

CATALOG

Miniature Switches

Rocker, Toggle, Pushbutton & Slide



Carling Technologies®
/// NOW PART OF



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

- Electronic
- Rotary
- Rocker
- Combination
- Toggle
- Battery
- Pushbutton
- Disconnect

CIRCUIT PROTECTION

- Hydraulic-Magnetic
- Thermal
- GFCI / ELCI
- Fuse Links & Holders

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



Renewable Energy

OTHER SERVED INDUSTRIES:



Medical



Industrial Control



Audio / Visual



Commercial Food



HVAC



Floor Care



Generators



Small Appliances



Security Systems



Test & Measurement

HEADQUARTERS/MANUFACTURING FACILITIES:



COMPETITIVE ADVANTAGES⁺



Innovative & Eco-Friendly Products



Excellent Quality & Customer Service



Reliable & On-Time Delivery



Vertical Integration

WORLDWIDE NUMBERS:



2800⁺
EMPLOYEES



150⁺
ENGINEERS



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 [configurit](#), [product selector](#) and [stock check](#). 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, hydraulic-magnetic, ground fault and thermal circuit breakers.

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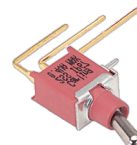
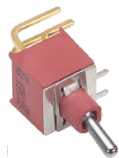
Selector Guide

ROCKERS



	IMS-Series	IMI-Series	ISM-Series	ISS-Series	IS1-Series
Sub-Miniature	-	-	✓	✓	✓
Miniature	✓	✓	-	-	-
Sealed	✓	-	✓	✓	-
Surface Mount	-	-	✓	-	-
Approvals			N/A	N/A	
IP Rating	IP67	N/A	N/A	N/A	N/A

TOGGLES



	2MS-Series	2MIH-Series	2MI-Series	2SS-Series	2SM-Series	2S1-Series
Sub-Miniature	-	-	-	✓	✓	✓
Miniature	✓	✓	✓	-	-	-
Sealed	✓	✓	-	✓	✓	-
Surface Mount	-	-	-	✓	-	-
Approvals				N/A	N/A,	
IP Rating	IP67	IP67	N/A	IP67	IP67	N/A

Selector Guide

PUSHBUTTON



3MNH-Series

3MA-Series

3MS-Series

3MN-Series

3SM-Series

3SS-Series

3S1-Series

	3MNH-Series	3MA-Series	3MS-Series	3MN-Series	3SM-Series	3SS-Series	3S1-Series
Sub-Miniature	-	-	-	-	✓	✓	✓
Miniature	✓	✓	✓	✓	-	-	-
Sealed	✓	-	✓	-	✓	✓	-
Surface Mount	-	-	-	-	✓	-	-
Approvals					N/A,	N/A	N/A
IP Rating	IP67	N/A	IP68	N/A	IP67	IP67	N?A

SLIDE



4M1-Series

4S1-Series

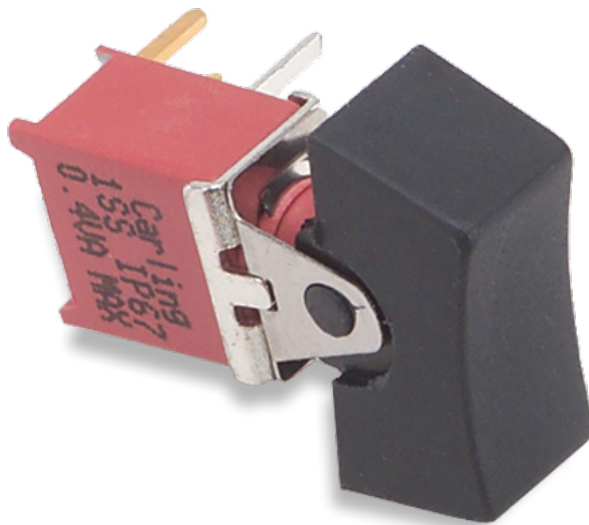
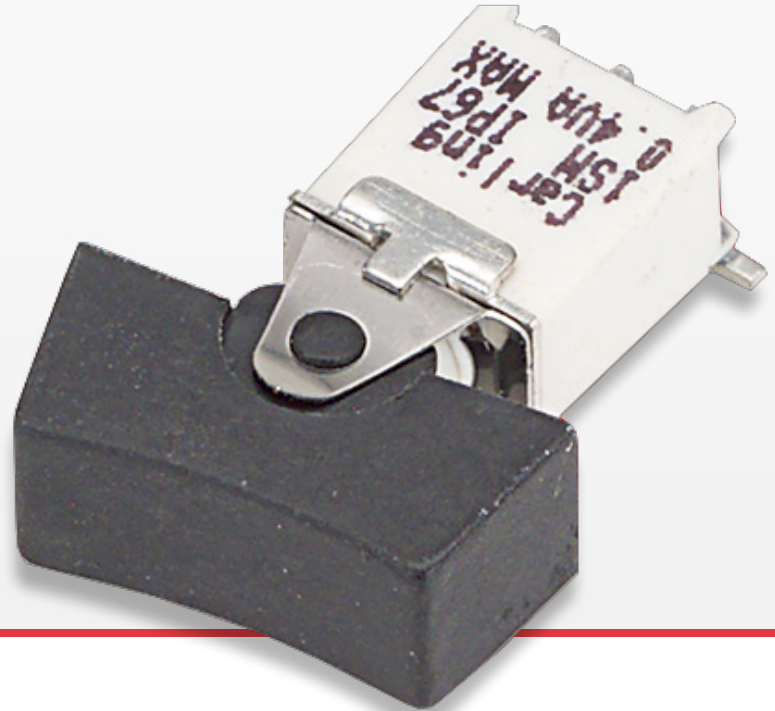
	4M1-Series	4S1-Series
Sub-Miniature	-	✓
Miniature	✓	-
Sealed	-	-
Surface Mount	-	-
Approvals		N/A
IP Rating	N/A	N/A

1S-Series

Miniature Rockers & Paddles

[PRODUCT WEBPAGE](#)

request sample, configure part



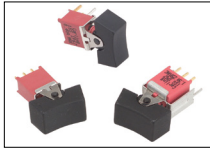
The 1S family of sub-miniature rocker switches is composed of three switch series; the 1S1-Series sub-miniature rocker switch, the 1SS-Series sealed sub-miniature rocker switch, and the 1SM-Series surface mount sealed sub-miniature rocker switch. All of these series offer a variety of ratings, circuits,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

1-2 Poles **.4-3** Amps **125, 250** VAC **28** VDC

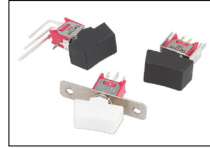
Typical Applications

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

Tech Specs



ISS-Series
Sealed
Sub-
Miniature



ISI-Series
Sub-
Miniature



ISM-Series
Sealed Surface Mount
Sub-Miniature
Rocker Switch

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	ISI-Series: 30,000 make & break cycles @ full load ISS & ISM-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

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°

Material

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

Ordering Scheme

Sample Part Number **ISS - WMSP 1 - R2 / 2 M2 G E**

Selection 1 2 3 4 5 6 7 8

1. SERIES

ISS 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

() - momentary
Position: **1** **2** **3**

1	2-3, 5-6	Connected Terminals	2-1, 5-4
2	ON	NONE	ON
3	ON	NONE	(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 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.

- Movable contact and terminal platings: silver over copper alloy
- Movable contact 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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

Ordering Scheme

Sample Part Number 1S1 - MSP 1 - R2 / 2 M6 Q E

Selection 1 2 3 4 5 6 7 8

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
ON	NONE	ON
ON	NONE	(ON)
ON	OFF	ON
(ON)	OFF	(ON)
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	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	
VS3 PC Mount, U bracket	

See dimensional specifications.

7. CONTACTS / TERMINALS

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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

Ordering Scheme

Sample Part Number 1SM - WMSP 1 - R2 - M2 G E

Selection 1 2 3 4 5 6 7

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
ON	NONE	ON
ON	NONE	(ON)
ON	OFF	ON
(ON)	OFF	(ON)
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 dimensional specifications.

6. CONTACTS / TERMINALS

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

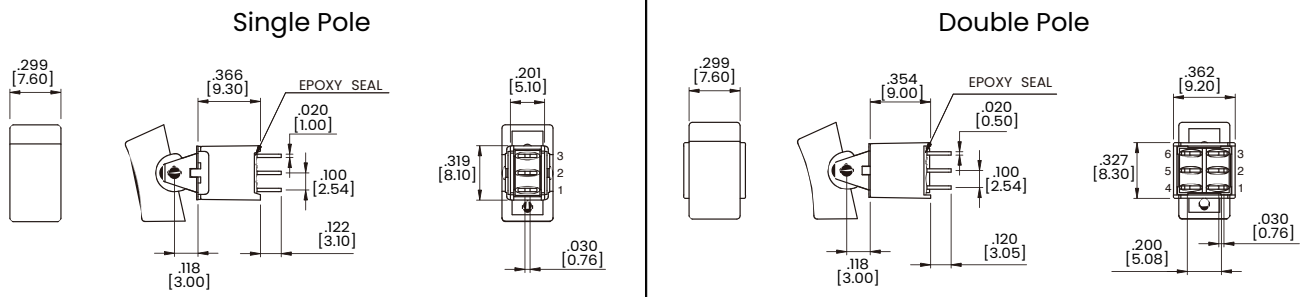
6 Terminal contact platings: silver over nickel alloy

[Configure Complete Part Number >](#)

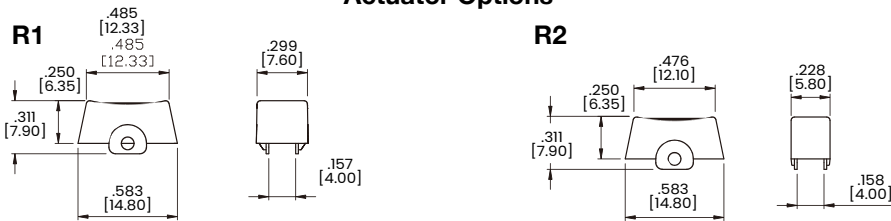
[Browse Standard Parts >](#)

Dimensional Specs

inches [millimeters]

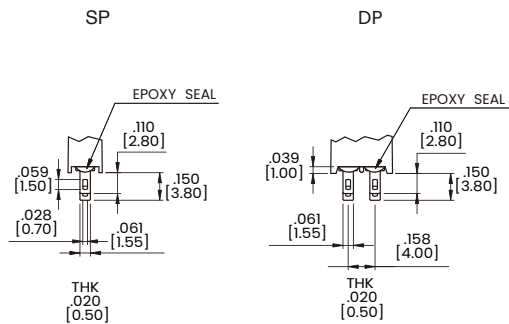


Actuator Options

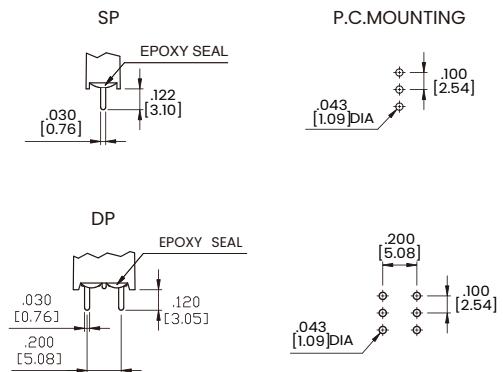


Termination Options

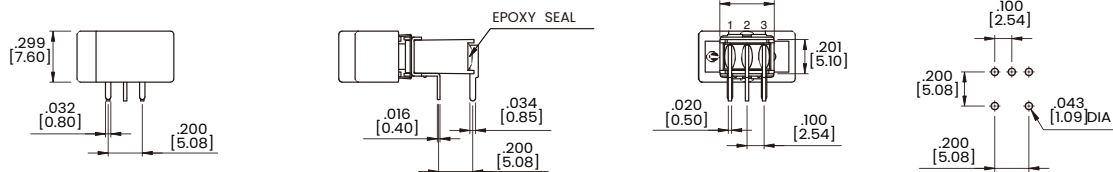
M1 STD. Solder Lug



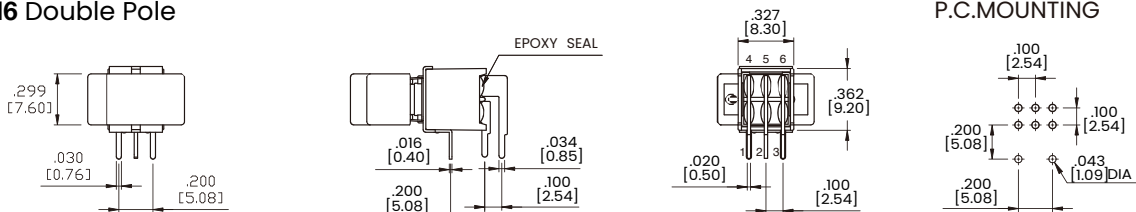
M2 PC Thru-Hole



M6 Single Pole



M6 Double Pole

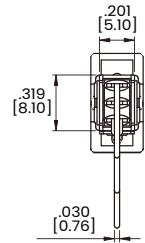
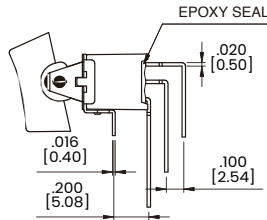
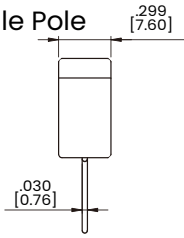


Dimensional Specs

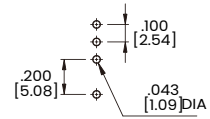
inches [millimeters]

Termination Options

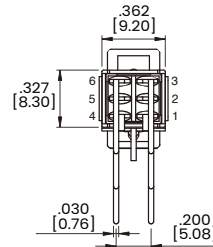
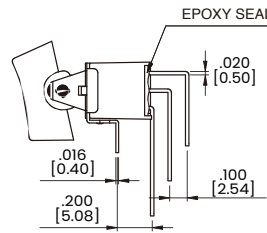
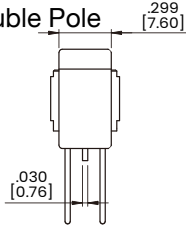
M7 Single Pole



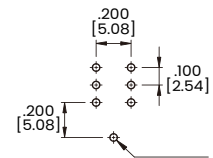
P.C.MOUNTING



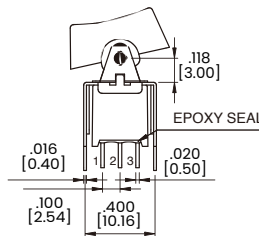
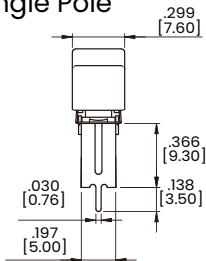
M7 Double Pole



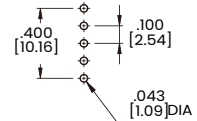
P.C.MOUNTING



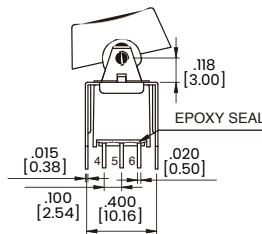
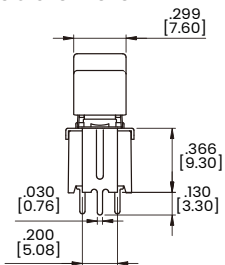
VS2 Single Pole



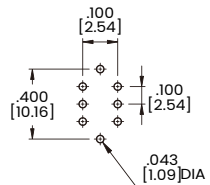
P.C.MOUNTING



VS2 Double Pole

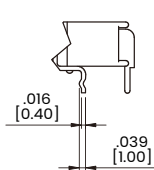


P.C.MOUNTING

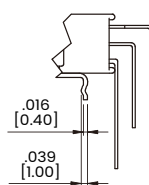


Snap-In Termination Options

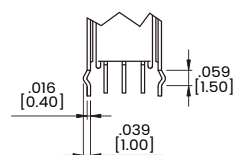
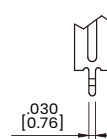
M61



M71



VS21

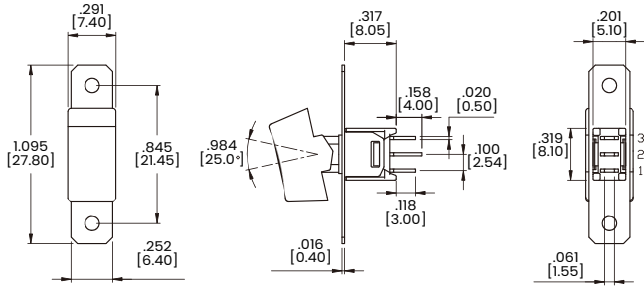


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

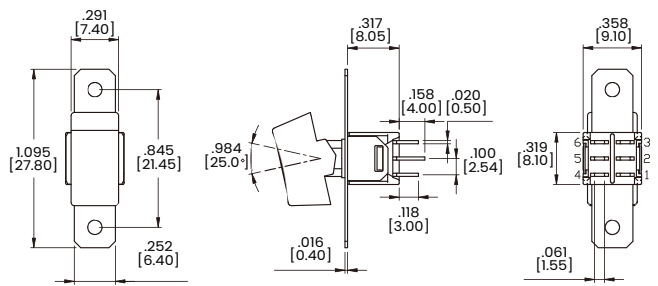
Dimensional Specs

inches [millimeters]

Single Pole

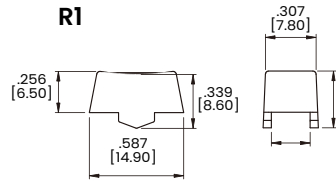


Double Pole

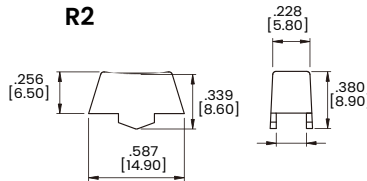


Actuator Options

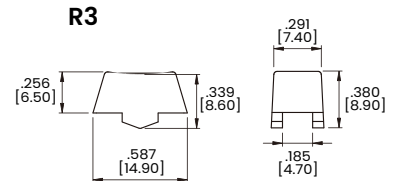
R1



R2

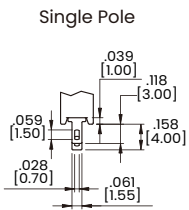


R3

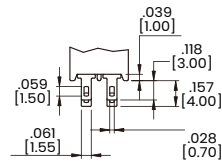


Termination Options

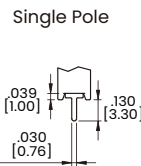
M1 STD. Solder Lug



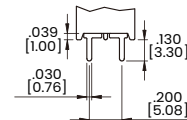
Double Pole



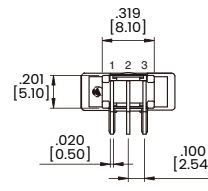
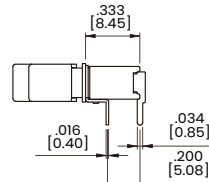
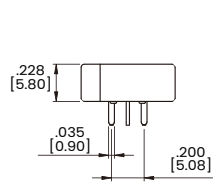
M2 PC Thru-Hole



