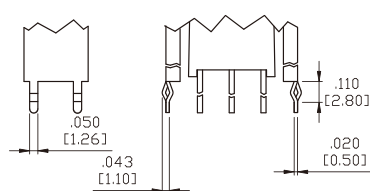
VS21, VS31



M71

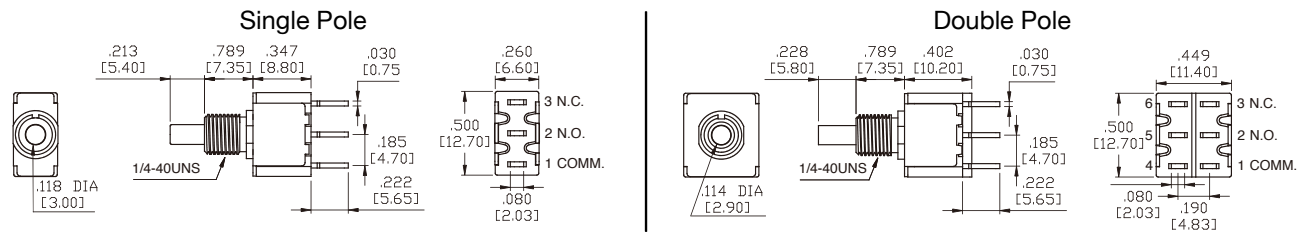


VS41, VS51



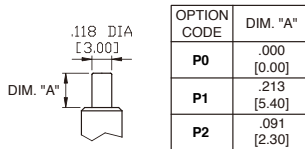
* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

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

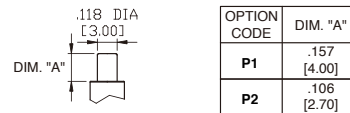


Plunger Options

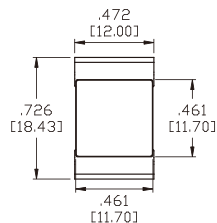
For B1, B2, B3, B4 Bushing



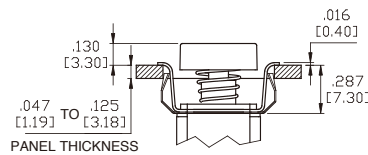
For B6 Bushing



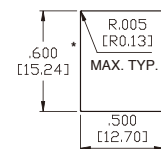
AP1



Actuator Options for Snap-In Front Mount

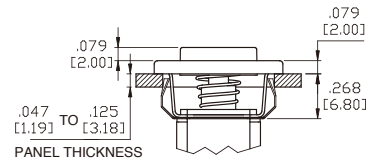
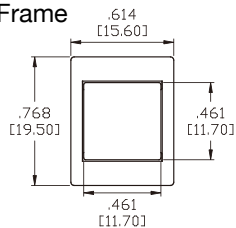


PANEL MOUNTING

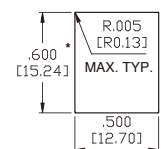


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP2 with Frame

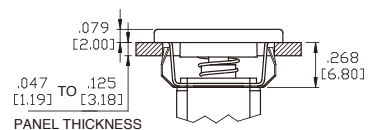
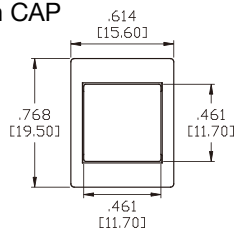


PANEL MOUNTING

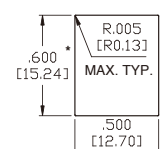


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP3 Flush CAP



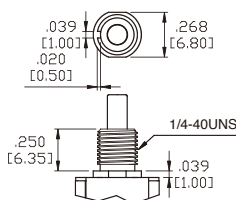
PANEL MOUNTING



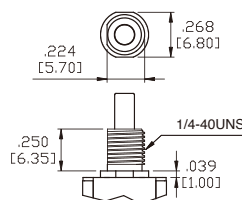
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

Bushing Options

B1 Threaded Standard
B2 Non-Threaded

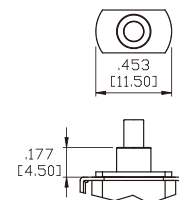


B3 Threaded Standard
B4 Non-Threaded



B6 Non-Threaded

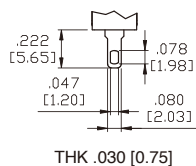
(FOR TERMINATION OPTIONS VS6-VS9 ONLY)



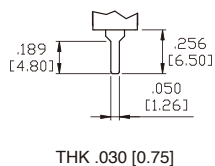
3MN-Series Dimensional Specifications: in. [mm]

Termination Options

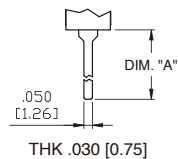
M1 Standard Solder Lug



M2 PC Thru-Hole

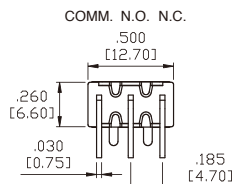
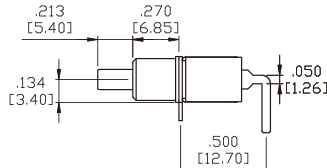
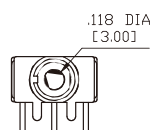


M5 Wire Wrap

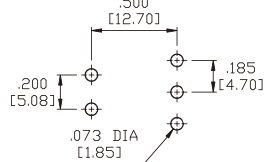


OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]

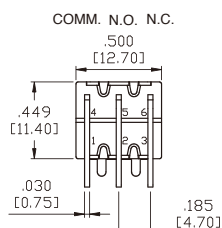
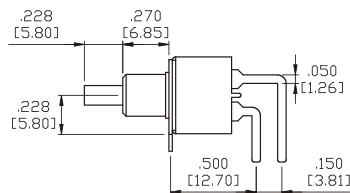
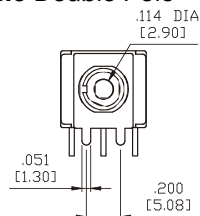
M6 Single Pole



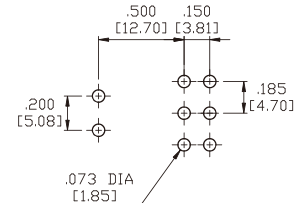
P.C.MOUNTING



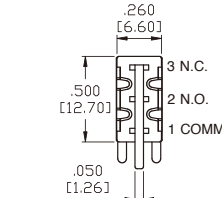
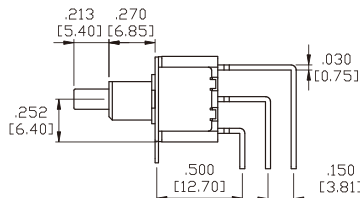
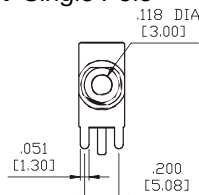
M6 Double Pole



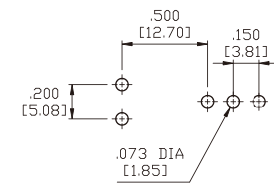
P.C.MOUNTING



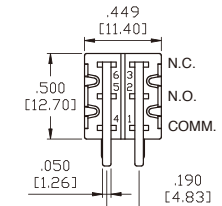
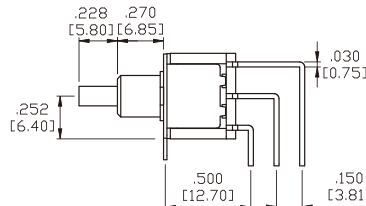
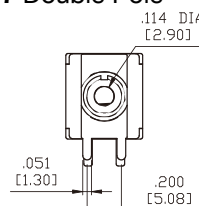
M7 Single Pole



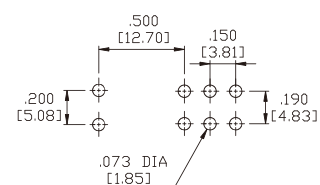
P.C.MOUNTING



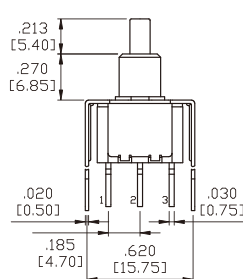
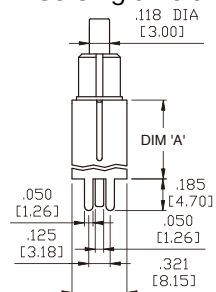
M7 Double Pole