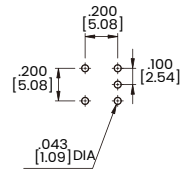
Double Pole



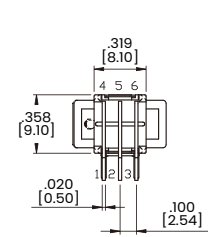
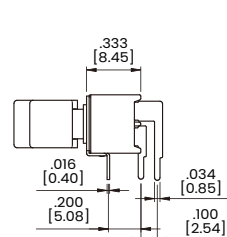
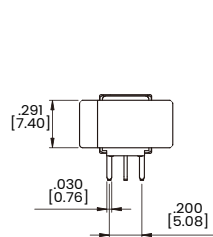
M6 Single Pole



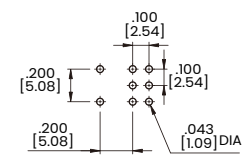
P.C.MOUNTING



M6 Double Pole



P.C.MOUNTING

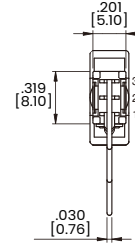
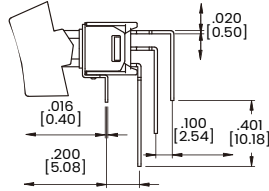
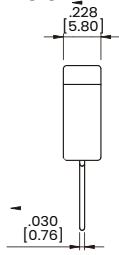


Dimensional Specs

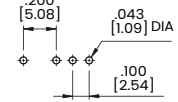
inches [millimeters]

Termination Options

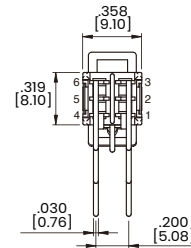
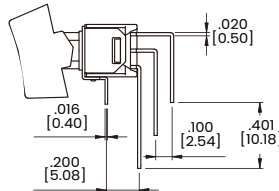
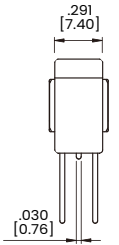
M7 Single Pole



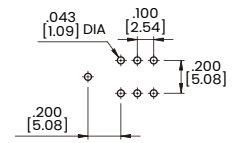
P.C. MOUNTING



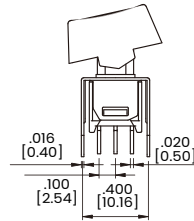
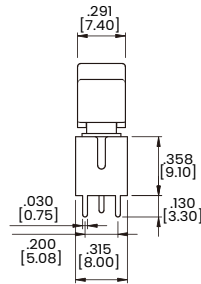
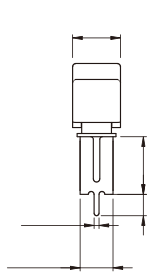
M7 Double Pole



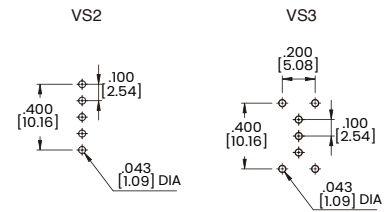
P.C. MOUNTING



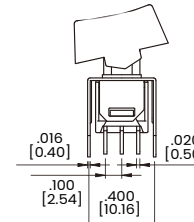
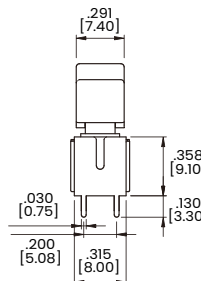
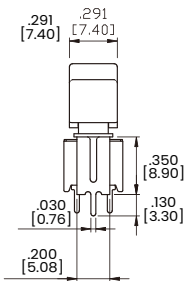
VS2-VS3 Single Pole



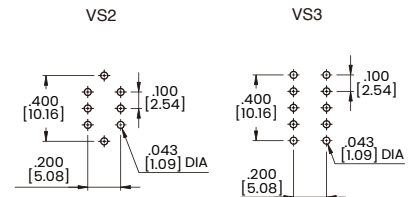
P.C. MOUNTING



VS2-VS3 Double Pole

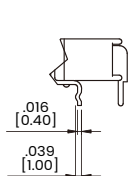


P.C. MOUNTING

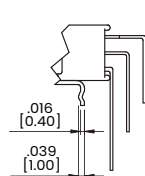


Snap-In Termination Options

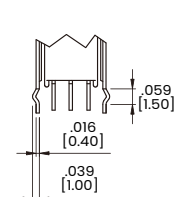
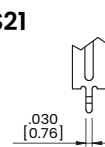
M61



M71



VS21

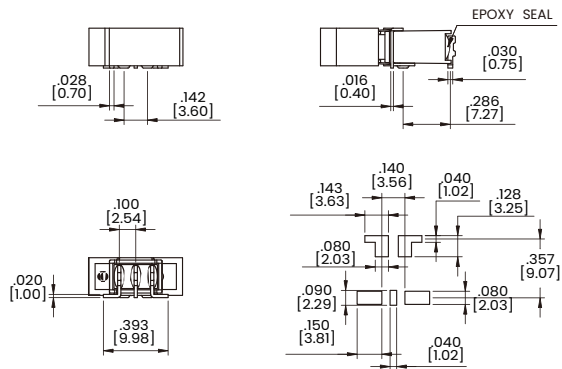


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

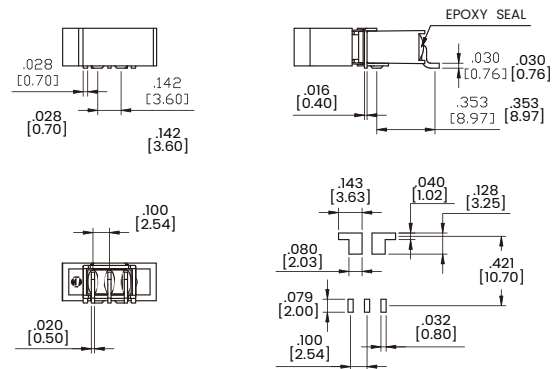
Dimensional Specs

inches [millimeters]

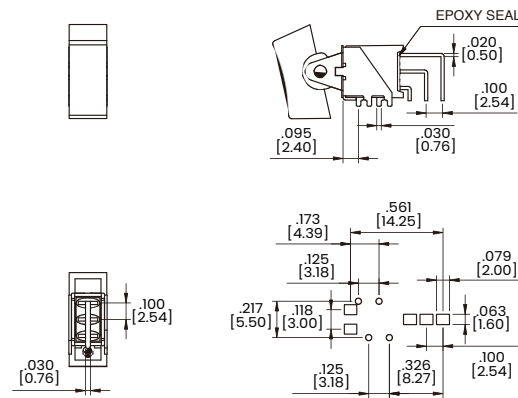
M6 Single Pole



S6 Single Pole

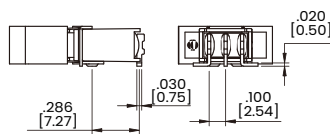


S7 Single Pole

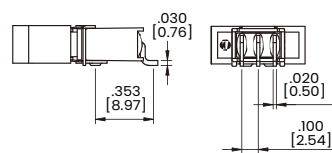


Termination Options

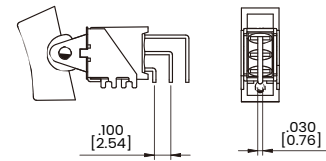
M6



S6



S7

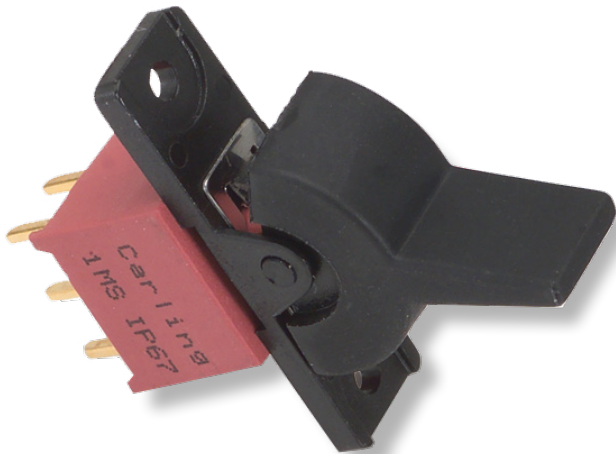


1M-Series

Miniature Rockers & Paddles

PRODUCT WEBPAGE

request sample, configure part



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.

1-3

Poles

.4-5

Amps

125, 250

VAC

28

VDC

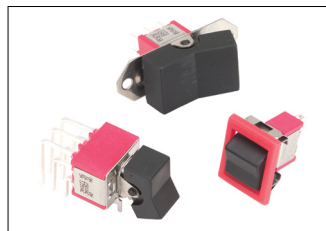
Typical Applications

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

Tech Specs



IMS-Series
Sealed
Miniature Rocker
& Rocker Switch



IMI-Series
Miniature Rocker
& Rocker Switch

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	IMS-Series: 30,000 make & break cycles @ full load IMI-Series: 50,000 make & breakcycles @ 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	IMS-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210
Actuator Travel	25°

Material

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

Ordering Schemes

Sample Part Number

IMS - SP 1 - R6 / 2 M6 G E

Selection 1 2 3 4 5 6 7 8

1. SERIES

IMS 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 **R5** Large Rocker
R2 Standard Paddle **R6** Small Rocker
R3 Medium Rocker **R7** Medium Paddle
R4 Large 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 dimensional specifications.

7. CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
G silver ¹	gold over silver 2A	5A 125VAC or 28VDC, 250VAC	us, 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, 250VAC	us, 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:

- 1 Tin option not available with M1 and M3 terminals.
- 2 Movable contact and terminal platings: silver over copper alloy
- 3 Movable contact 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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

Sample Part Number

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

Selection 1 2 3 4 5 6 7 8 9

1. SERIES

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

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 dimensional specifications.

8. CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
G silver ³	gold over silver 2A	5A 125VAC or 28VDC, 250VAC	
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	
Q silver ³	silver ³	5A 125VAC or 28VDC, 2A 250VAC	
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:

- 1 Tin option not available with M1 and M3 terminals.
- 2 Double-Pole and Four-Pole only. Center position connects 2-3, 5-4, 8-9, 11-10
- 3 Double-Pole only
- 4 Movable contact and terminal platings: silver over copper alloy
- 5 Movable contact platings: gold over nickel over copper alloy
- 6 Terminal platings: gold over nickel over copper alloy
- 7 Terminal platings: tin over copper alloy
- 8 Terminal contact platings: gold over nickel alloy
- 9 Terminal contact platings: silver over nickel alloy

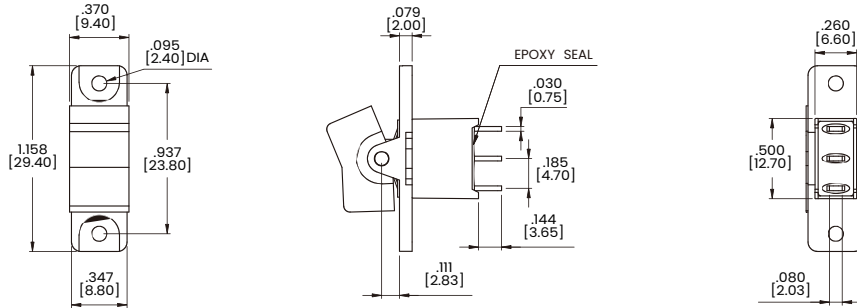
[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

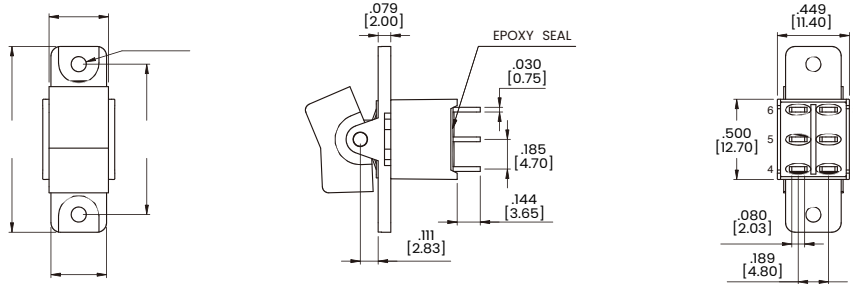
Dimensional Specs

inches [millimeters]

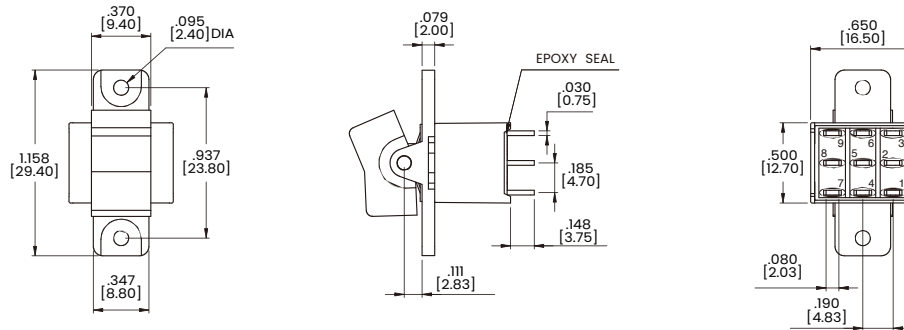
Single Pole



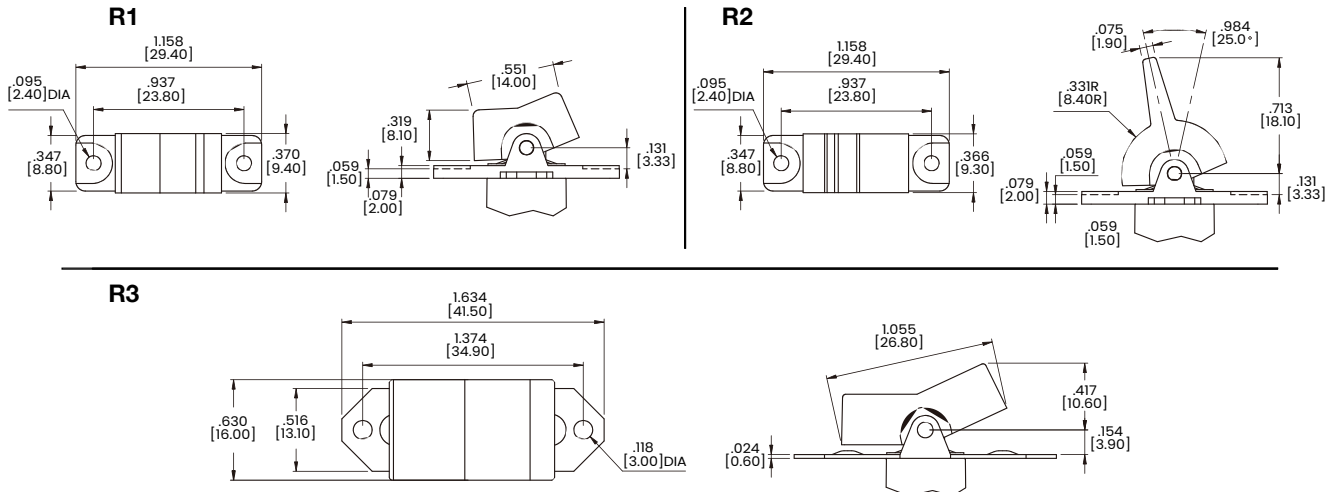
Double Pole



Three Pole



Actuator Options for Panel Rear Mount

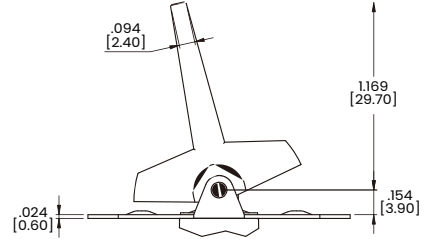
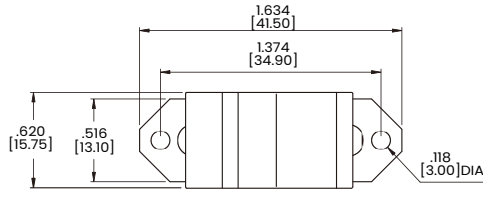


Dimensional Specs

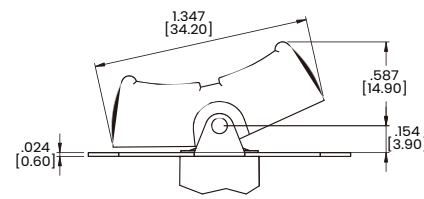
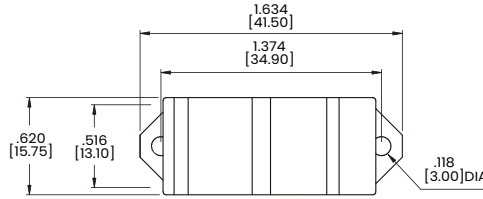
inches [millimeters]

Actuator Options for Panel Rear Mount

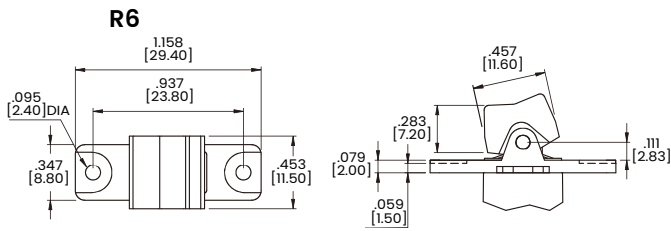
R4



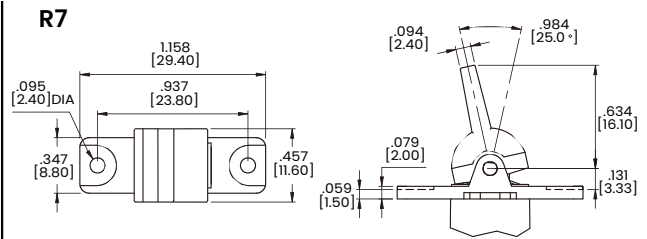
R5



R6

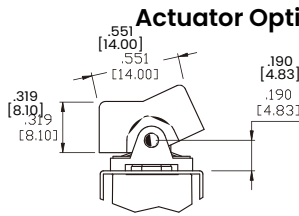
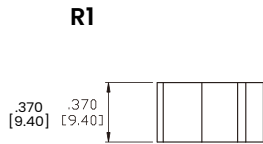


R7

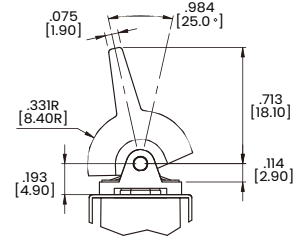
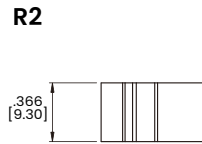


Actuator Options for PC Mount

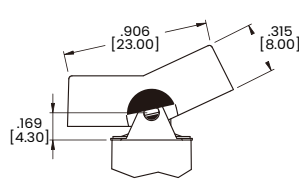
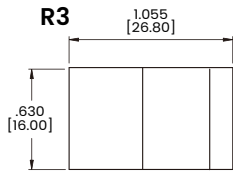
R1



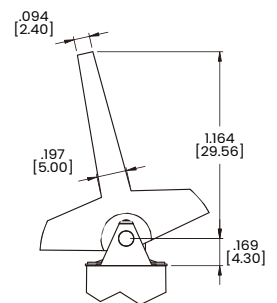
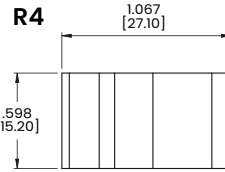
R2



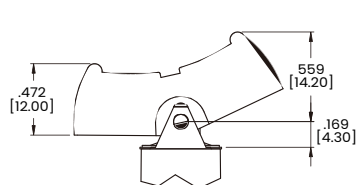
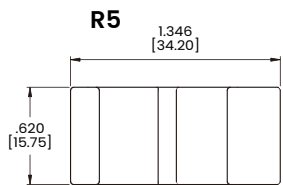
R3



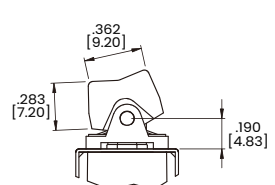
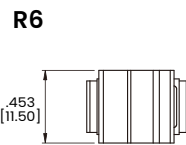
R4



R5



R6

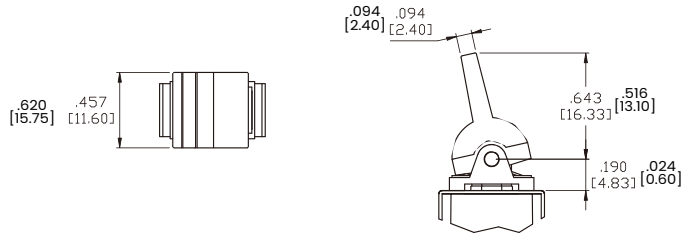


Dimensional Specs

inches [millimeters]

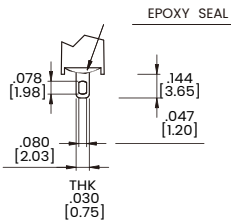
Actuator Options for PC Mount

R7

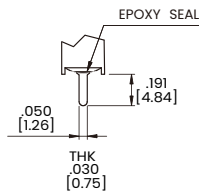


Termination Options

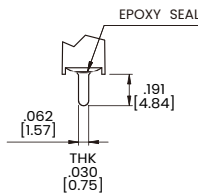
M1 Standard Solder Lug



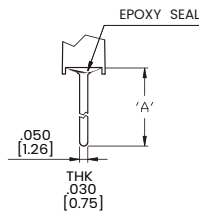
M2 PC Thru-Hole



M3 Quick Connect

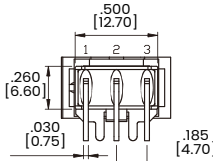
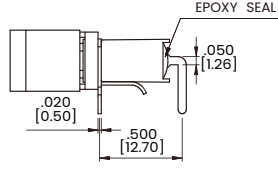
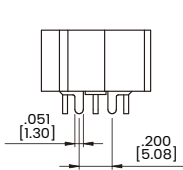


M5 Wire Wrap

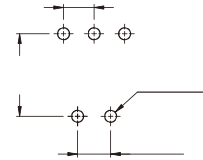


OPTION CODE	DIM.'A'
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M5-2	.924 [23.48]
M5-3	.386 [9.80]
M5-4	1.022 [25.97]

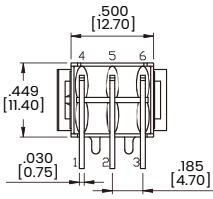
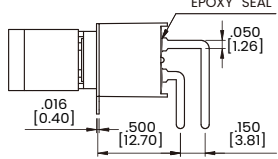
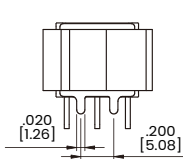
M6 Single Pole



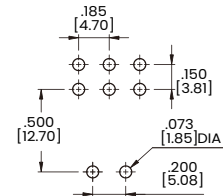
P.C.MOUNTING



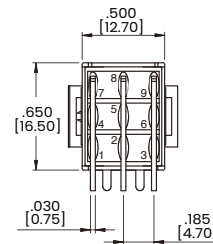
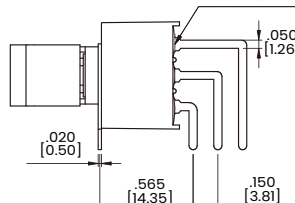
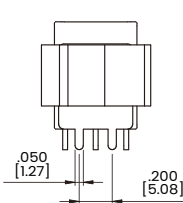
M6 Double Pole



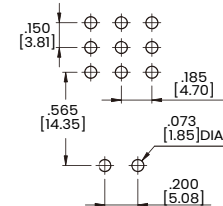
P.C.MOUNTING



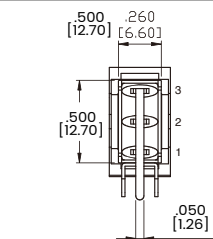
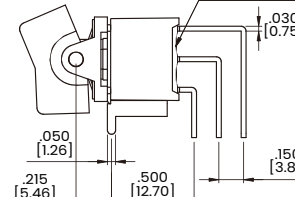
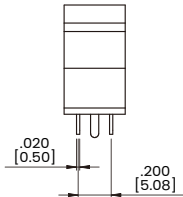
M6 Three Pole



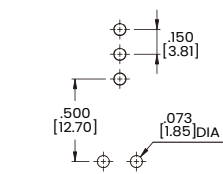
P.C.MOUNTING



M7 Single Pole



P.C.MOUNTING

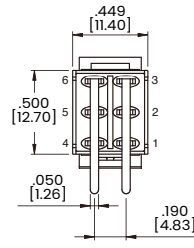
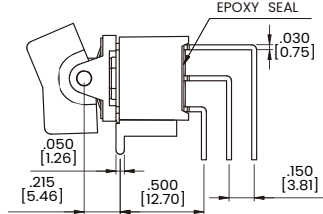
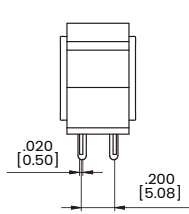


Dimensional Specs

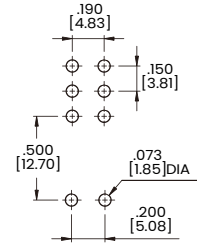
inches [millimeters]

Termination Options

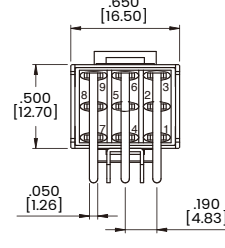
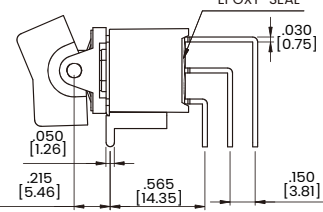
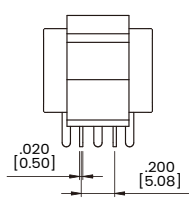
M7 Double Pole



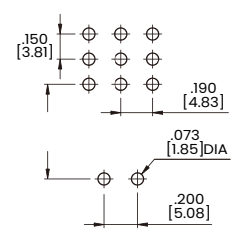
P.C.MOUNTING



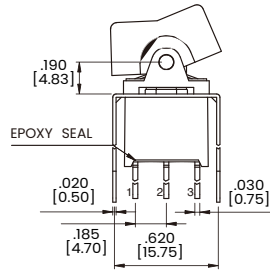
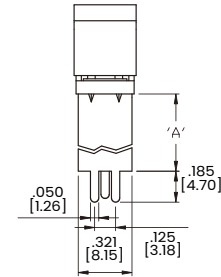
M7 Three Pole



P.C.MOUNTING

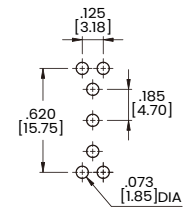


VS2-VS3 Single Pole

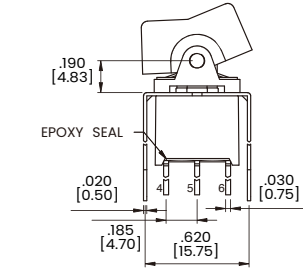
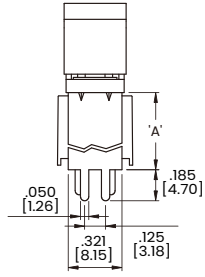


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

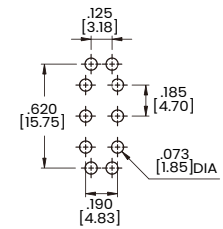


VS2-VS3 Double Pole

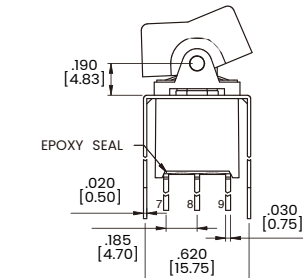
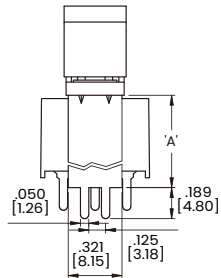


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

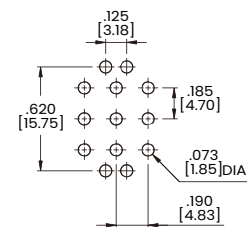


U2-VS3 Three Pole



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

P.C.MOUNTING

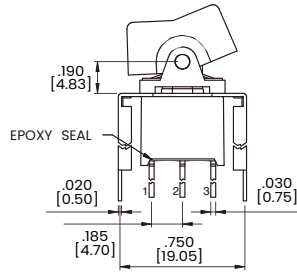
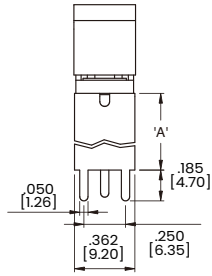


Dimensional Specs

inches [millimeters]

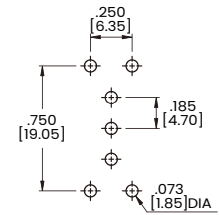
Termination Options

VS4-VS5 Single Pole

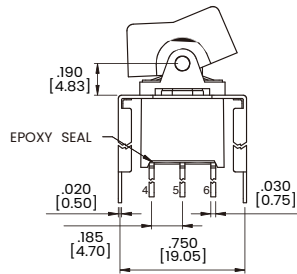
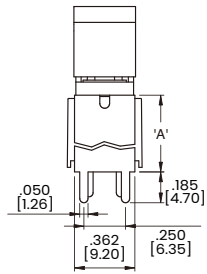


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

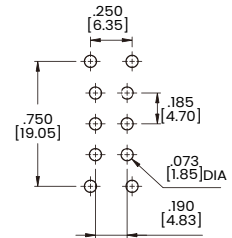


VS4-VS5 Double Pole

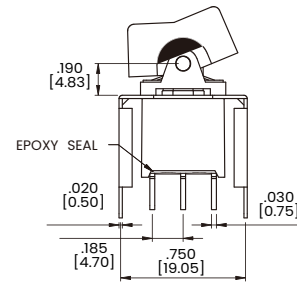
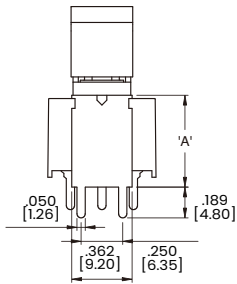


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

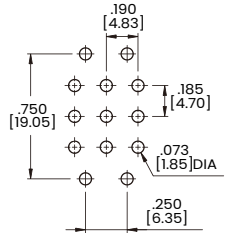


U4-VS5 Three Pole



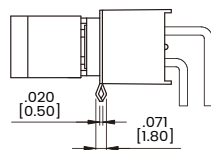
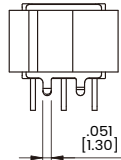
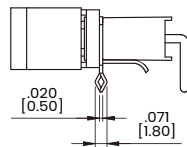
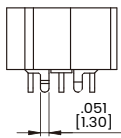
OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

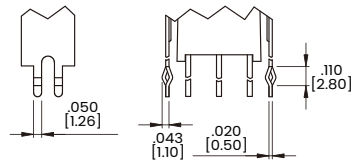


Snap-In Termination Options

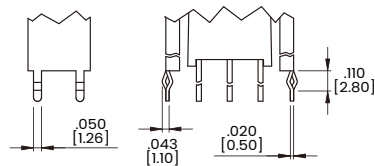
M61



VS21, VS31



VS41, VS51

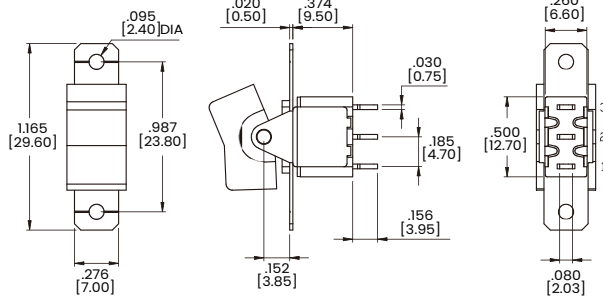


* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

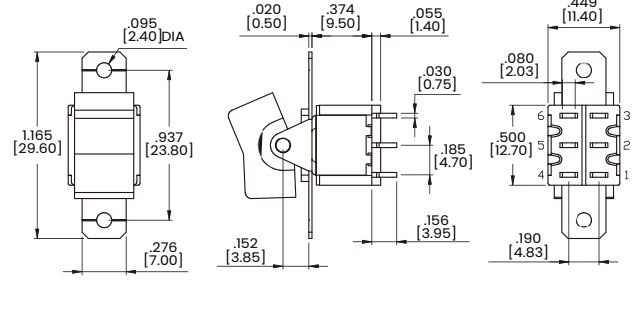
Dimensional Specs

inches [millimeters]

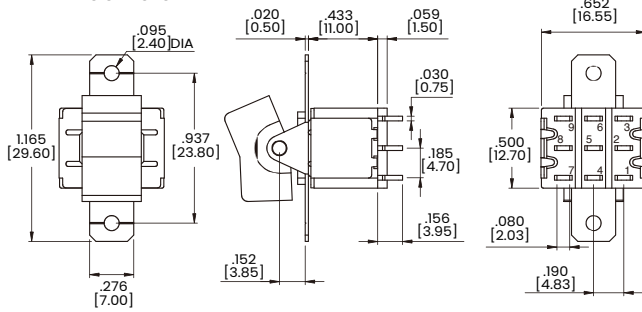
Single Pole



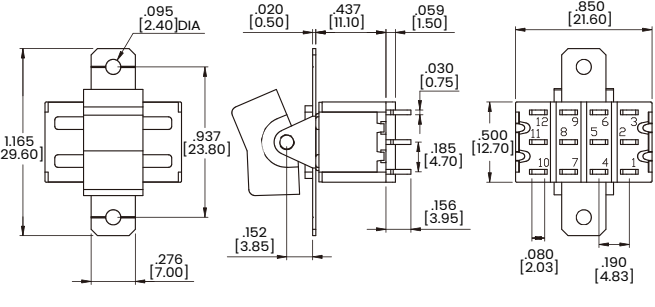
Double Pole



Three Pole

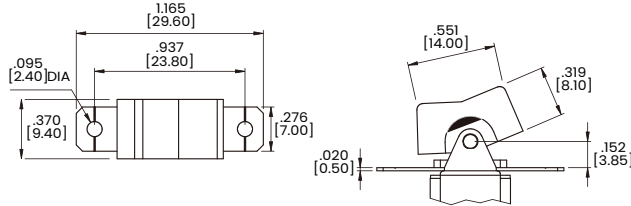


Four Pole

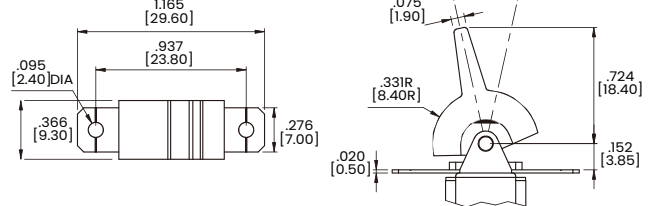


Actuator Options for Panel Rear Mount

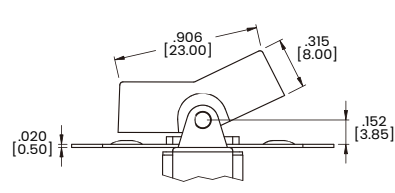
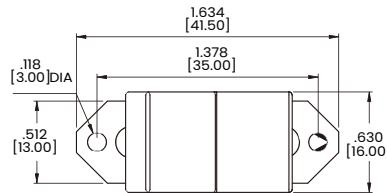
R1



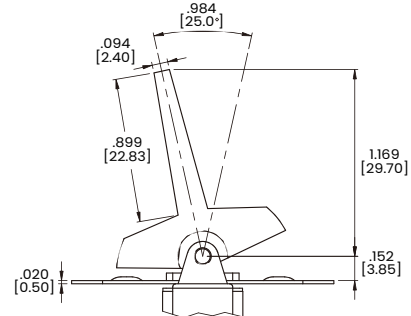
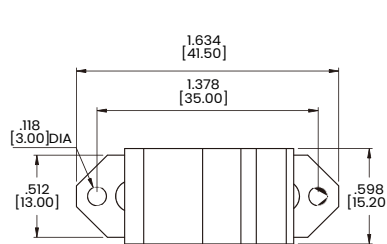
R2



R3



R4

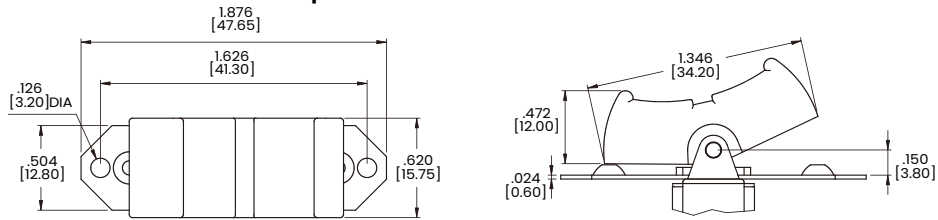


Dimensional Specs

inches [millimeters]