P.C.MOUNTING

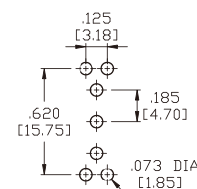


VS2-VS3 Single Pole



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

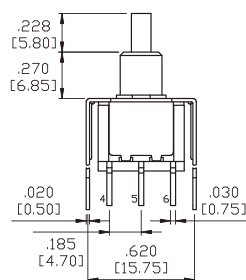
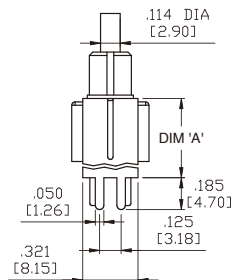
P.C.MOUNTING



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

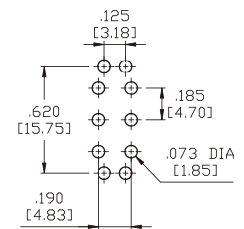
Termination Options

VS2-VS3 Double Pole

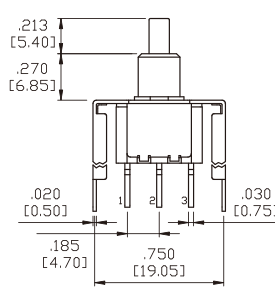
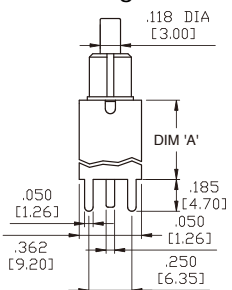


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

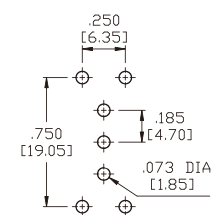


VS4-VS5 Single Pole

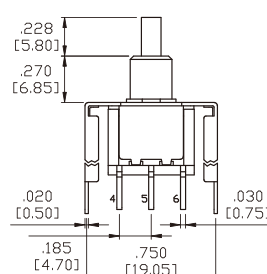
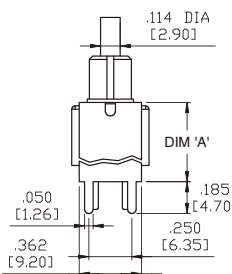


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

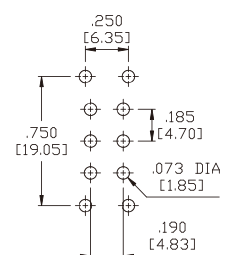


VS4-VS5 Double Pole

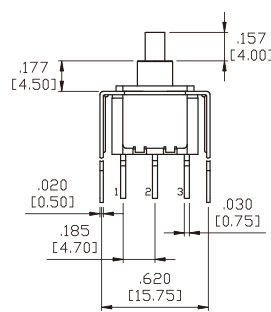
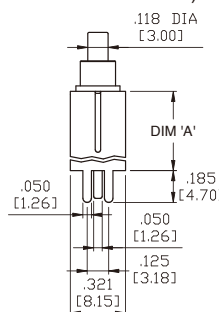


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

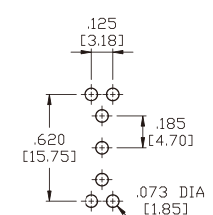


VS6-VS7 Single Pole (FOR B6 BUSHING ONLY)



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

P.C.MOUNTING

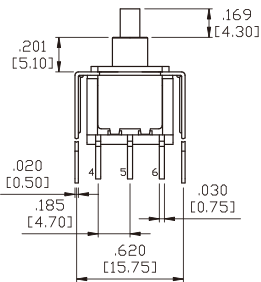
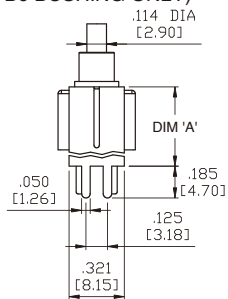


3MN-Series Dimensional Specifications: in. [mm]

Termination Options

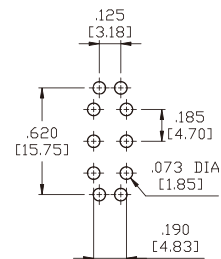
VS6-VS7 Double Pole

(FOR B6 BUSHING ONLY)



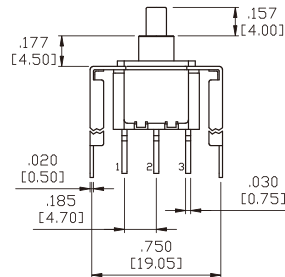
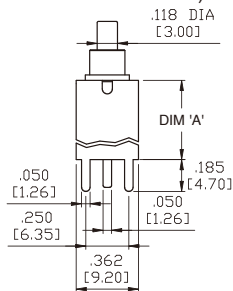
OPTION CODE	DIM.'A'
VS6	.461 [11.70]
VS7	.630 [16.00]

P.C.MOUNTING



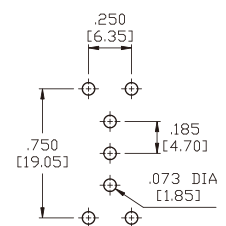
VS8-VS9 Single Pole

(FOR B6 BUSHING ONLY)



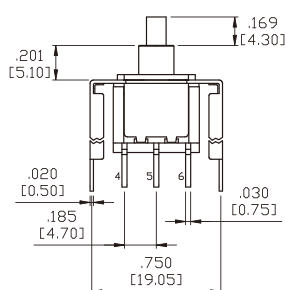
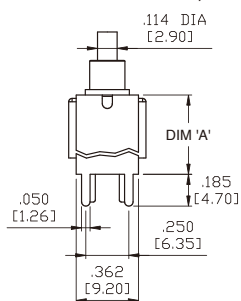
OPTION CODE	DIM.'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING



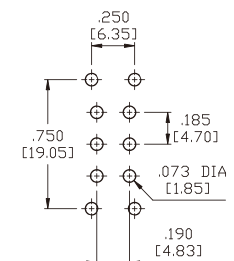
VS8-VS9 Double Pole

(FOR B6 BUSHING ONLY)



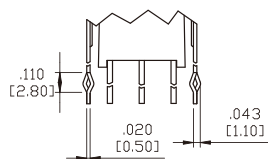
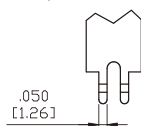
OPTION CODE	DIM.'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

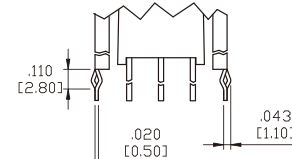
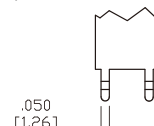


Snap-In Termination Options

VS21, VS31

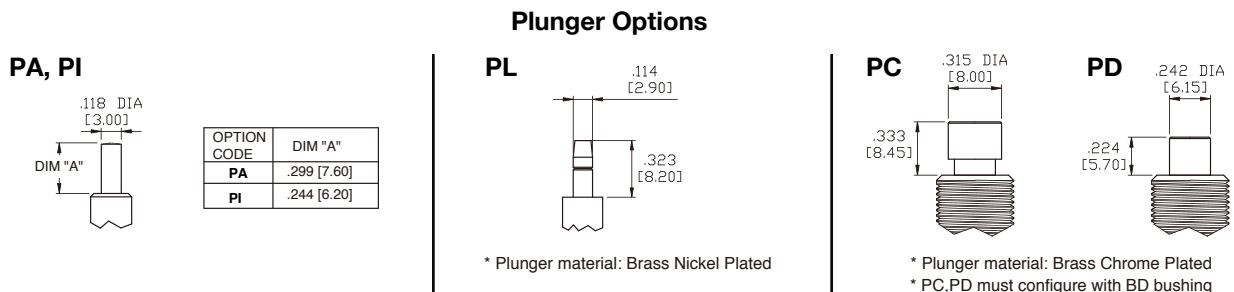
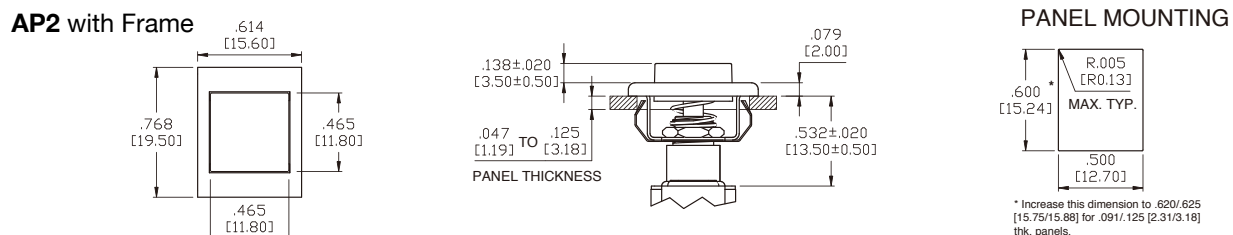
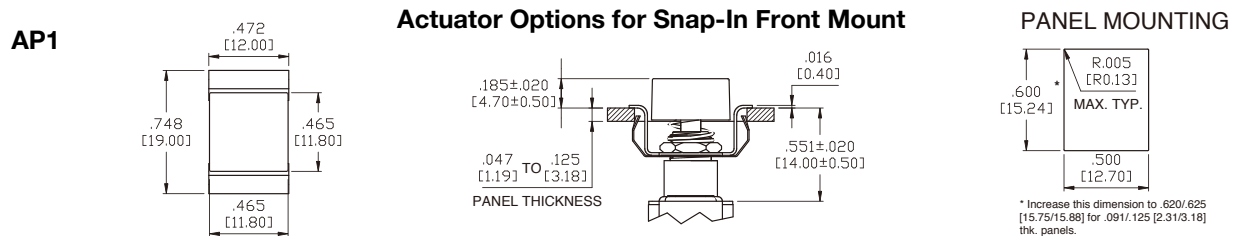
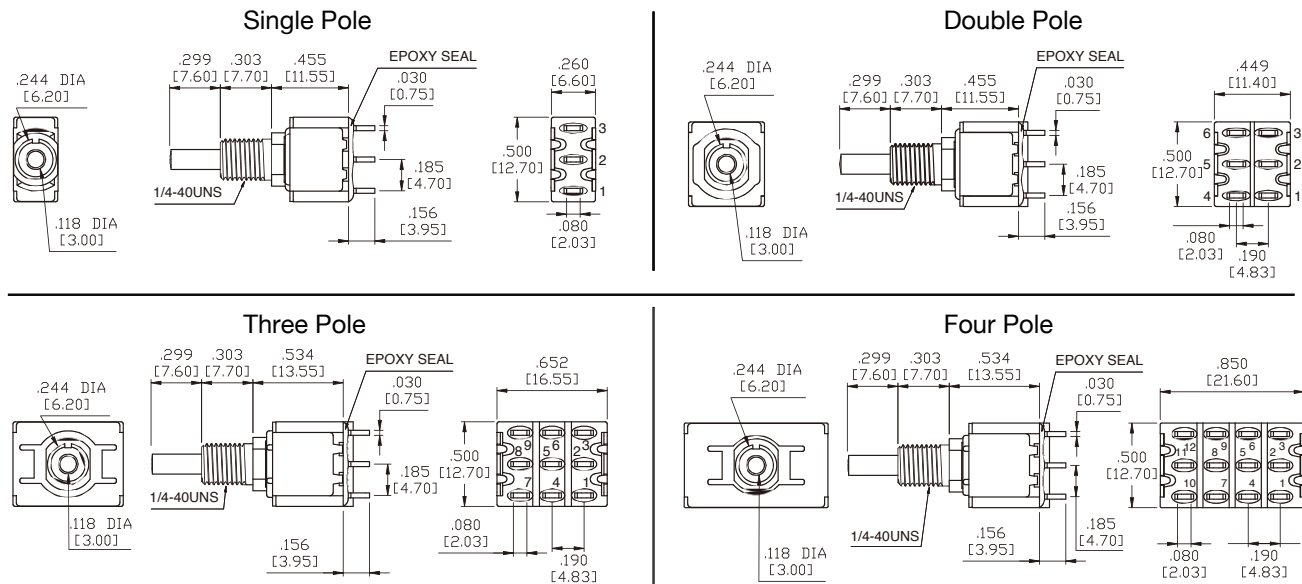


VS41, VS51



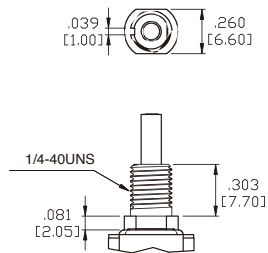
* PC Mounting for VS21, VS31, VS41, VS51 refer to VS2, VS3, VS4, VS5 respectively.

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



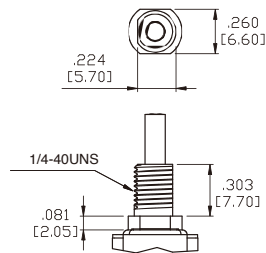
3MA-Series Dimensional Specifications: in. [mm]

B10 Threaded Standard B20 Non-Threaded

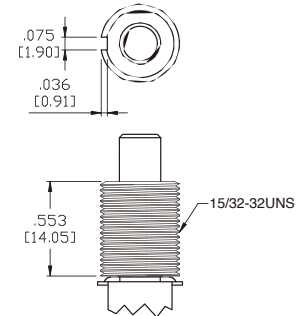


Bushing Options

B21 Non-Threaded

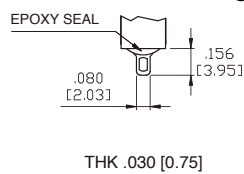


BD Threaded Standard

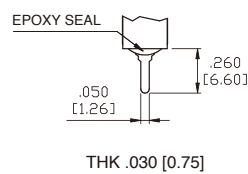


Termination Options

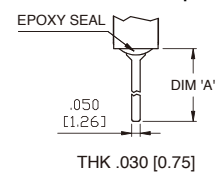
M1 Standard Solder Lug



M2 PC Thru-Hole

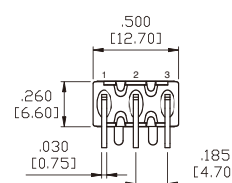
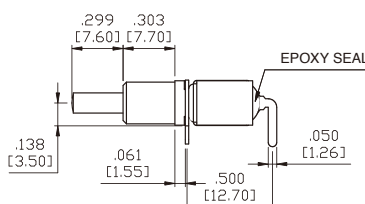
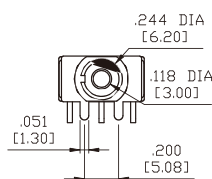


M5 Wire Wrap

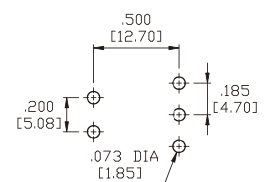


OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

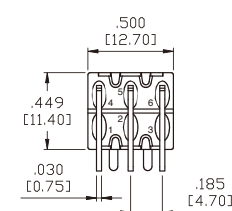
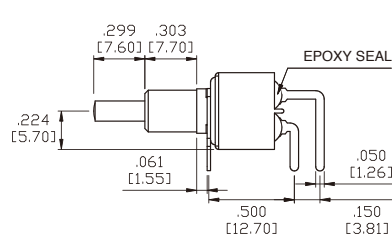
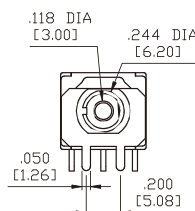
M6 Single Pole



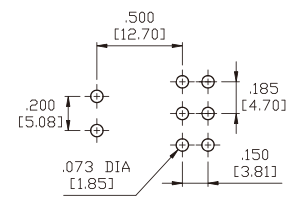
P.C.MOUNTING



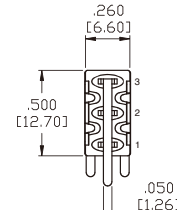
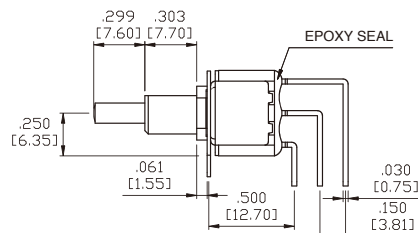
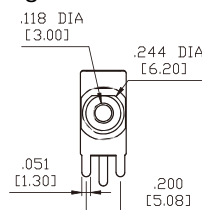
M6 Double Pole