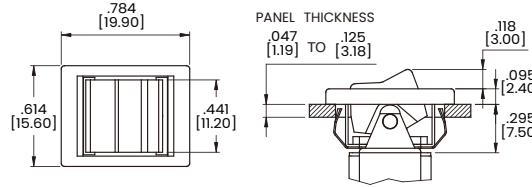
Actuator Options for Panel Rear Mount

R5

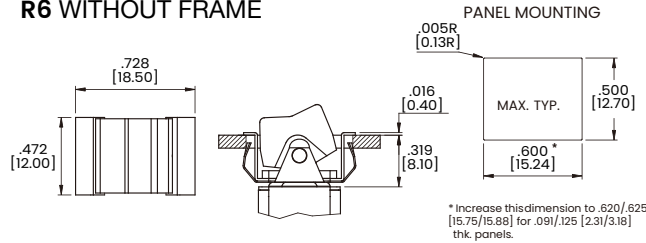


Actuator Options for Snap-In Mount

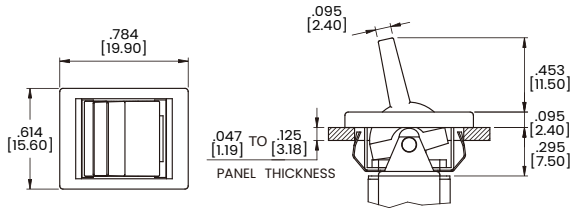
R6



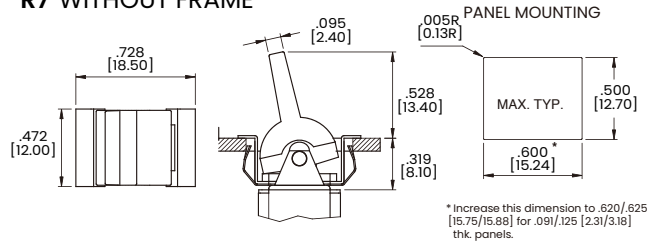
R6 WITHOUT FRAME



R7

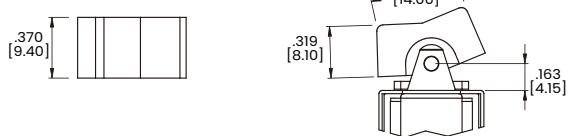


R7 WITHOUT FRAME

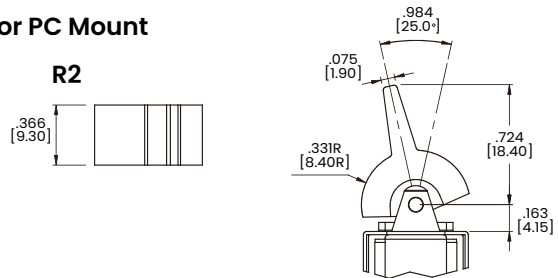


Actuator Options for PC Mount

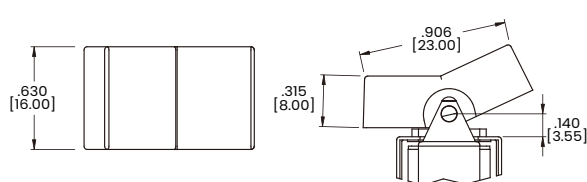
R1



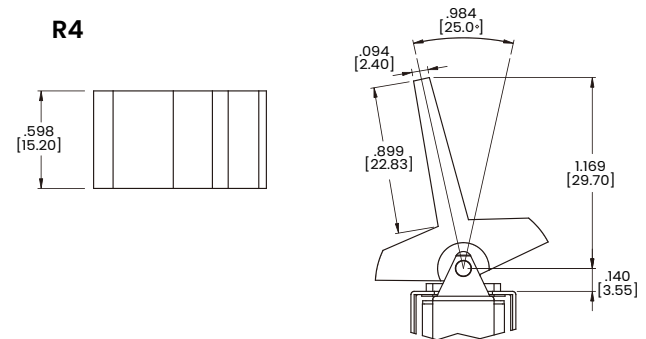
R2



R3



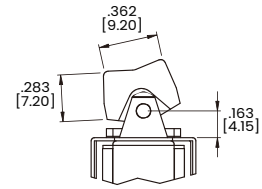
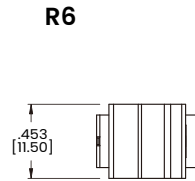
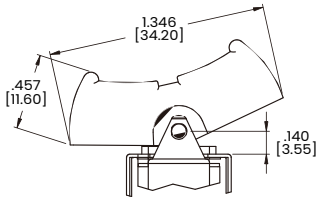
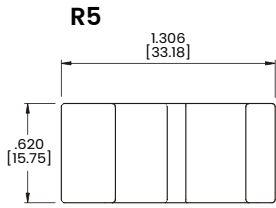
R4



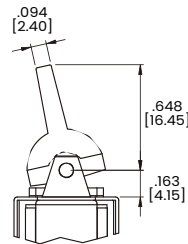
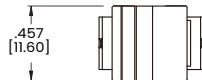
Dimensional Specs

inches [millimeters]

Actuator Options for PC Mount

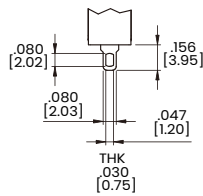


R7

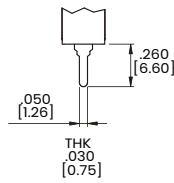


Termination Options

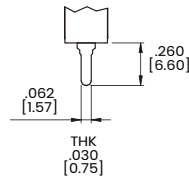
M1 Standard Solder Lug



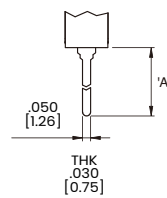
M2 PC Thru-Hole



M3 Quick Connect

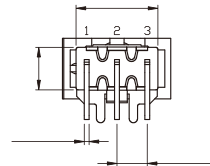
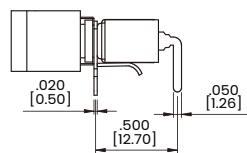
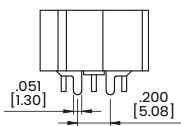


M5 Wire Wrap

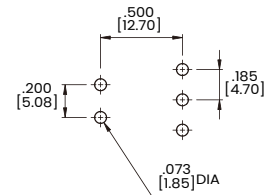


OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

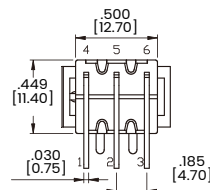
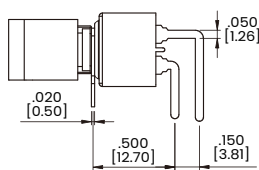
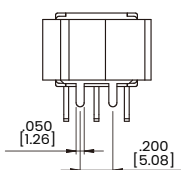
M6 Single Pole



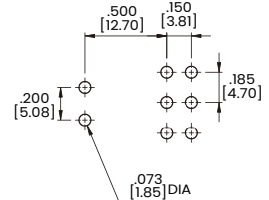
P.C.MOUNTING



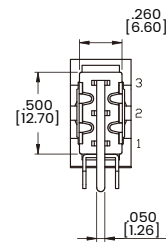
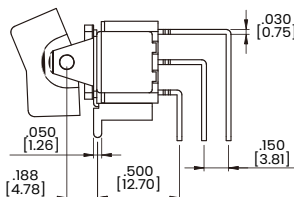
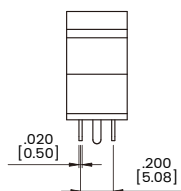
M6 Double Pole



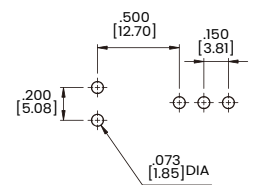
P.C.MOUNTING



M7 Single Pole



P.C.MOUNTING

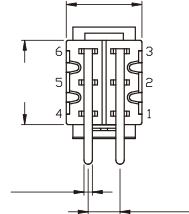
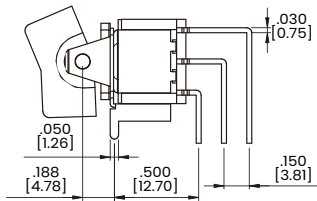
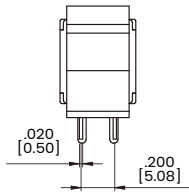


Dimensional Specs

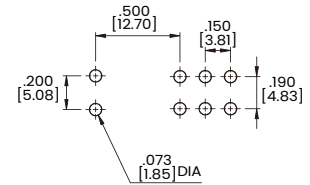
inches [millimeters]

Termination Options

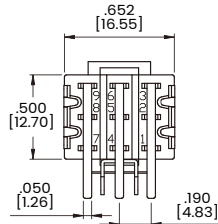
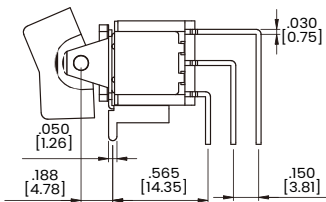
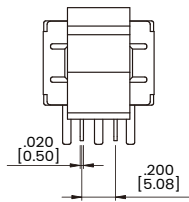
M7 Double Pole



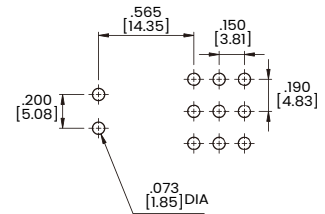
P.C.MOUNTING



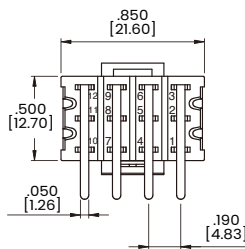
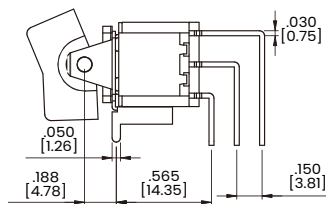
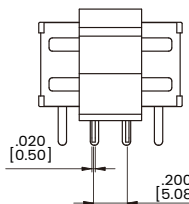
M7 Three Pole



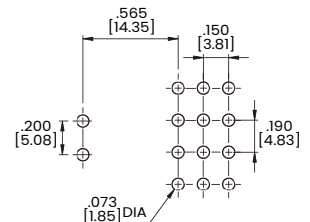
P.C.MOUNTING



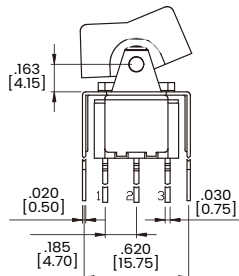
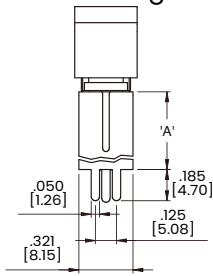
M7 Four Pole



P.C.MOUNTING

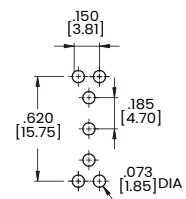


VS2-VS3 Single Pole

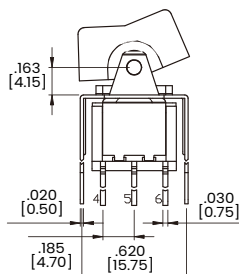
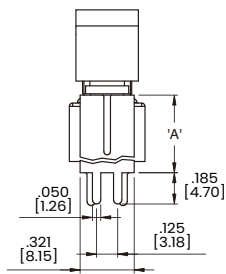


OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

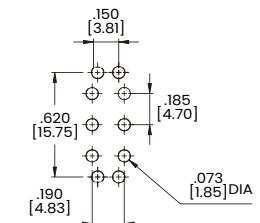


VS2-VS3 Double Pole



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

P.C.MOUNTING

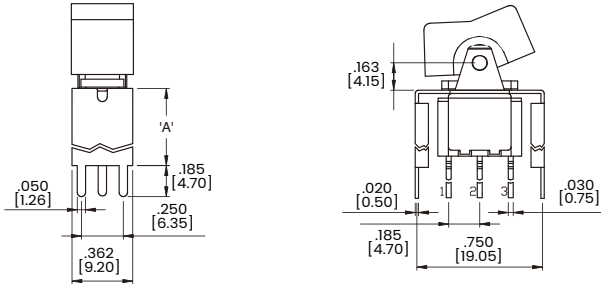


Dimensional Specs

inches [millimeters]

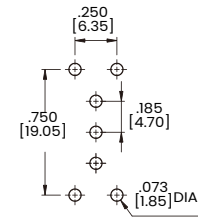
Termination Options

VS4-VS5 Single Pole

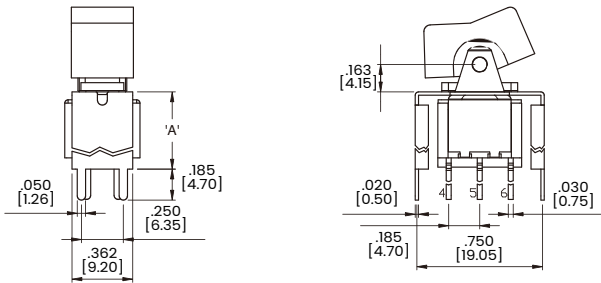


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

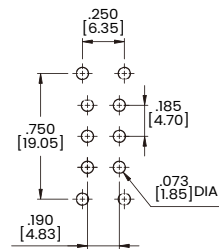


VS4-VS5 Double Pole

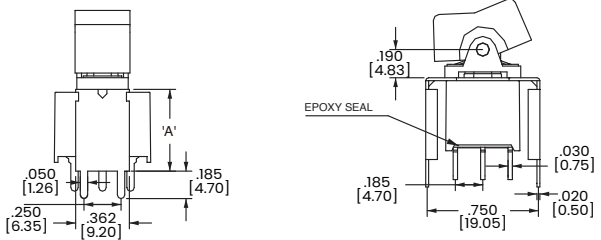


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

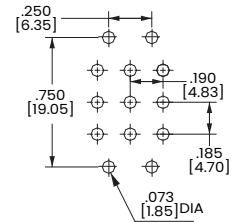


U4-VS5 Three Pole



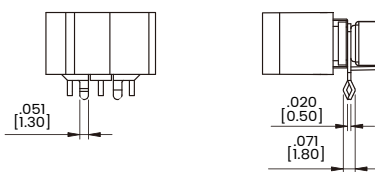
OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

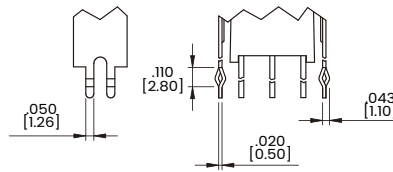


Snap-In Termination Options

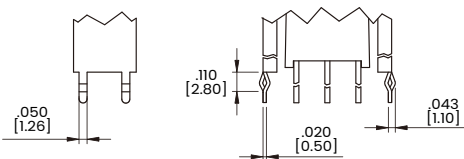
M61



VS21, VS31



VS41, VS51



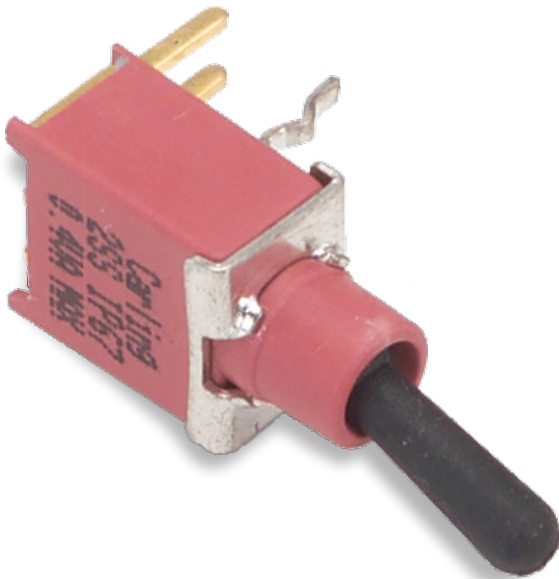
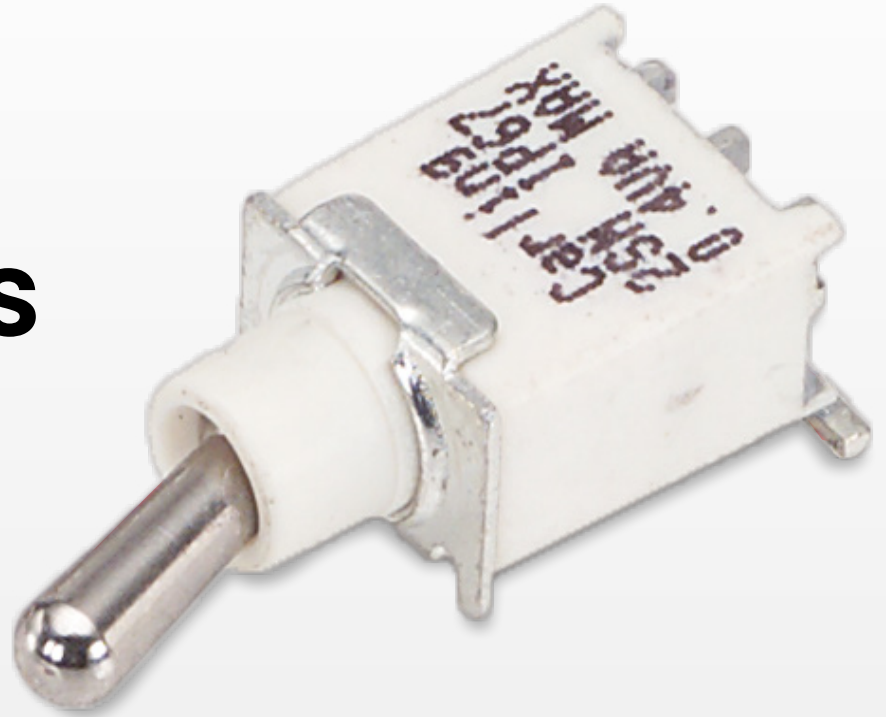
* PC Mounting for M61, VS21, VS31, VS41, VS51 refer to M6, VS2, VS3, VS4, VS5 respectively.

2S-Series

Miniature Toggles Switches

[PRODUCT WEBPAGE](#)

request sample, configure part



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.

1-2
Poles

.4-3
Amps

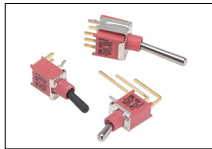
125, 250
VAC

28
VDC

Typical Applications

- Instrumentation
- Telecommunications
- Networking
- Medical Equipment
- Military

Tech Specs



2SS-Series
Sealed
Sub-Miniature
Toggle Switch



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

Ordering Scheme

Sample Part Number 2SS - MSP 1 - T1 - B4 - M6 G E

Selection 1 2 3 4 5 6 7 8

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**

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

4. ACTUATOR STYLE / LENGTH

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

5. BUSHING

B1 Threaded **B4** Unthreaded

6. TERMINATION

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

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 o28VDC, 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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

Ordering Schemes

Sample Part Number 2S1 - MSP 1 - T1 - B4 - M6 Q E

Selection 1 2 3 4 5 6 7 8

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

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

5. BUSHING

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

[Configure Complete Part Number >](#) [Browse Standard Parts >](#)

6. TERMINATION

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

7. CONTACTS / TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
G silver ²	gold over silver	3A 125VAC or 28VDC, 1.5A 250VAC	UL, CE
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,	UL, CE
Q silver ²	1.5A 250VAC silver ²	3A 125VAC or 28VDC	UL, CE
	1.5A 250VAC gold ⁴	0.4VA max 20V max (AC/DC)	N/A
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.

- All Switches come with standard nut, washer and locking ring shipped bulk. B5 & B7 ushing styles use small locking ring. See page 76-77
- 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
- Not available with M1 terminal
- Lengths shown are with B1 - B4 bushings.
For B5 & B6 subtract .108", for B7 & B8 subtract .043"

Sample Part Number 2SM - MSP 1 - T1 - M6 G E T/R

Selection 1 2 3 4 5 6 7 8

1. SERIES

2M1 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

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

5. TERMINATION

K6 Surface Mount, .433" [11.00 mm] **M7** Surface Mount, 90° vertical
L6 Surface Mount, .354" [9.00 mm] **S6** Surface Mount, 90°, .353" [8.96 mm]
M6 Surface Mount, 90° flat, .2X86" [7.26 mm] See 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	0.4VA max 20V max (AC/DC)	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:

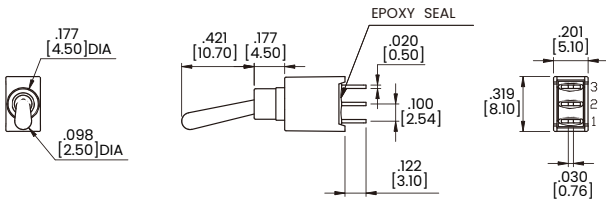
- Tin option available with PC type terminations only.
- Bushing is unthreaded .177" [4.50 mm] height
- Movable contact & terminal platings: silver over copper alloy
- Movable contact & terminal platings: gold over nickel over copper alloy
- Terminal platings: tin over nickel over copper alloy

[Configure Complete Part Number >](#) [Browse Standard Parts >](#)

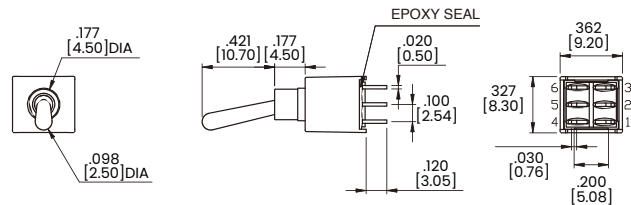
Dimensional Specs

inches [millimeters]

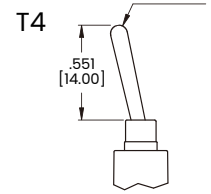
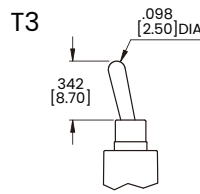
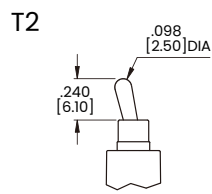
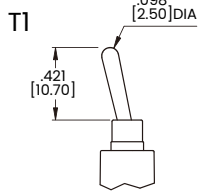
Single Pole



Double Pole

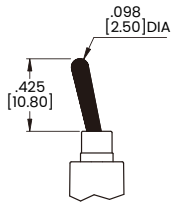


Actuator Options

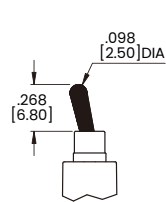


* B4 bushing shown. Subtract 2.55mm from toggle length for B1 bushing.

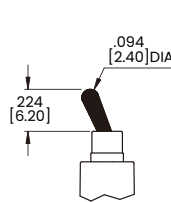
P1 Plastic Toggle



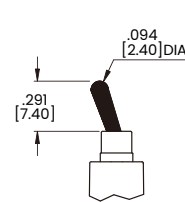
P2 Plastic Toggle



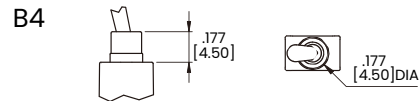
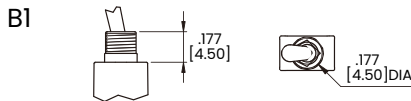
P3 Plastic Toggle



P4 Plastic Toggle



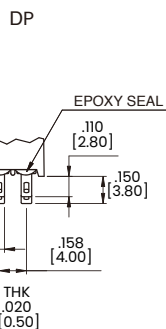
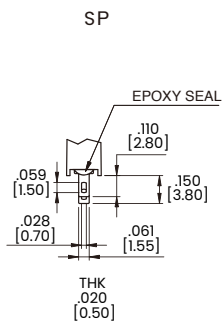
Bushing Options



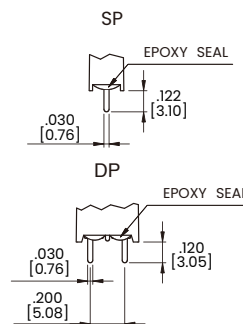
* Subtract 2.55mm from toggle length for B1 bushing.

Termination Options

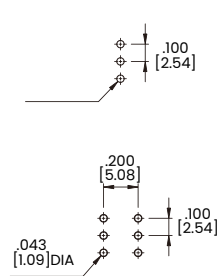
M1 STD. Solder Lug



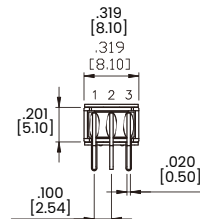
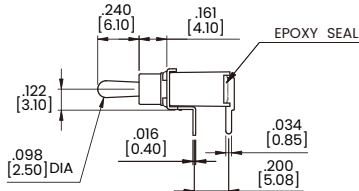
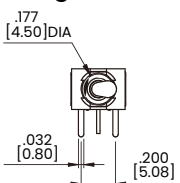
M2 PC Thru-Hole



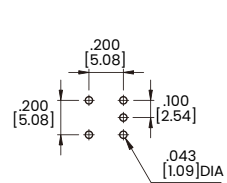
P.C.MOUNTING



M6 Single Pole



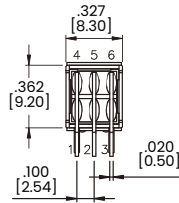
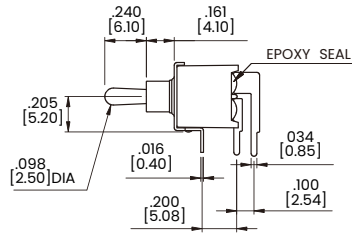
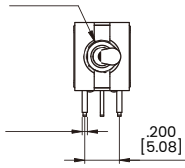
P.C.MOUNTING



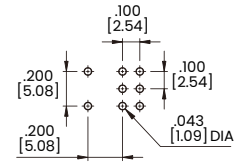
Dimensional Specs

inches [millimeters]

M6 Double Pole

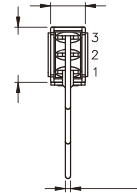
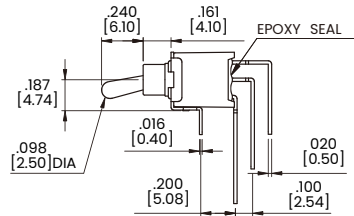
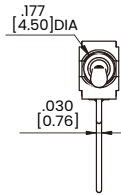


P.C.MOUNTING

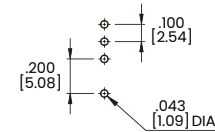


Termination Options

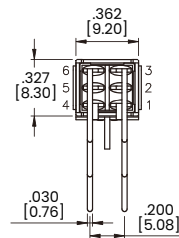
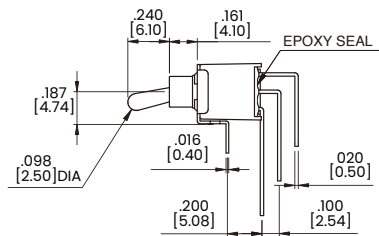
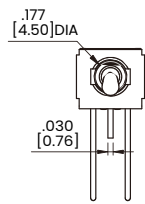
M7 Single Pole



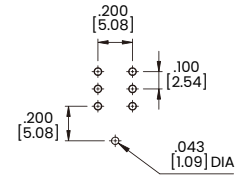
P.C.MOUNTING



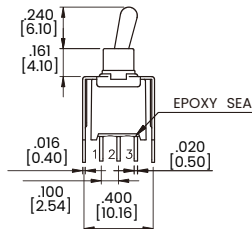
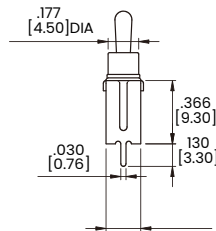
M7 Double Pole



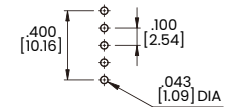
P.C.MOUNTING



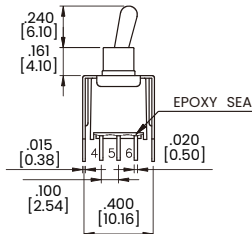
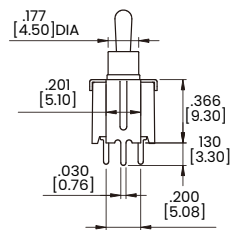
VS2 Single Pole



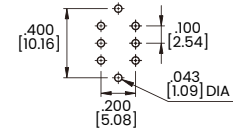
P.C.MOUNTING



VS2 Double Pole

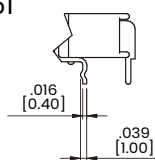


P.C.MOUNTING

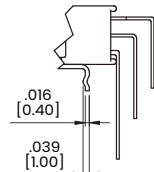


Snap-In Termination Options

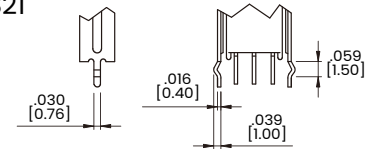
M61



M71



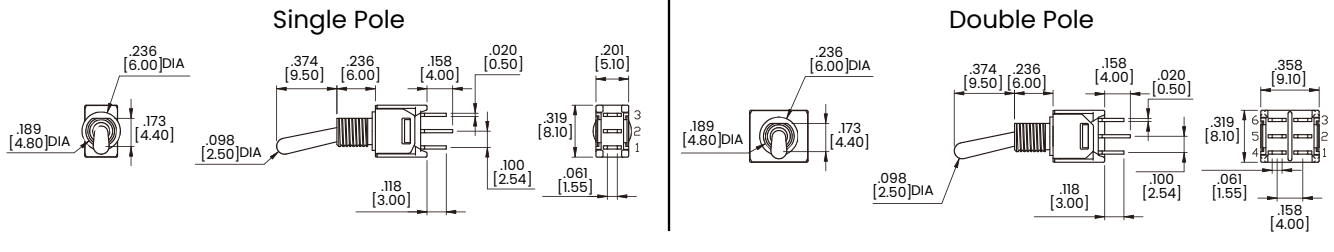
VS21



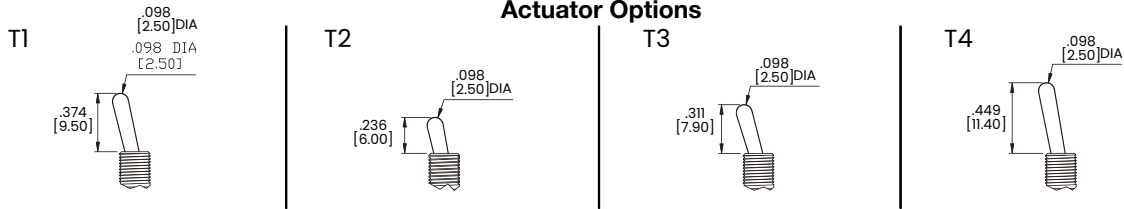
* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

Dimensional Specs

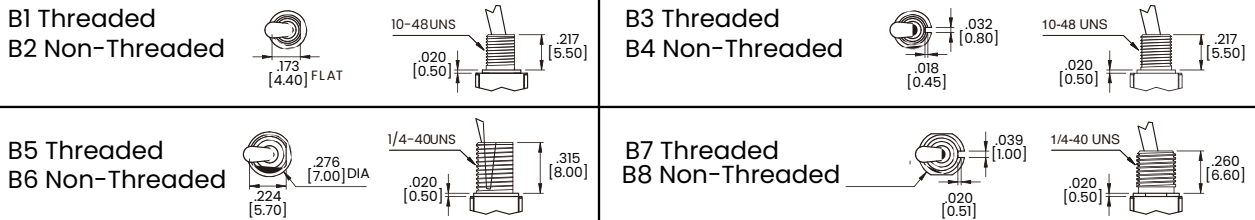
inches [millimeters]



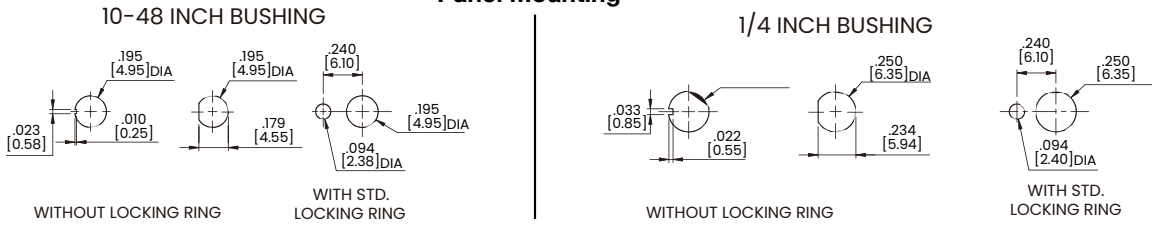
Actuator Options



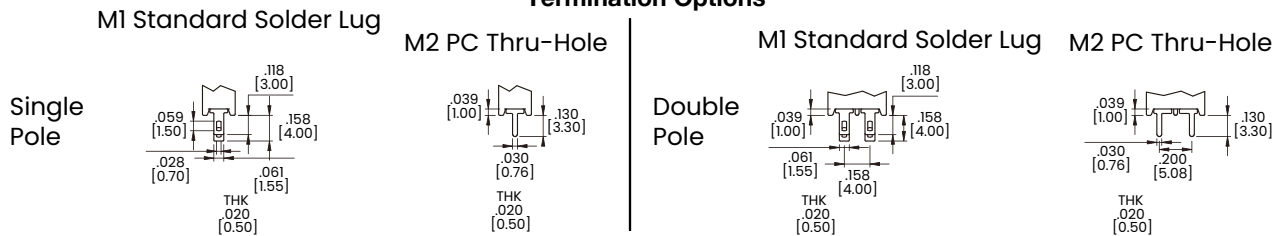
Bushing Options



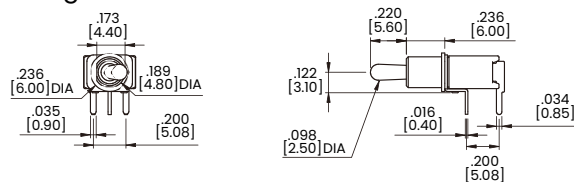
Panel Mounting



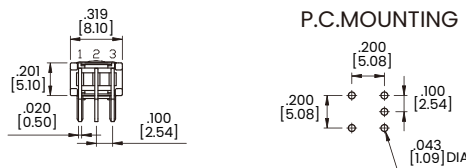
Termination Options



M6 Single Pole



P.C. MOUNTING

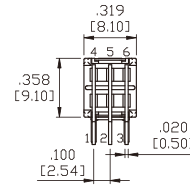
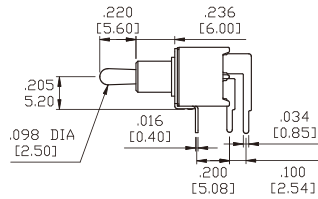
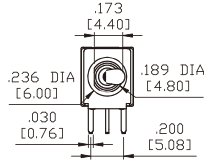


Dimensional Specs

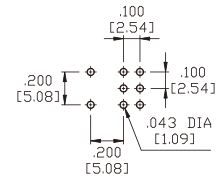
inches [millimeters]

Termination Options

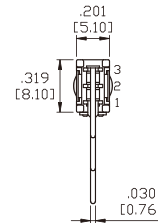
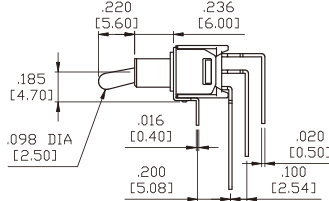
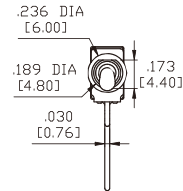
M6 Double Pole



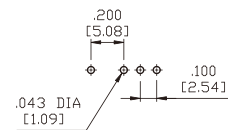
P.C.MOUNTING



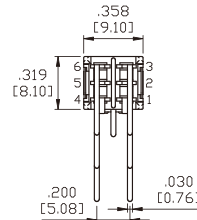
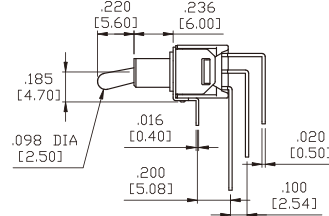
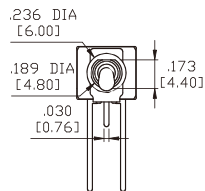
M7 Single Pole



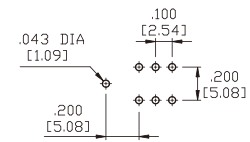
P.C.MOUNTING



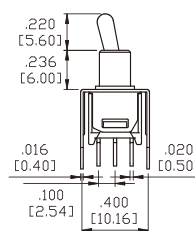
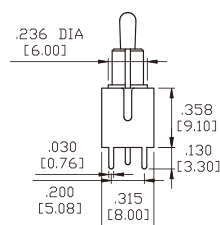
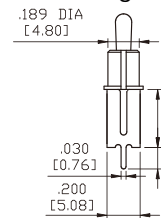
M7 Double Pole



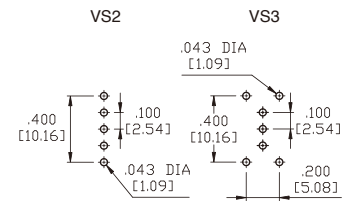
P.C.MOUNTING



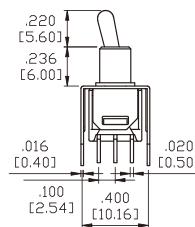
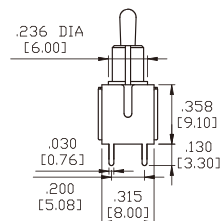
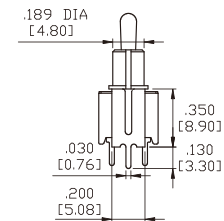
VS2-VS3 Single Pole



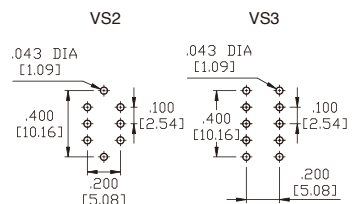
P.C.MOUNTING



VS2-VS3 Double Pole

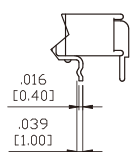


P.C.MOUNTING

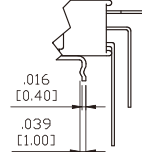


Snap-In Termination Options

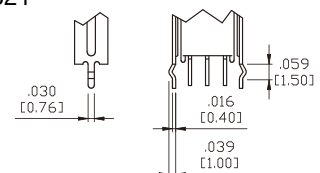
M61



M71



VS21

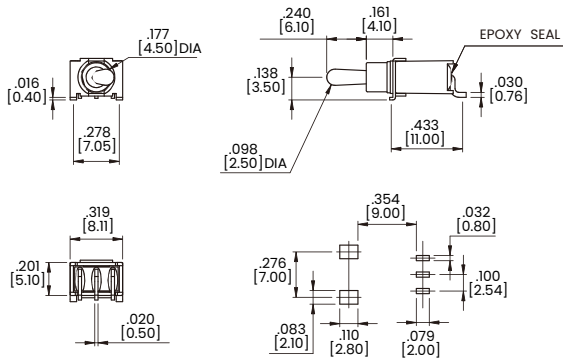


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

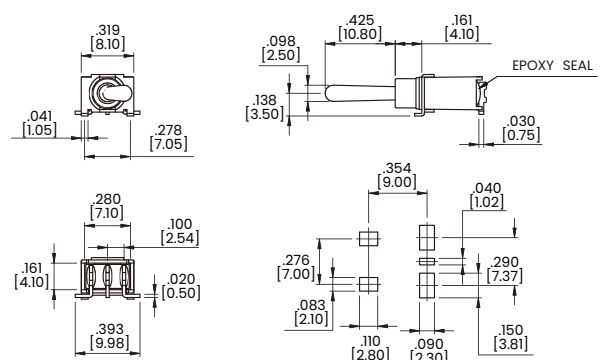
Dimensional Specs

inches [millimeters]