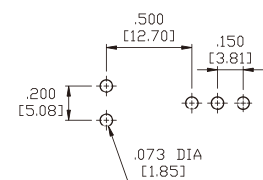
P.C.MOUNTING



M7 Single Pole



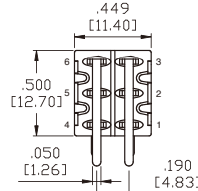
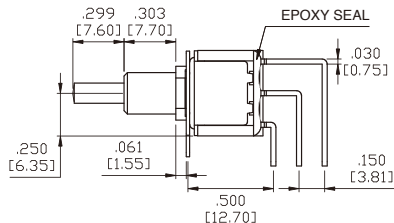
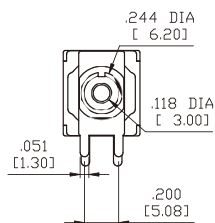
P.C.MOUNTING



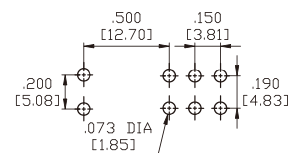
3MA-Series Dimensional Specifications: in. [mm]

Termination Options

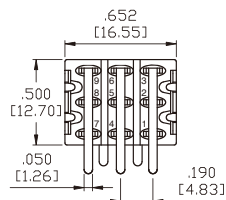
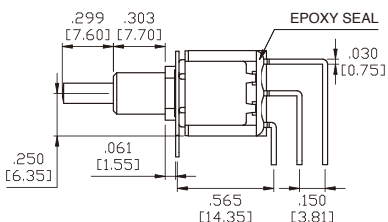
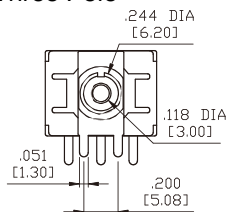
M7 Double Pole



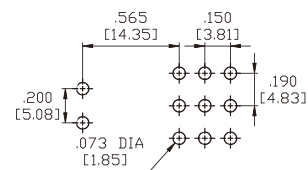
P.C.MOUNTING



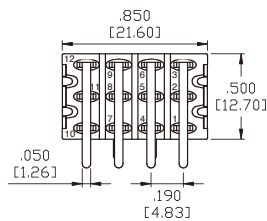
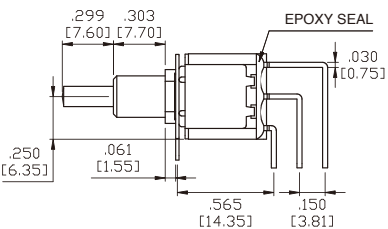
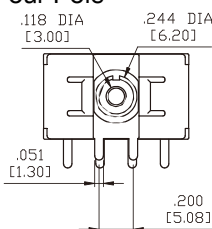
M7 Three Pole



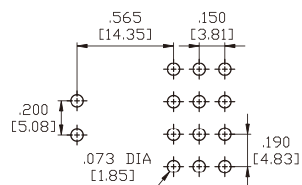
P.C.MOUNTING



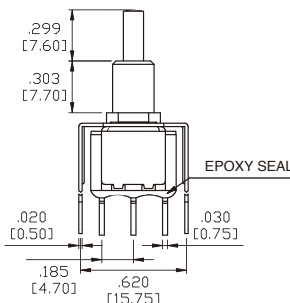
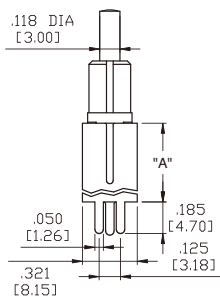
M7 Four Pole



P.C.MOUNTING

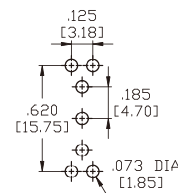


VS2-VS3 Single Pole

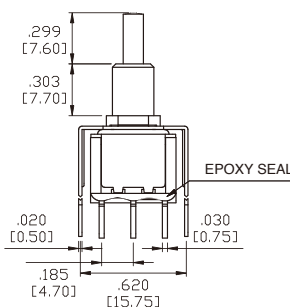
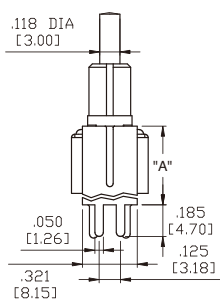


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

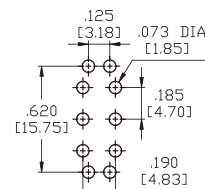


VS2-VS3 Double Pole



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

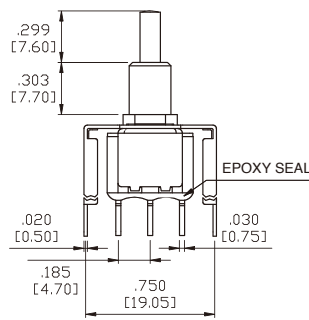
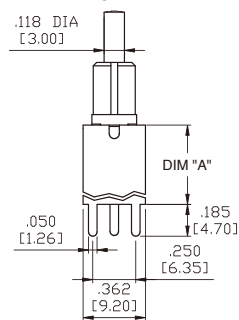
P.C.MOUNTING



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

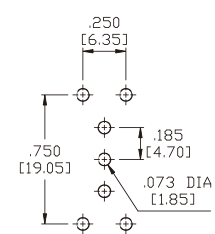
Termination Options

VS4-VS5 Single Pole

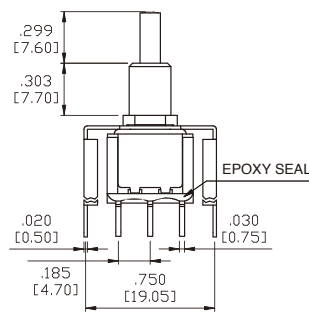
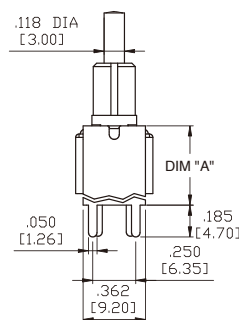


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

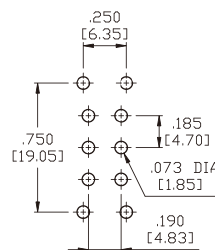


VS4-VS5 Double Pole



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

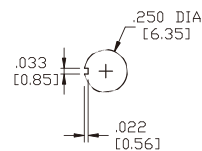
P.C.MOUNTING



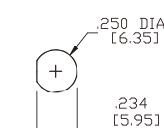
Panel Mounting

1/4 INCH BUSHING

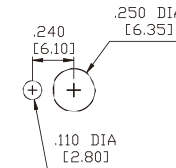
B10



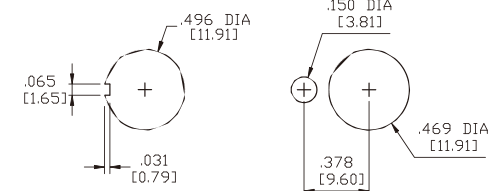
B20



B21



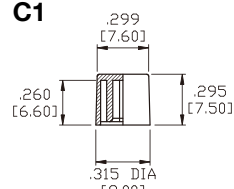
BD



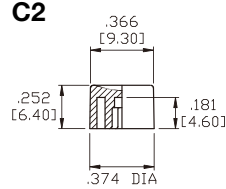
15/32 INCH BUSHING

Plunger Caps

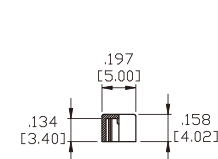
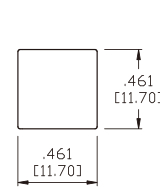
C1



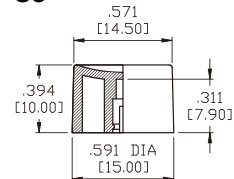
C2



C3

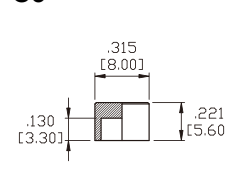


C5



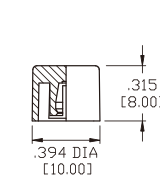
For PL plunger only

C6



For PD plunger only

C7



For PL plunger only

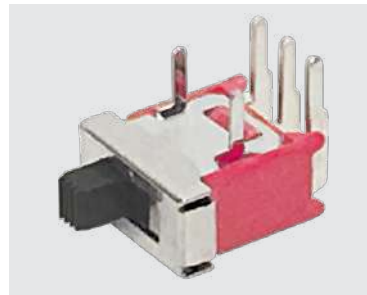
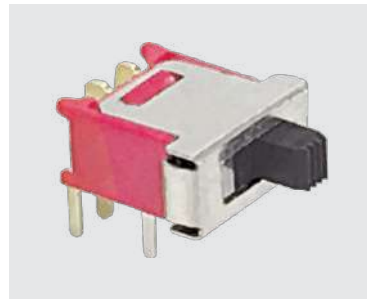
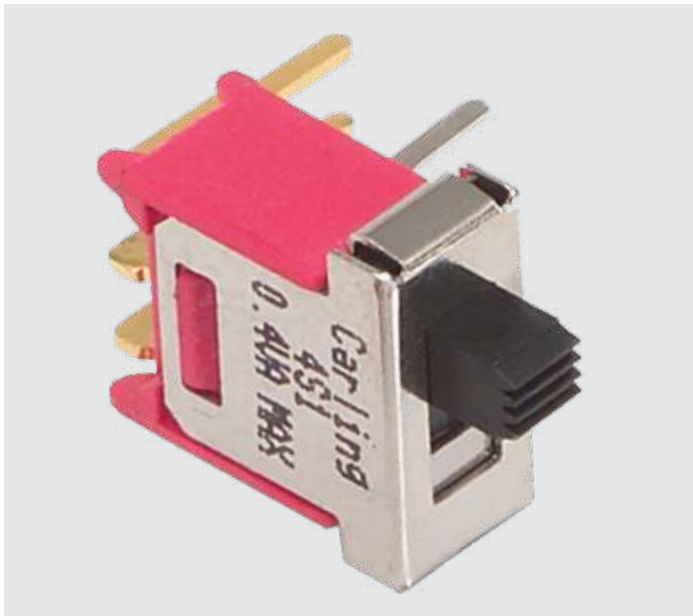
CAP AND FRAME COLORS			
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

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

4S-Series

SUBMINIATURE SLIDE SWITCHES

The 4S-Series sub-miniature slide switches feature maintained and momentary 2 or 3 position circuits, and offer a variety of ratings, contact materials, terminal platings, and mounting styles. These switches are able to withstand temperatures from -30°C to +85°C.



Product Highlights:

- Two or Three Position Circuitry
- Maintained or Momentary Action
- 125/250VAC or up to 28VDC
- Available in Silver, Gold or Tin Plating
- Supplied in Bulk or Tape Reel
- UL and CSA Approvals Available

Typical Applications:

- Consumer Electronics
- Instrumentation
- Computer Servers / Peripherals
- Test / Measurement

Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

Electrical

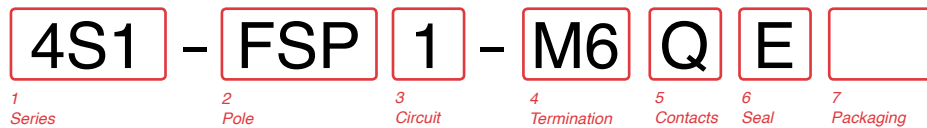
Contact Rating	refer to ordering scheme
Electrical Life	30,000 make & break cycles @ full load
Contact Resistance	10 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts
Insulation Resistance	1000 MΩ min.
Dielectric Strength	1500 Volts RMS @ sea level

Physical

Operating Temperature	-30°C to +85°C
Solder Heat Resistance	MIL-STD-202, Method 210

Material

Case	Dially phthalate (DAP) (UL 94V-0)
Slide Handle	Nylon
Housing	Stainless Steel
Terminal Seal	Epoxy

**1 SERIES****4S1** Sub-Miniature Slide Switch**2 POLES****FSP** Single Pole**3 CIRCUIT**

() - momentary

Position:	1	2	3
	2-1	Connected Terminals	2-3
1	ON	NONE	ON
2	ON	NONE	(ON)
3	ON	OFF	ON

4 TERMINATION

M2	PCB
M6	PC Mount, horizontal, right angle
M7	PC Mount, vertical, right angle
M71	Snap-In, vertical, right angle

5 CONTACTS / TERMINALS**Contact Material Terminal Plating Rating**

G	silver ¹	gold over silver	3A 125VAC or 28VDC; 1.5A 250VAC
K	gold ^{2,5}	tin ^{4,7}	0.4VA max 20V max (AC/DC)
P	silver ^{1,6}	tin ^{4,7}	3A 125VAC or 28VDC; 1.5A 250VAC
Q	silver ¹	silver ¹	3A 125VAC or 28VDC; 1.5A 250VAC
R	gold ²	gold ³	0.4VA max 20V max (AC/DC)

6 EPOXY SEAL**E** Epoxy Seal **0** without Epoxy Seal**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.

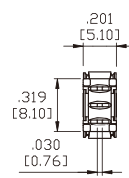
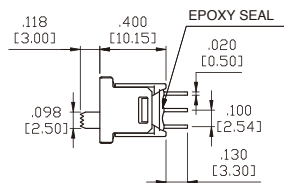
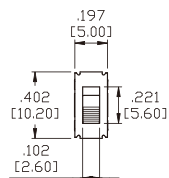
Notes:

- 1 Movable contact / terminal 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 Terminal platings: tin over copper alloy, available with PC type terminations only
- 5 Terminal contact platings: gold over nickel alloy
- 6 Terminal contact platings: silver over nickel alloy
- 7 Tin option available with PC type terminations only

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

4S1-Series Dimensional Specifications: in. [mm]

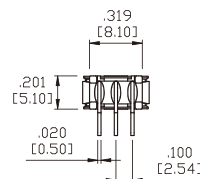
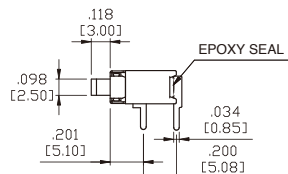
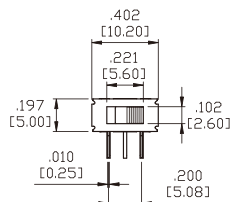
M2 Single Pole



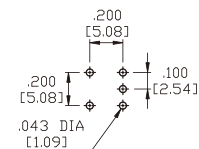
P.C.MOUNTING



M6 Single Pole

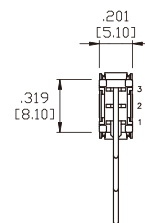
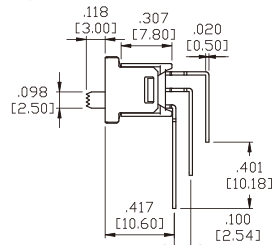
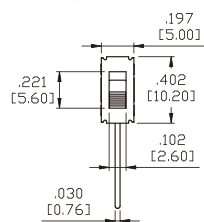


P.C.MOUNTING

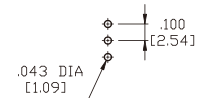


M7 Single Pole

M71 Snap-In Termination Single Pole



P.C.MOUNTING

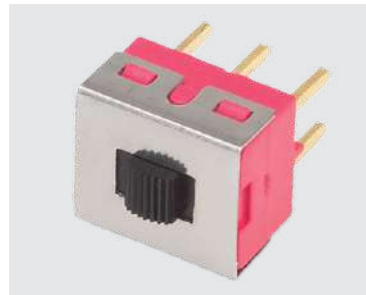
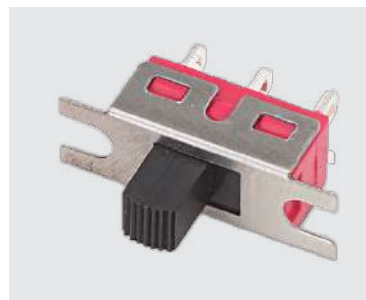
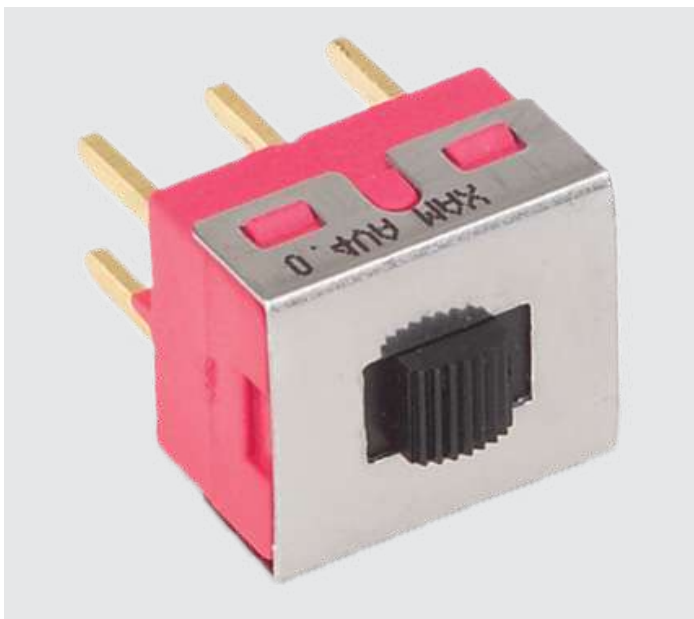


4M-SERIES

4M-Series

MINIATURE SLIDE SWITCHES

The 4M-Series miniature slide switches offer a variety of ratings, circuits, contact materials, and terminal platings. With 14 termination choices and 8 actuator styles, this versatile switch adapts to a variety of applications, and is able to withstand temperatures from -30°C to +85°C.