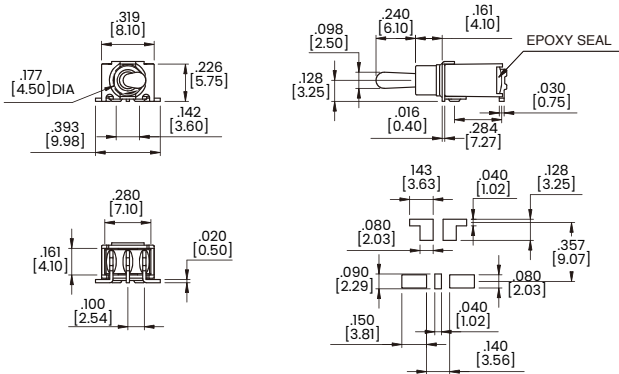
K6 Single Pole



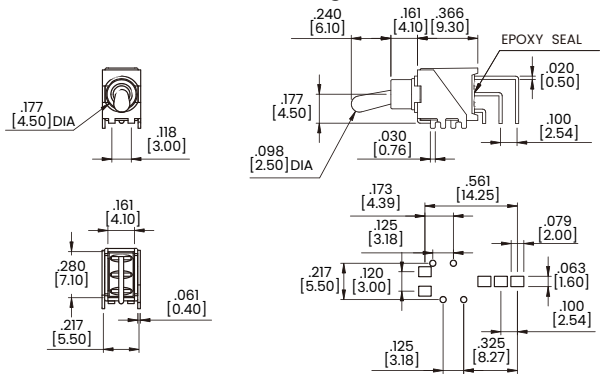
L6 Single Pole



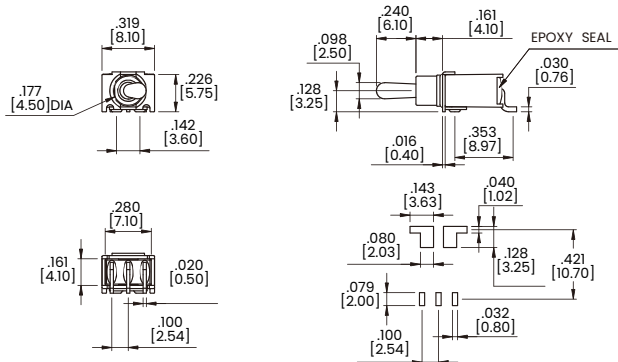
M6 Single Pole



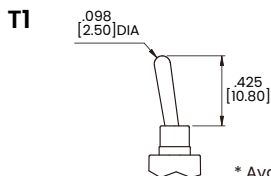
M7 Single Pole



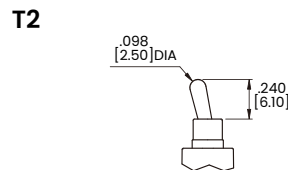
S6 Single Pole



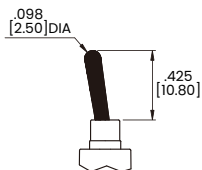
Actuator Options



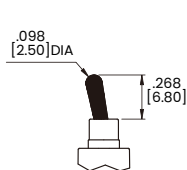
* Available with L6, S6, K6, M7 terminals only.



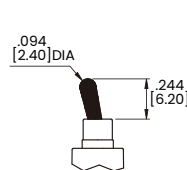
P1 Plastic Toggle



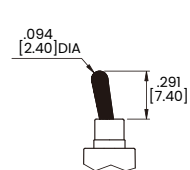
P2 Plastic Toggle



P3 Plastic Toggle



P4 Plastic Toggle

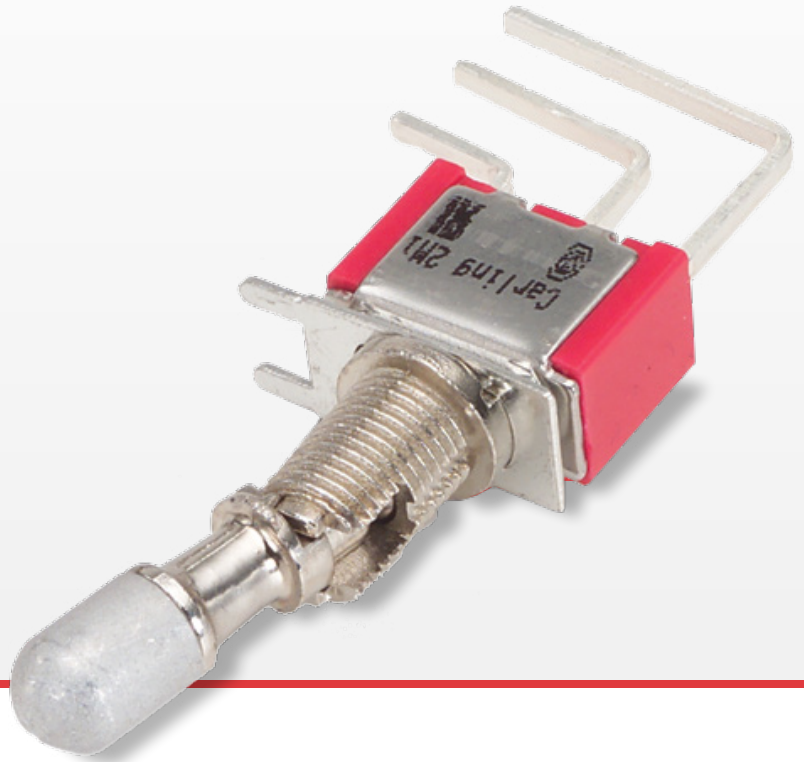


2M-Series

Miniature Toggles Switches

PRODUCT WEBPAGE

request sample, configure part



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 2MIH-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.

1-2	.4-5	125, 250	28
Poles	Amps	VAC	VDC

Typical Applications

- Instrumentation
- Telecommunications
- Networking
- Medical Equipment
- Military

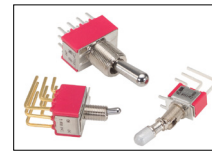
Tech Specs



2MIH-Series
Premium Sealed
Miniature
Toggle Switch



2MS-Series
Sealed
Miniature
Toggle



2MI-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	2MIH-Series: IP67 2MS-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210
Actuator Travel	25°

Material

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

Ordering Scheme

Sample Part Number **2MIH - DP1 TJ - BK - M2 R E**

Selection 1 2 3 4 5 6 7

1. SERIES

2MIH Premium Sealed Miniature Toggle Switch

2. POLES / 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

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) 2MI-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.

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

Ordering Scheme Accessories

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-SPI-T1-BI-MIQE-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

Sample Part Number 2M1 - T1 2
Selection 1 2 3

1. SERIES

2M1 Fits 2MIH, 2MS or 2M1

2. TOGGLE CAP SIZE

T1 10.6 mm **T2** 7.6 mm

3. CAP COLOR

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

Optional Dress and Knurled Nuts

Sample Part Number 2M1 - HDW3
Selection 1 2

1. SERIES

2M1 Fits 2MIH, 2MS or 2M1

2. NUT

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

Optional Rubber Seals

Sample Part Number 2M1 - E1A
Selection 1 2

1. SERIES

2M1 Fits 2MIH, 2MS or 2M1

2. RUBBER BOOT SEAL

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

Sample Part Number 3MNH - WCP-0872
Selection 1 2

1. SERIES

3MNH Fits 3MNH or 2MIH

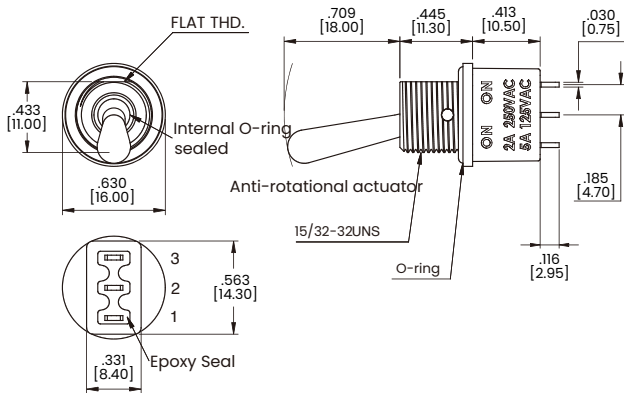
2. RUBBER O-RING

WCP-0872 For 15/32 bushing option

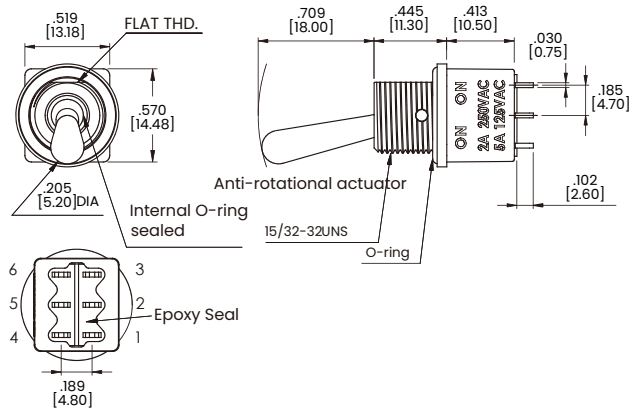
Dimensional Specs

inches [millimeters]

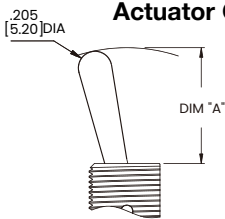
Single Pole



Double Pole

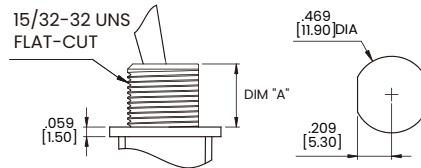


Actuator Options



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

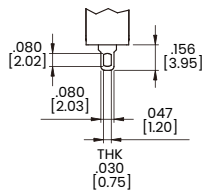
Bushing Options & Mounting



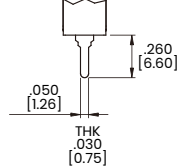
OPTION CODE	DIM. "A"
BK	.386 [9.80]

Termination Options

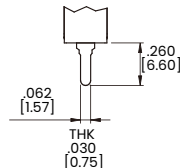
M1 Standard Solder Lug



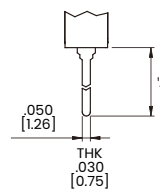
M2 PC Thru-Hole



M3 Quick Connect



M5 Wire Wrap

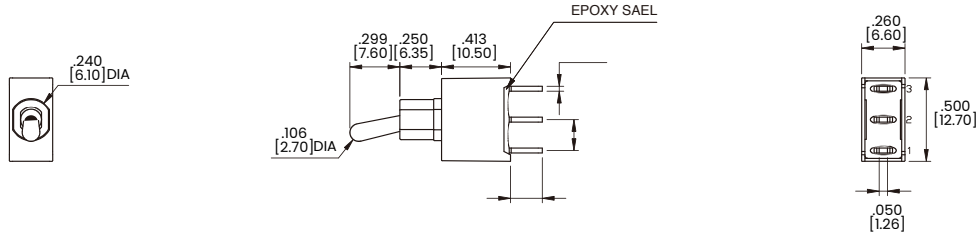


OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

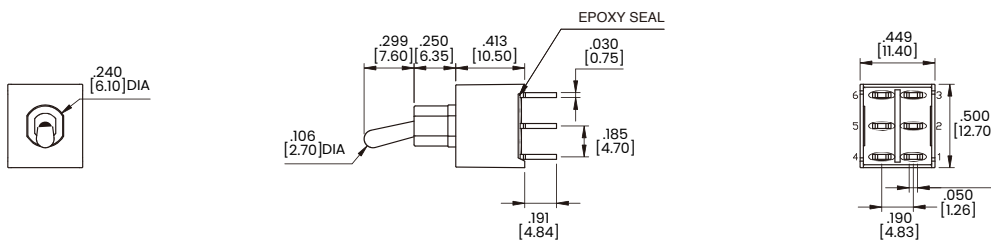
Dimensional Specs

inches [millimeters]

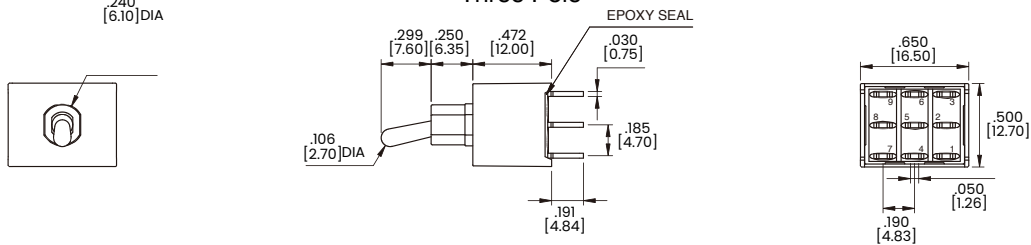
Single Pole



Double Pole

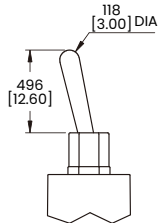


Three Pole

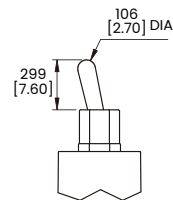


Actuator Options

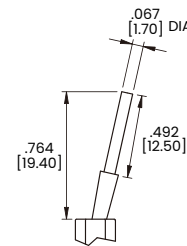
T1



T2

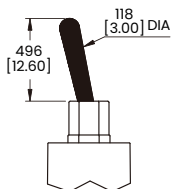


T9 with Plastic Cap

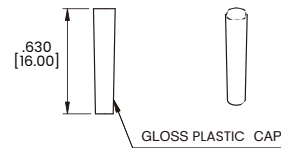
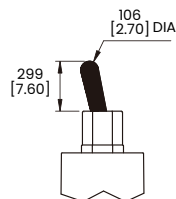


NO.	COLOR
1	White
2	Black(std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

P1 Plastic Toggle



P2 Plastic Toggle



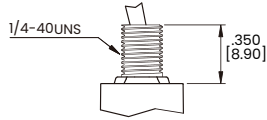
* Shown with B4 bushing. Subtract 0.75" (1.90mm) from actuator height for B1 bushing.

Dimensional Specs

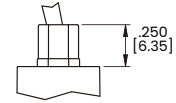
inches [millimeters]

Bushing Options

B1

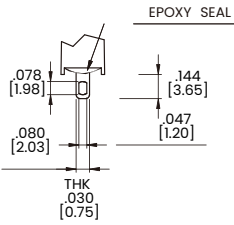


B4

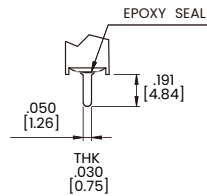


Termination Options

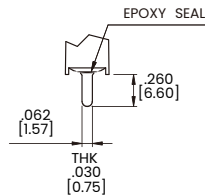
M1 Standard Solder Lug



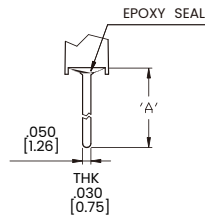
M2 PC Thru-Hole



M3 Quick Connect

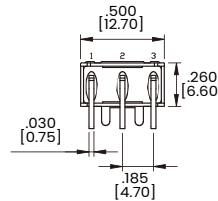
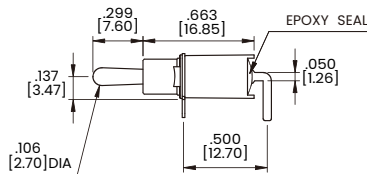
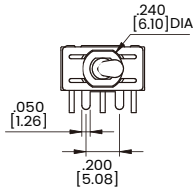


M5 Wire Wrap

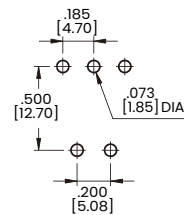


OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

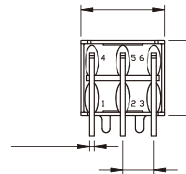
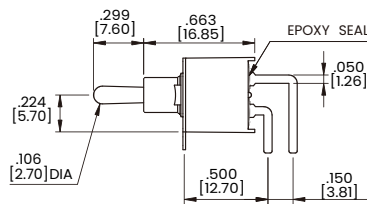
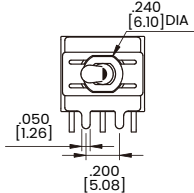
M6 Single Pole



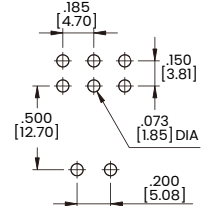
P.C.MOUNTING



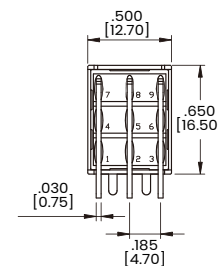
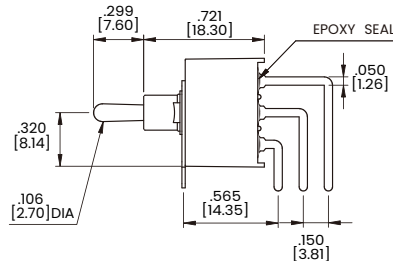
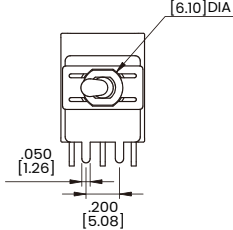
M6 Double Pole



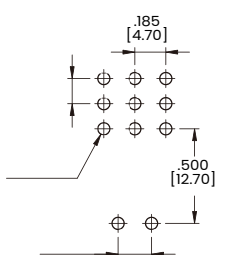
P.C.MOUNTING



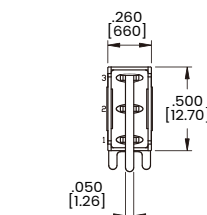
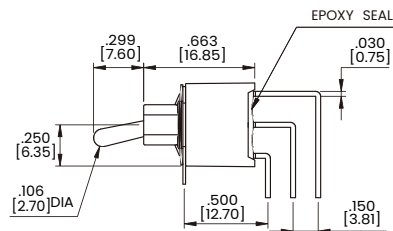
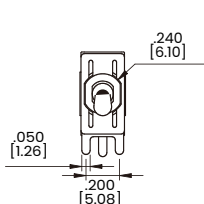
M6 Three Pole



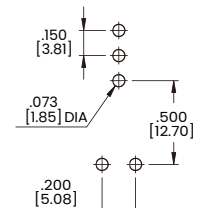
P.C.MOUNTING



M7 Single Pole



P.C.MOUNTING

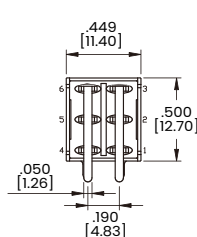
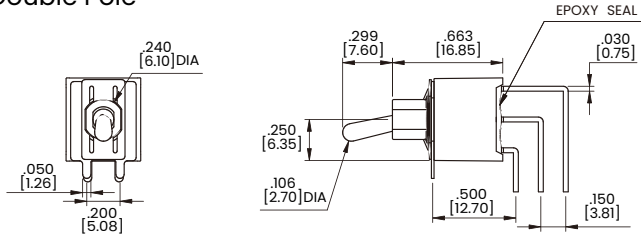