Product Highlights:

- Two or Three Position Circuitry
- 125/250VAC or up to 28VDC
- Available in Silver, Gold or Tin Plating
- Supplied in Bulk or Tape Reel
- UL and CSA Approvals Available

Typical Applications:

- Consumer Electronics
- Instrumentation
- Computer Servers / Peripherals
- Test / Measurement

Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

Electrical

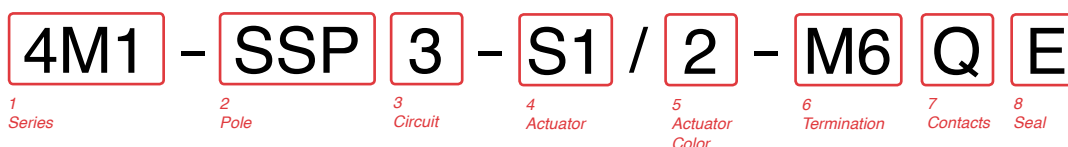
Contact Rating	refer to ordering scheme
Electrical Life	30,000 make & break cycles @ full load
Contact Resistance	10 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts
Insulation Resistance	1000 MΩ min.
Dielectric Strength	1500 Volts RMS @ sea level

Physical

Operating Temperature	-30°C to +85°C
Solder Heat Resistance	MIL-STD-202, Method 210

Material

Case	Diallyl phthalate (DAP) (UL 94V-0)
Slide Handle	Nylon
Housing	Stainless Steel
Terminal Seal	Epoxy



1 SERIES

4M1 Miniature Slide Switch

2 POLES

SSP Single Pole **SDP** Double Pole

3 CIRCUIT

() - momentary

Switching Position:			
1	2	3	
2-1, 5-4	Connected Terminals	2-3, 5,6	
1	ON	NONE	ON
3	ON	OFF	ON

4 ACTUATOR

S1 .201" height	S5 .053" height (for DPDT only)
S2 .301" height	S6 .488" height
S3 .370" height	S7 .311" height
S4 .140" height	T1 .209" height (for DPDT only)

5 ACTUATOR COLORS

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

6 TERMINATION

M1 Solder Lug	M61 Snap-In, 90°
M2 PCB	M7 PC Mount, 90° vertical
M3 Quick Connect	M71 Snap-In, 90°
M51 Wire Wrap .750	VS2 PC Mount, U bracket, .350 height
M52 Wire Wrap .964	VS3 PC Mount, U bracket, .575 height
M53 Wire Wrap .425	N1 Solder Lug without mounting tabs
M54 Wire Wrap 1.062	
M6 PC Mount, 90° horizontal	

7 CONTACTS / TERMINALS

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

8 EPOXY SEAL

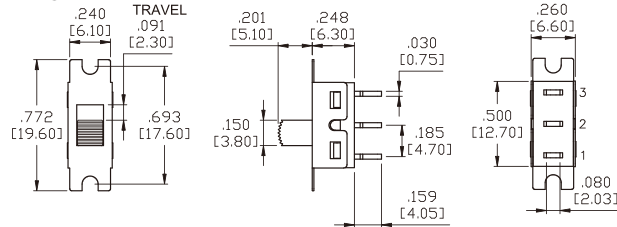
E Epoxy Seal	0 without Epoxy Seal
---------------------	-----------------------------

Notes:

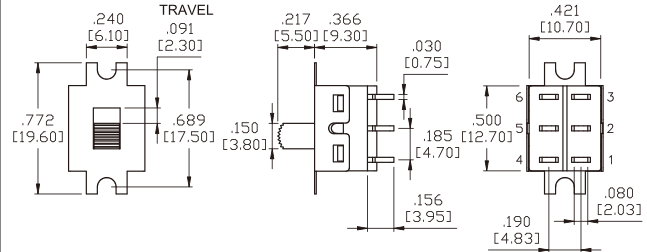
- Movable contact & terminal platings: silver over copper alloy
- Movable contact & terminal platings: gold over nickel over copper alloy
- Terminal platings: tin over nickel over copper alloy, available with PC terminations only
- Non-Black, white and red colors require a minimum order of 2500 pieces
- Tin option available with PC type terminations only

4M1-Series Dimensional Specifications: in. [mm]

Single Pole



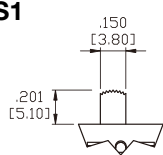
Double Pole



Actuator Options

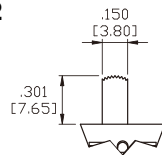
* All actuator length shown is SPDT model with M1 and M2 terminals.

S1



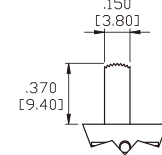
* Add 0.40 (.016) from actuator height for DPDT-M1 and M2 model.

S2



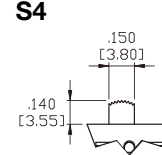
* Add 0.20 (.008) from actuator height for DPDT-M1 and M2 model.

S3



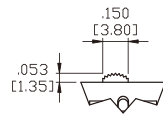
* Add 0.30 (.012) from actuator height for DPDT-M1 and M2 model.

S4

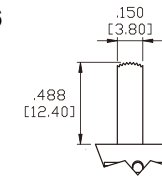


* Add 0.40 (.016) from actuator height for DPDT-M1 and M2 model.

S5

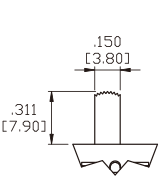


S6



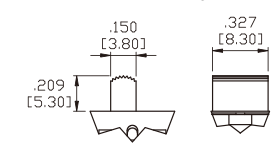
* Add 0.70 (.028) from actuator height for DPDT-M1 and M2 model.

S7



* Add 0.40 (.016) from actuator height for DPDT model.

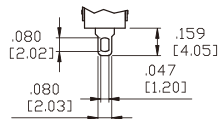
T1 for DPDT only



4M1-Series Dimensional Specifications: in. [mm]

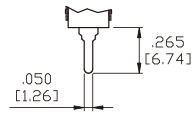
Termination Options

M1 Standard Solder Lug



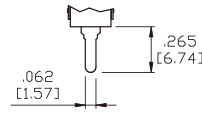
THK .030 [0.75]
* Standard with Mounting Tabs.