Dimensional Specs

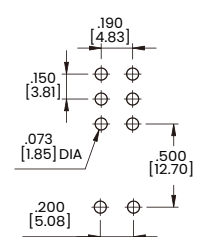
inches [millimeters]

Termination Options

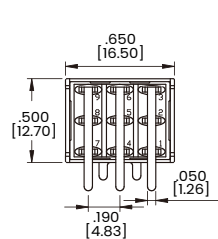
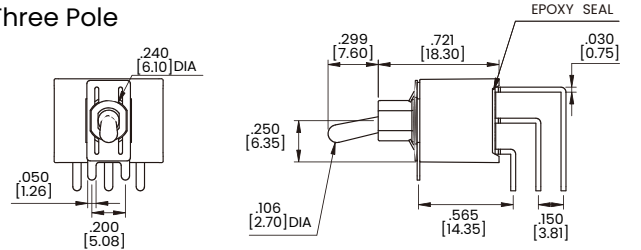
M7 Double Pole



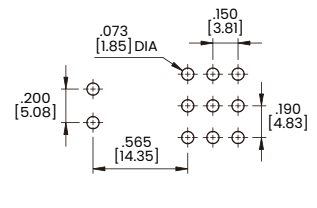
P.C.MOUNTING



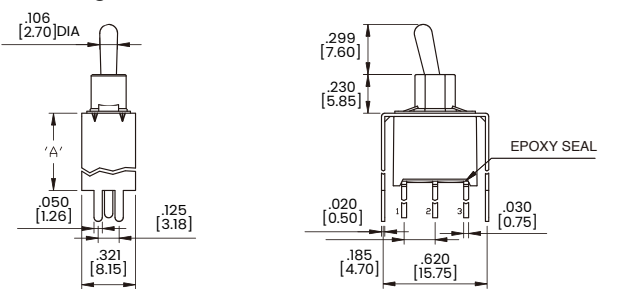
M7 Three Pole



P.C.MOUNTING

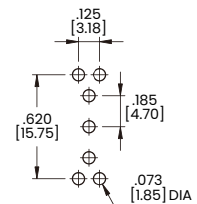


VS2-VS3 Single Pole

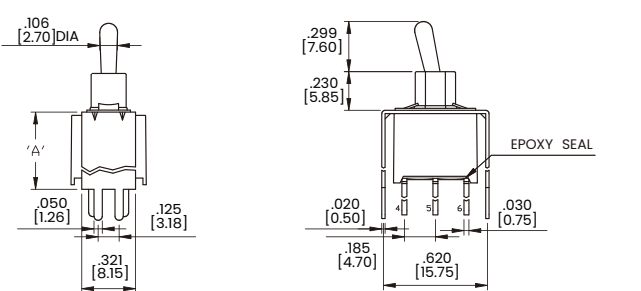


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

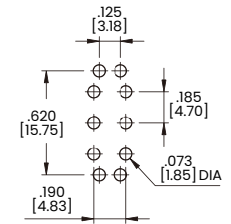


VS2-VS3 Double Pole

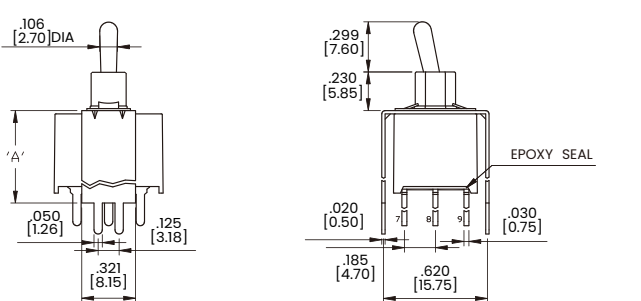


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

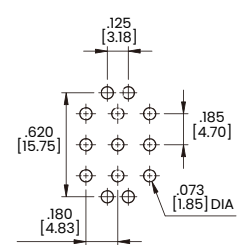


U2-VS3 Three Pole



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

P.C.MOUNTING

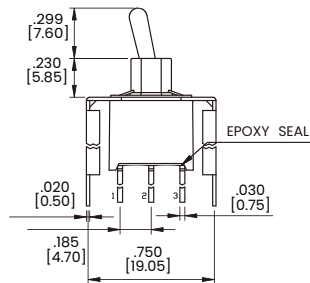
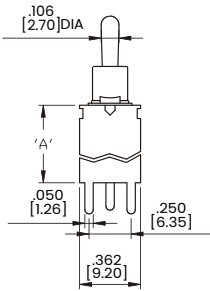


Dimensional Specs

inches [millimeters]

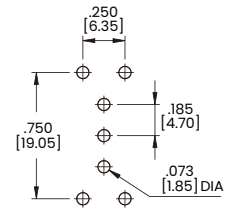
Termination Options

VS4-VS5 Single Pole

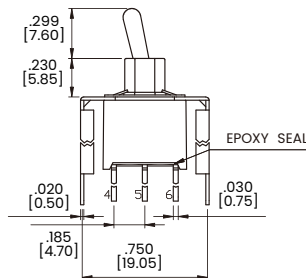
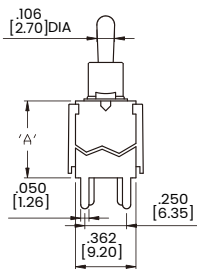


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

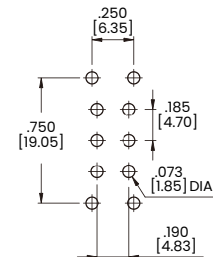


VS4-VS5 Double Pole

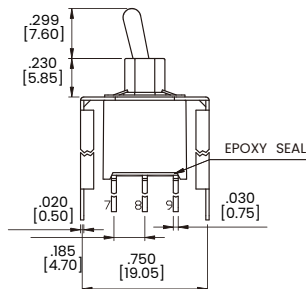
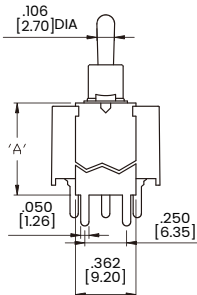


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

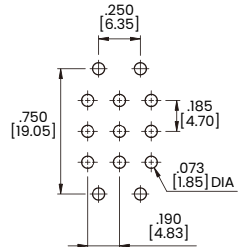


U4-VS5 Three Pole



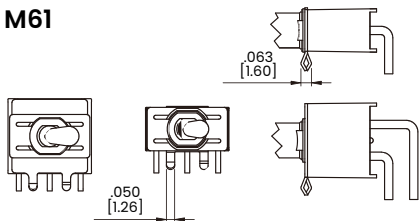
OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING

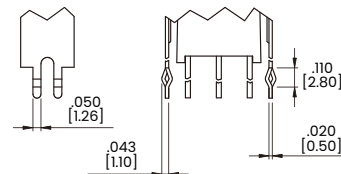


Snap-In Termination Options

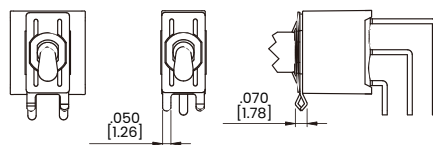
M61



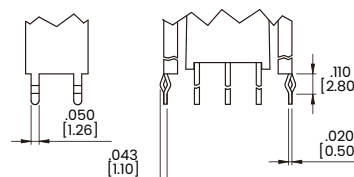
VS21, VS31



M71



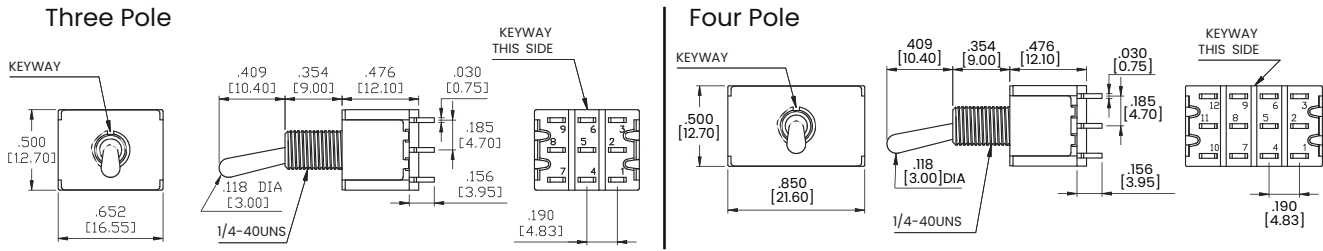
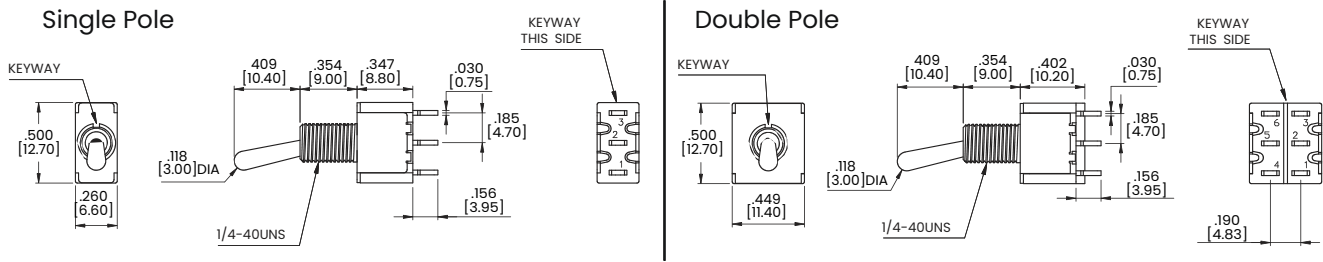
VS41, VS51



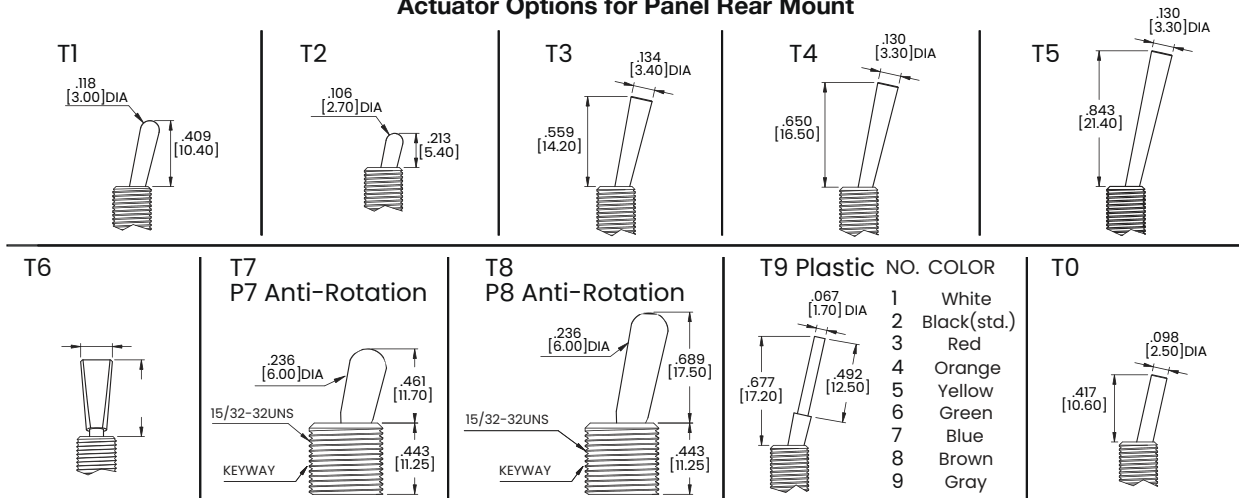
* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

Dimensional Specs

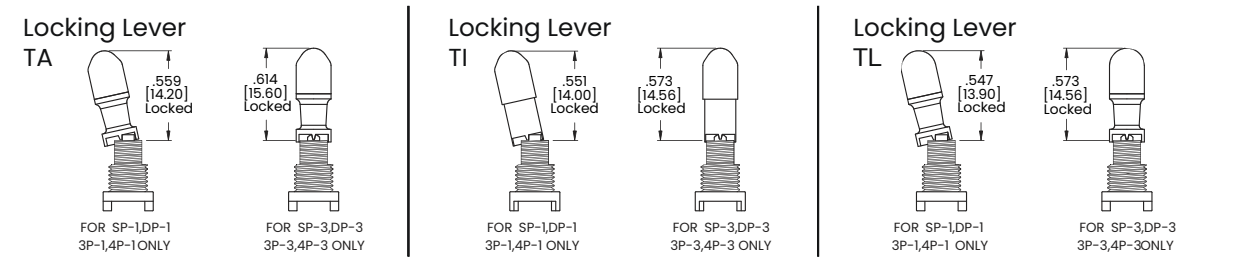
inches [millimeters]



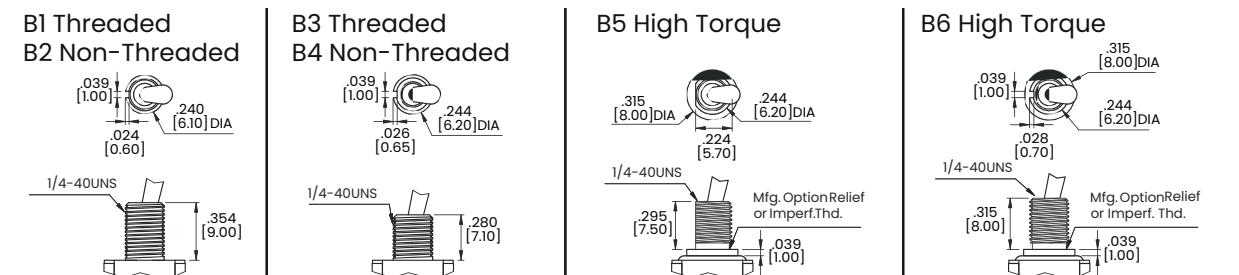
Actuator Options for Panel Rear Mount



* 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, T7, P8 does not require a bushing code.



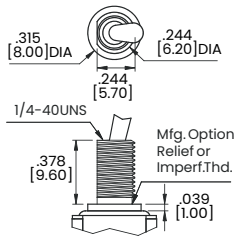
Bushing Options



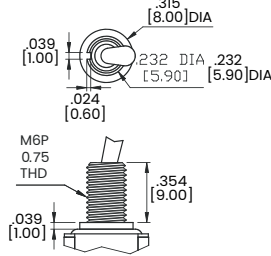
Dimensional Specs

inches [millimeters]

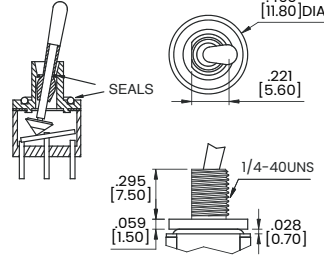
B7 Long



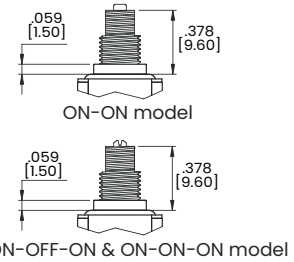
B8 Metric



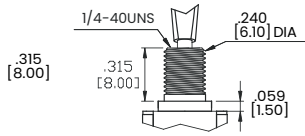
B9 Splash-Proof



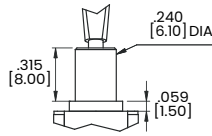
BL Locking Lever



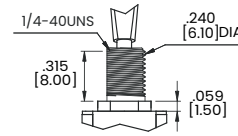
BA Threaded for T6



BB Non-Threaded for T6

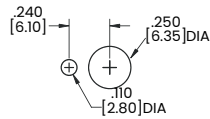
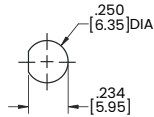
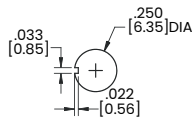


BB High Torque for T6

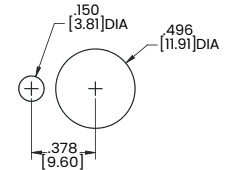
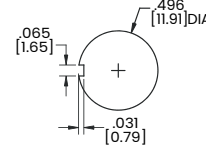


Panel Mounting

1/4 INCH BUSHING

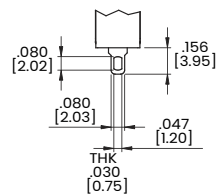


15/32 INCH BUSHING

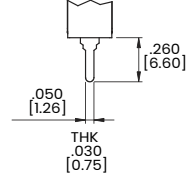


Termination Options

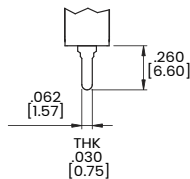
M1 Standard Solder Lug



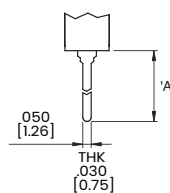
M2 PC Thru-Hole



M3 Quick Connect

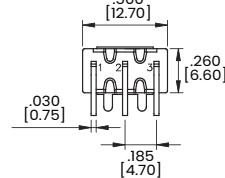
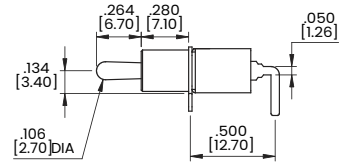
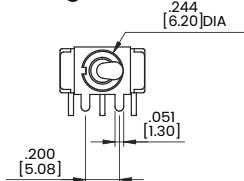


M5 Wire Wrap

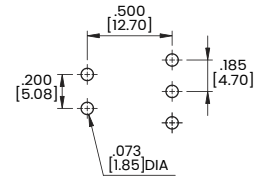


OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

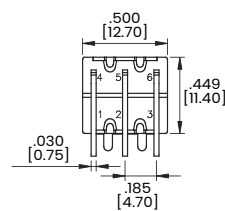
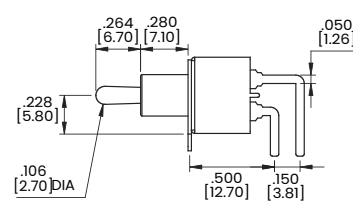
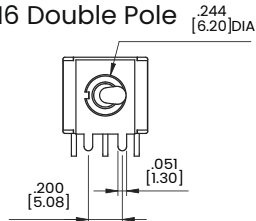
M6 Single Pole



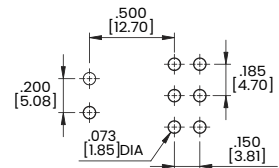
P.C.MOUNTING



M6 Double Pole



P.C.MOUNTING

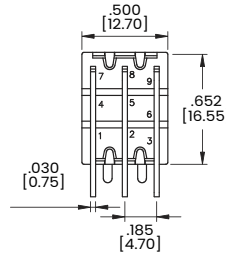
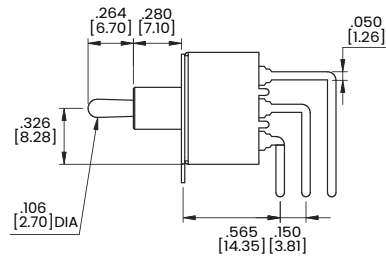
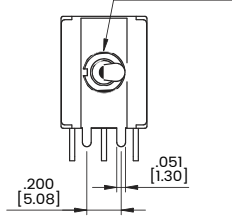