M2 PC Thru-Hole



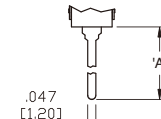
THK .030 [0.75]

M3 Quick Connect



THK .030 [0.75]

M5 Wire Wrap

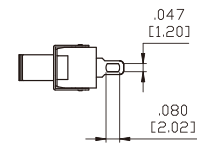
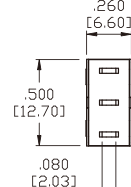
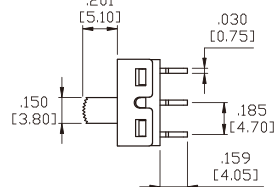
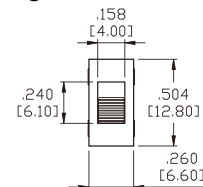


THK .030 [0.75]

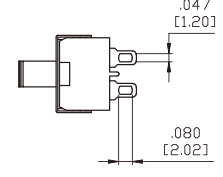
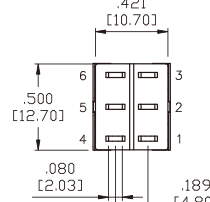
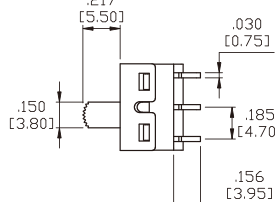
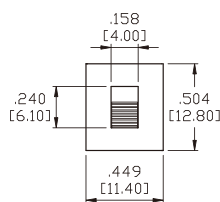
OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

Termination Options without Mounting Tabs

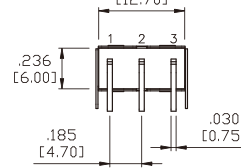
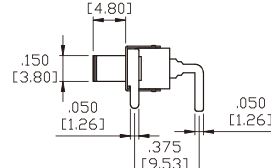
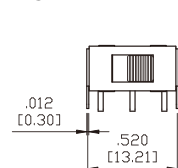
N1 Single Pole



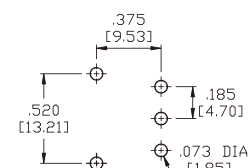
N1 Double Pole



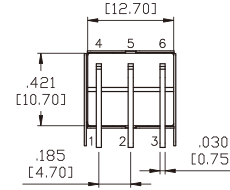
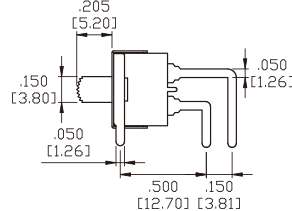
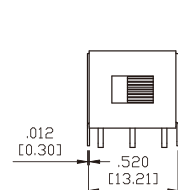
M6 Single Pole



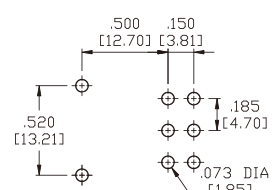
P.C.MOUNTING



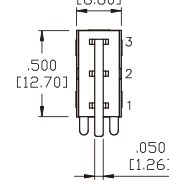
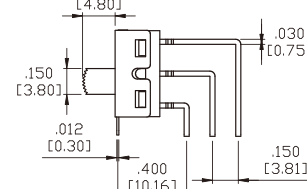
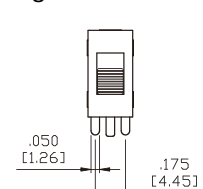
M6 Double Pole



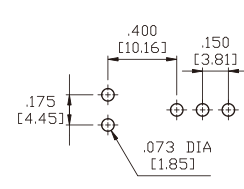
P.C.MOUNTING



M7 Single Pole



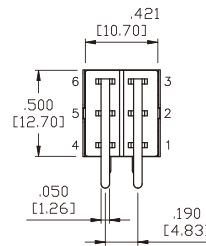
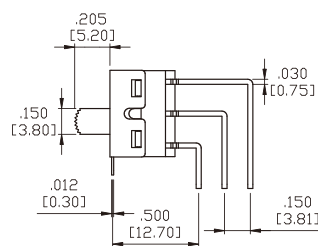
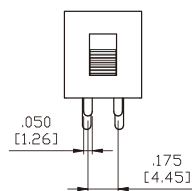
P.C.MOUNTING



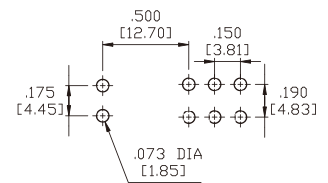
4M1-Series Dimensional Specifications: in. [mm]

Termination Options

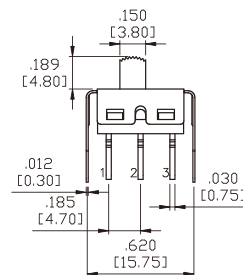
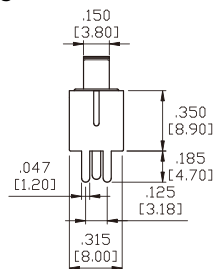
M7 Double Pole



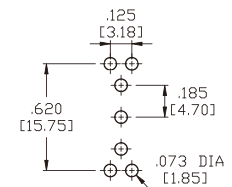
P.C.MOUNTING



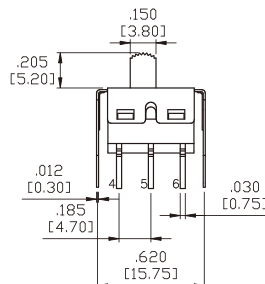
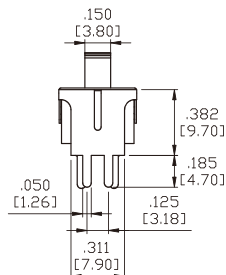
VS2 Single Pole



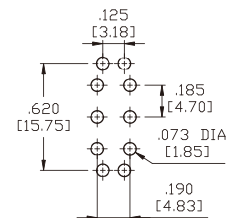
P.C.MOUNTING



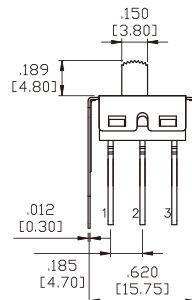
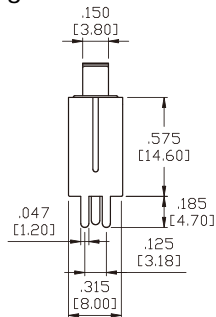
VS2 Double Pole



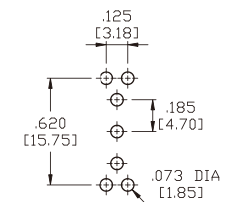
P.C.MOUNTING



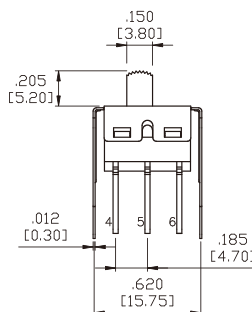
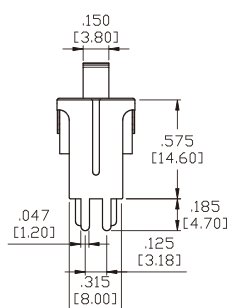
VS3 Single Pole



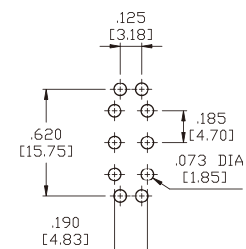
P.C.MOUNTING



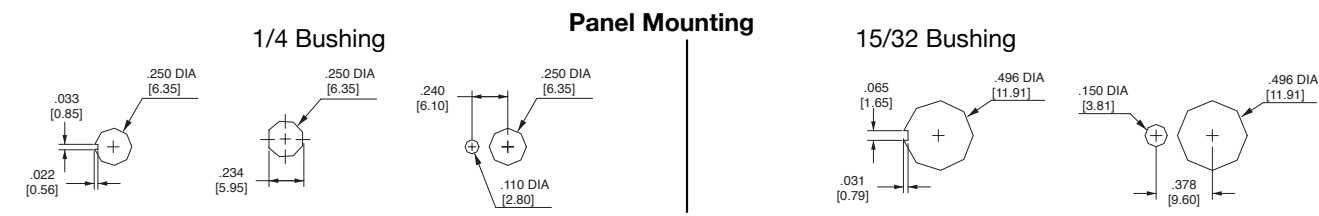
VS3 Double Pole



P.C.MOUNTING

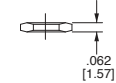
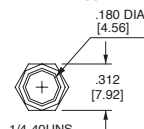


Dimensions: in. [mm]

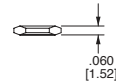
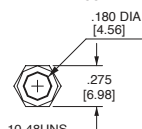


NUTS

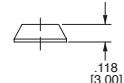
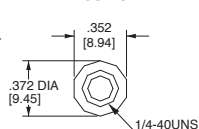
STANDARD .100

FOR 2M-Series
(HDW2)

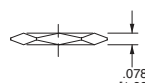
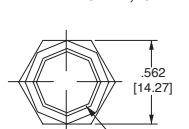
STANDARD .200

FOR 2S-Series
(HDW21)

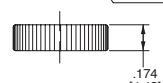
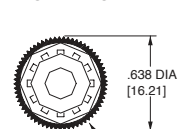
DRESS NUT

FOR 2M-Series
(HDW3)

STANDARD FOR T7,T8

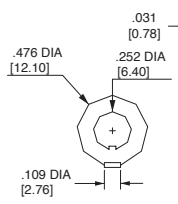
FOR 2M-Series
(HDW4)

KNURLED NUT

FOR 2M-Series
(HDW5)

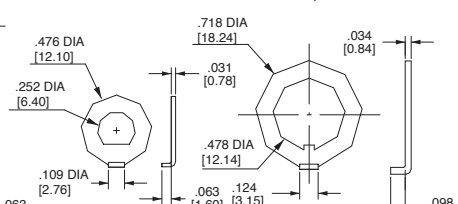
Locking Rings

STANDARD



(HDW15)

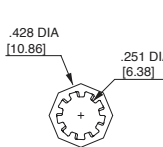
FOR T7,T8



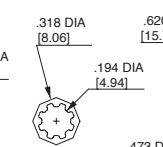
(HDW17)

Locking Washers

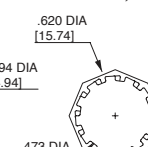
STANDARD .100

Thk. .020 [0.52]
For 2M-Series
(HDW11)

STANDARD .200

Thk. .021 [0.54]
For 2S-Series
(HDW22)

FOR T7,T8

Thk. .020 [0.52]
For 2M-Series
(HDW12)

T1 Actuator Cap



* MATERIAL: PVC

Toggle Caps

T2 Actuator Cap



* MATERIAL: PVC

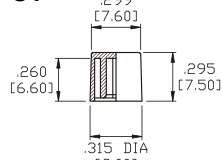
T9 Actuator Gloss Plastic



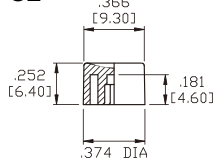
* MATERIAL: ABS

Plunger Caps

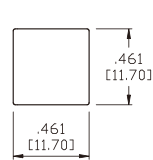
C1



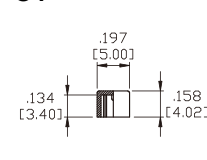
C2



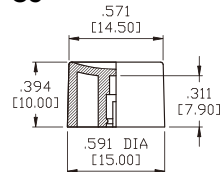
C3



C4

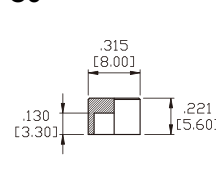


C5



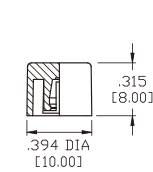
For PL plunger only

C6



For PD plunger only

C7



For PL plunger only

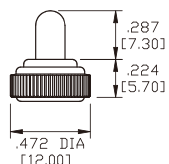
CAP AND FRAME COLORS			
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

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

Dimensions: in. [mm]

Rubber Boots

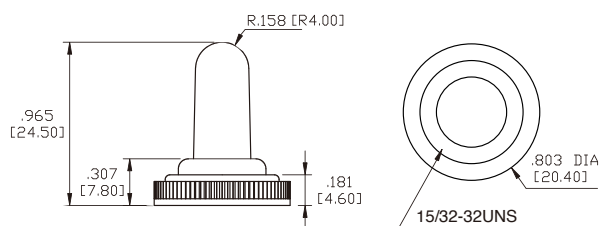
2M1-E1A Rubber Boot



E1A with Internal O-Ring Seal
K1=METRIC M6 THREADED (For B8 bushing only)

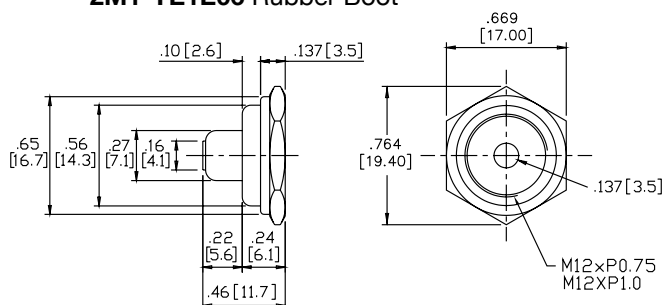
* FOR 2M1-SERIES, T1 ACTUATOR ONLY (not available with B0 bushing)

2M1-YE1A06 Rubber Boot



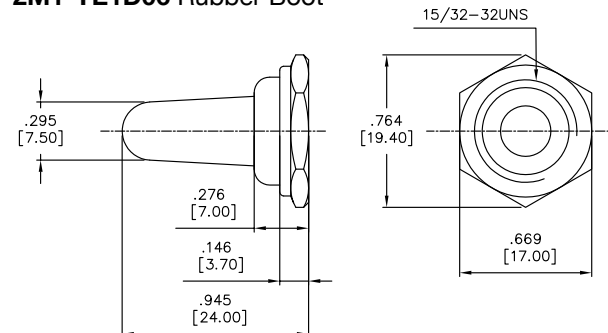
* FOR 2M1-SERIES, T8 ACTUATOR and B0 BUSHING ONLY

2M1-YE1E06 Rubber Boot



* FOR 2M1-SERIES, T7 & T8 ACTUATORS and B0 BUSHING ONLY

2M1-YE1D06 Rubber Boot



* FOR 2M1-SERIES, T8 ACTUATOR and B0 BUSHING ONLY

Accessory Photos:

E1A



YE1A06



T9



T1



T2



Hardware Table				
Series	Bushing	Nut	Washer	Locking Ring
1S1	Rocker	none	none	none
1SS	Rocker	none	none	none
1SM	Rocker	none	none	none
1M1	Rocker	none	none	none
1MS	Rocker	none	none	none
2S1	B1	2M1-HDW21 *2 pieces	2M1-HDW22 *1 piece	none
	B2, B4, B6, B8	none	none	none
	B3	2M1-HDW21 *2 pieces	2M1-HDW22 *1 piece	none
	B5	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	none
	B7	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	none
2SM	N/A	none	none	none
2SS	B4	none	none	none
2M2/2MS	B4	none	none	none
	B1	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW15 *1 piece
2M1	B2, B4	none	none	none
	B1, B3	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW15 *1 piece
	B5	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW16 *1 piece
	B6	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW15 *1 piece
	B7	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW16 *1 piece
	B8	2M1-HDW6 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW14 *1 piece
	B9	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW16 *1 piece
	B0	2M1-HDW4 *2 pieces	2M1-HDW17 *1 piece	2M1-HDW12 *1 piece
2M1H	BJ, BK	2M1-HDW4 *1 piece	3MNH-WCP WCP-0872 (O-Ring) *1 piece	none
3MNH	BJ, BL	2M1-HDW4 *1 piece	3MNH-WCP WCP-0872 (O-Ring) *1 piece	none
3S1	B6, B7, B0, B9	none	none	none
	B5	2M1-HDW21 *2 pieces	2M1-HDW22 *1 piece	none
	B8	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW16 *1 piece
3SS	N/A	none	none	none
3SM	N/A	none	none	none
3MN	B6, B20, B21	none	none	none
	B10	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW15 *1 piece
	B11	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW16 *1 piece
3MS	B1	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW15 *1 piece
	B4	none	none	none
3MA	B20, B21	none	none	none
	BD	2M1-HDW4 *2 pieces	2M1-HDW12 *1 piece	2M1-HDW17 *1 piece
	B10	2M1-HDW2 *2 pieces	2M1-HDW11 *1 piece	2M1-HDW15 *1 piece
4S1	Slide	none	none	none
4M1	Slide	none	none	none
4PM	Slide	none	none	none

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Product Selector, Resources, Configurit, Find Rep, Product Materials and Videos.



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SWITCHES AND CONTROLS

Rocker, toggle, pushbutton, rotary, battery disconnects and controls.



catalog

MINI & SUB-MINI SWITCHES

Sealed and non-sealed rocker, toggle, pushbutton and slide options.



catalog

HYDRAULIC-MAGNETIC CIRCUIT PROTECTION

1-6 poles from .02 to 700A with CSA, VDE, TUV, UL489, UL489A, UL1500 approvals.



catalog

THERMAL CIRCUIT PROTECTION

1 pole from 3 to 60A with UL, cUL, CE, UL1500/ISO 8846 approvals.



catalog

GFCI/ELCI CIRCUIT PROTECTION

1-3 poles from 0.10 to 50A with CSA, UL489, UL1077, UL1053, UL1500 approvals.

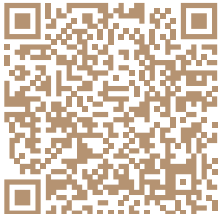


catalog

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TELECOM/DATACOM

Hydraulic-Magnetic Circuit Breakers



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Switches and Circuit Breakers



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