Dimensional Specs

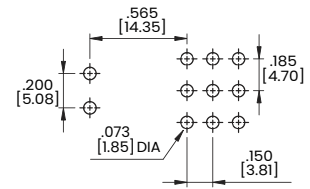
inches [millimeters]

Termination Options

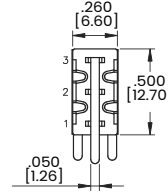
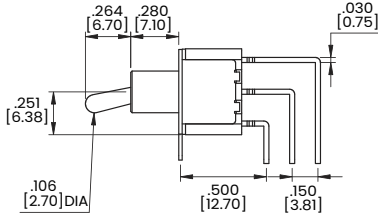
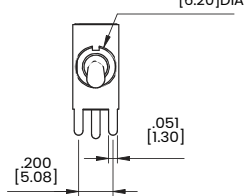
M6 Three Pole



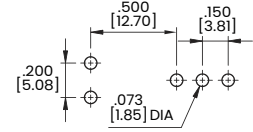
P.C.MOUNTING



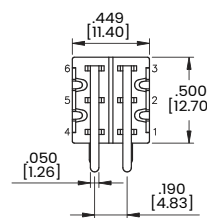
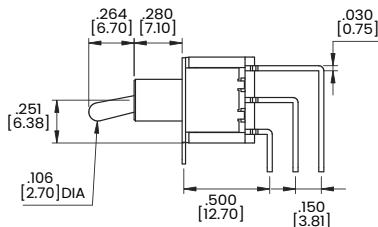
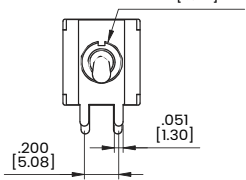
M7 Single Pole



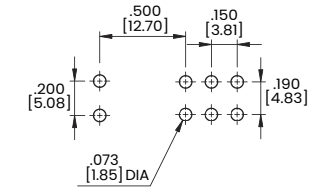
P.C.MOUNTING



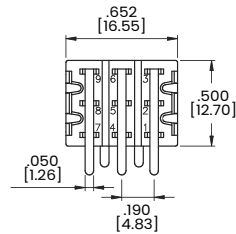
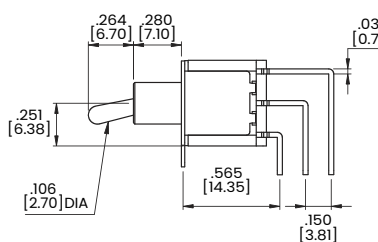
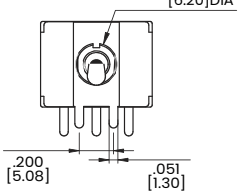
M7 Double Pole



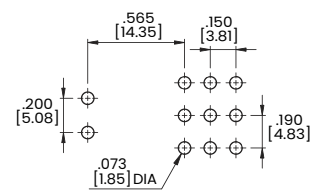
P.C.MOUNTING



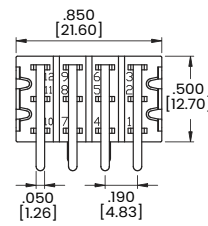
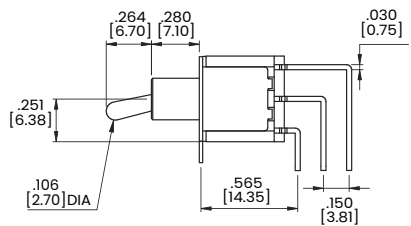
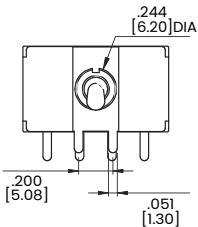
M7 Three Pole



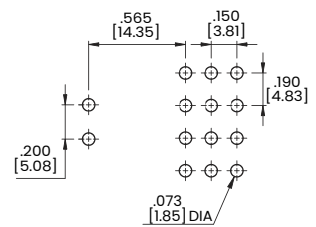
P.C.MOUNTING



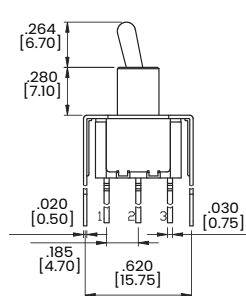
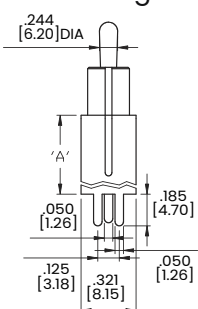
M7 Four Pole



P.C.MOUNTING

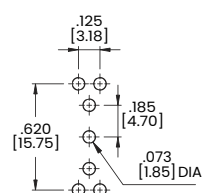


VS2-VS3 Single Pole



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

P.C.MOUNTING

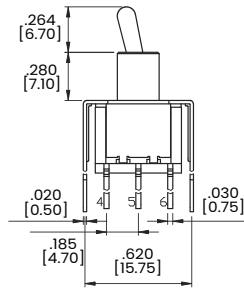
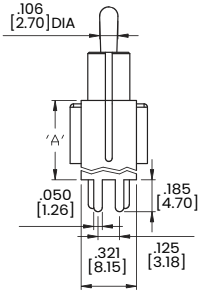


Dimensional Specs

inches [millimeters]

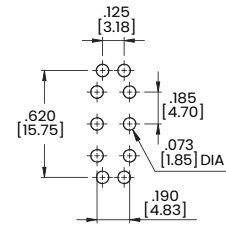
Termination Options

VS2-VS3 Double Pole

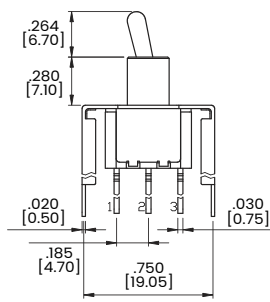
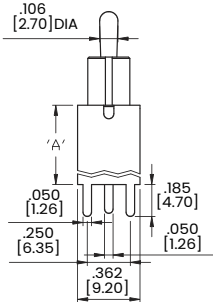


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

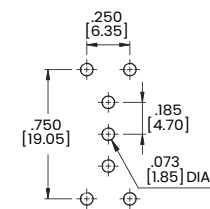


VS4-VS5 Single Pole

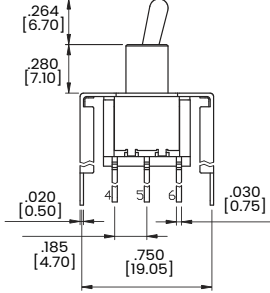
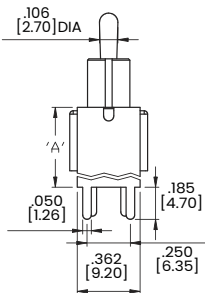


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

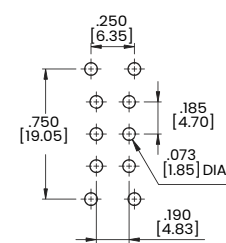


VS4-VS5 Double Pole



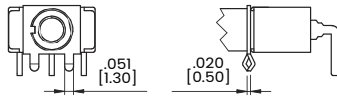
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

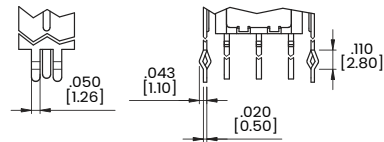


Snap-In Termination Options

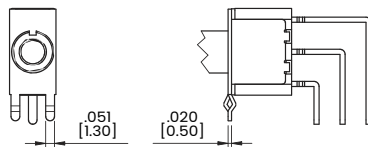
M61 (available with SP & DP)



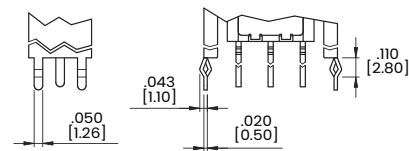
VS21, VS31



M71 (available with SP & DP)



VS41, VS51



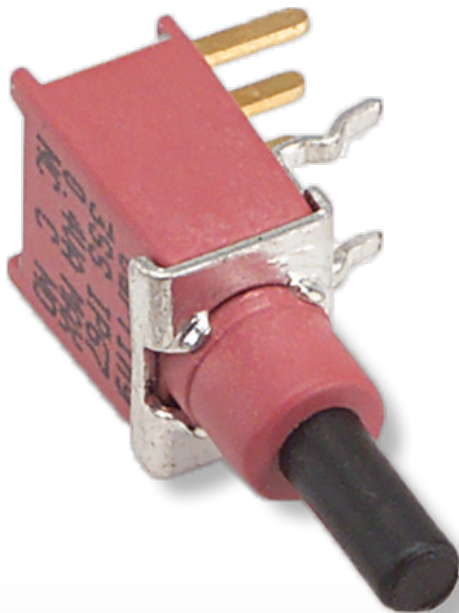
* PC Mounting for M61,M71,VS21,VS31,VS41,VS51 refer to M6,M7,VS2,VS3,VS4,VS5 respectively.

3S-Series

Miniature Pushbutton Switches

PRODUCT WEBPAGE

request sample, configure part



The 3S family of sub-miniature pushbutton switches is composed of three switch series; the 3SI-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.

1-2 **.4-6** **125, 250** **28**
Poles Amps VAC VDC

Typical Applications

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

Ordering Schemes

Sample Part Number 3S1 - SP 9 - B6 - M7 - R E

Selection 1 2 3 4 5 6 7

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. ACTUATOR STYLE

B5¹ 10-48 Threaded B9 Flush Bushing
 B6 Unthreaded "D" B0 1/4" Unthreaded "D"
 B7 Unthreaded OP1 Snap-In with bezel
 B8² 1/4-40 Threaded "D" PO Flush Plunger

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

5. TERMINATION

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

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

Sample Part Number 3S1 - SP 9 - B6 - M7 - R E

Selection 1 2 3 4 5 6 7

1. SERIES

3MS Sealed Snap-Action 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
 7 ON (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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

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

Sample Part Number 3S1 - C1 3

Selection 1 2 3

1. SERIES

3S1 Fits 3SS, 3S1 or 3MS

2. TOGGLE CAP SIZE

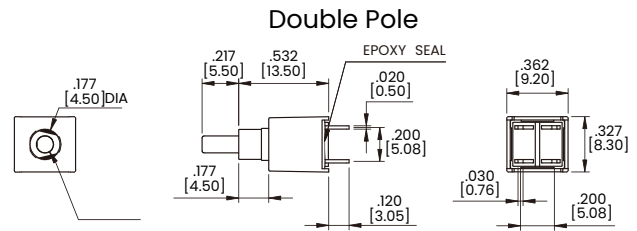
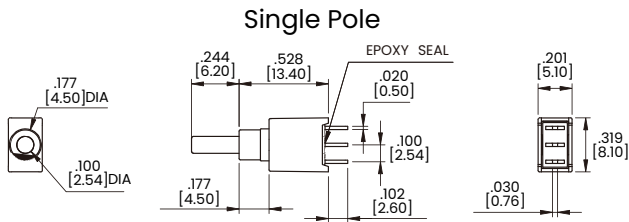
C1 .158" [4.01 mm] height C2 .138" [35.05 mm] height

3. CAP COLOR

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

Dimensional Specs

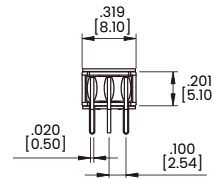
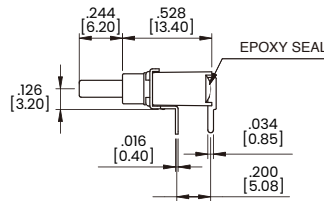
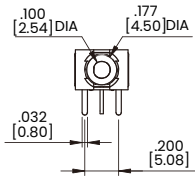
inches [millimeters]



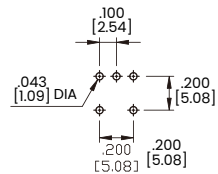
* Double Thrown Shown. Single Throw uses two outer terminals only.

Termination Options

M6 Single Pole

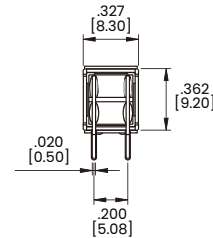
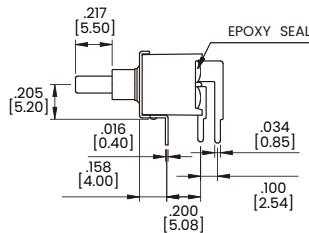
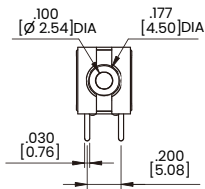


P.C.MOUNTING

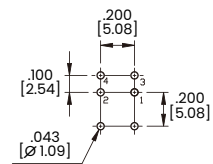


* Double Thrown Shown. Single Throw uses two outer terminals only.

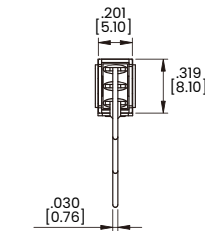
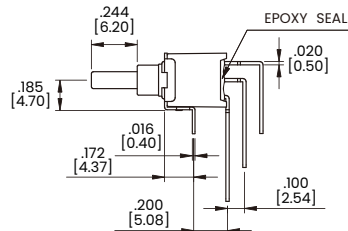
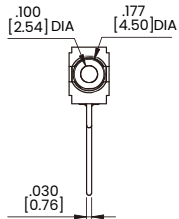
M6 Double Pole



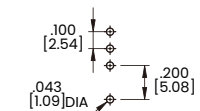
P.C.MOUNTING



M7 Single Pole

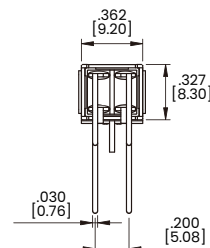
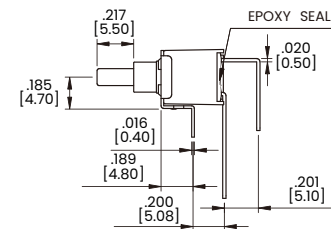
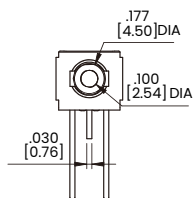


P.C.MOUNTING

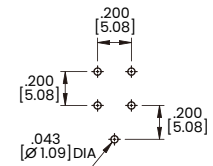


* Double Thrown Shown. Single Throw uses two outer terminals only.

M7 Double Pole



P.C.MOUNTING

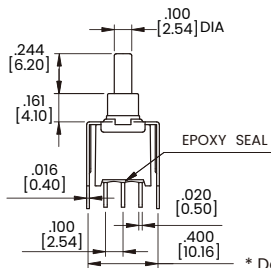
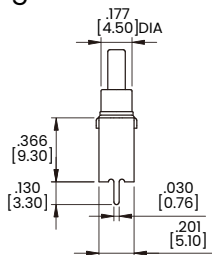


Dimensional Specs

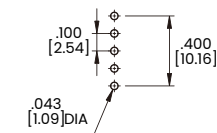
inches [millimeters]

Termination Options

VS2 Single Pole

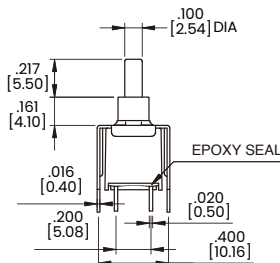
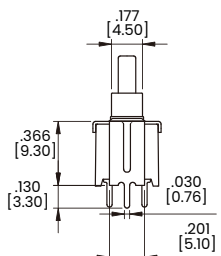


P.C.MOUNTING

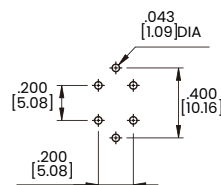


* Double Throw Shown. Single Throw uses outer terminals only.

VS2 Double Pole

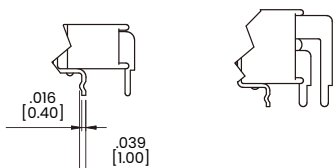


P.C.MOUNTING

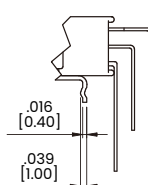


Snap-In Termination Options

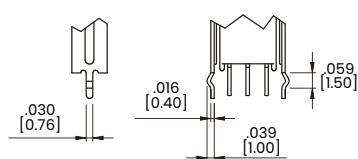
M61



M71



VS21

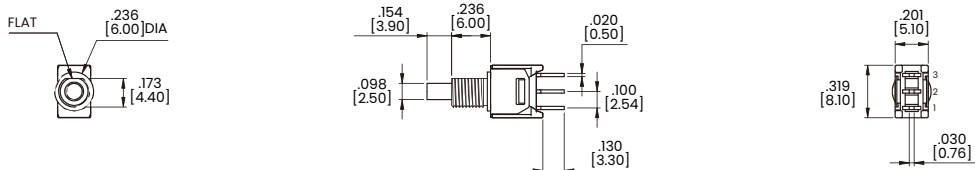


* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.

Dimensional Specs

inches [millimeters]

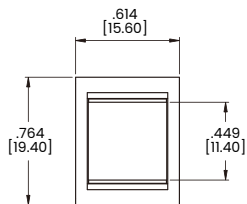
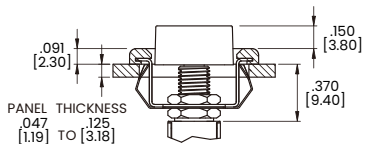
Single Pole



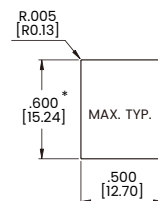
* DoubleThrow shown. Single Throw uses two outer terminals only.

Actuator Options for Snap-In Front Mount

OPI

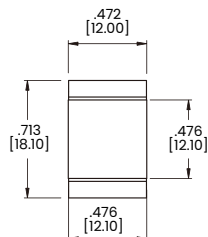
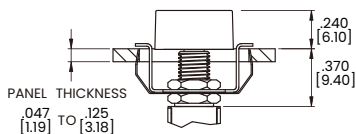


PANEL MOUNTING

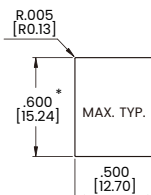


*Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

OPI Without Frame



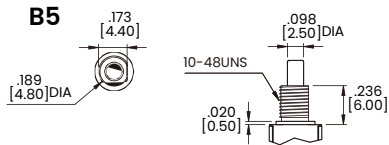
PANEL MOUNTING



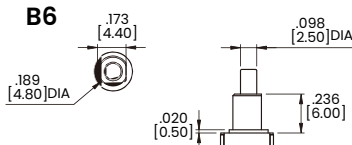
*Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

Bushing Options

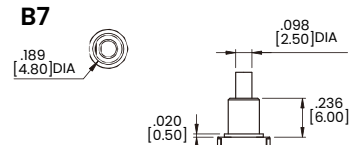
B5



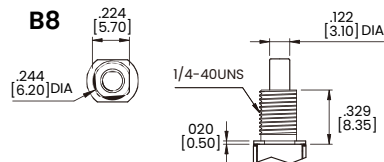
B6



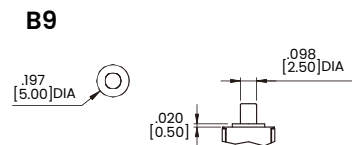
B7



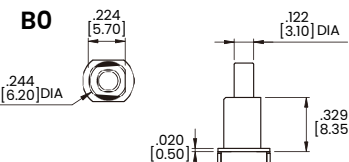
B8



B9

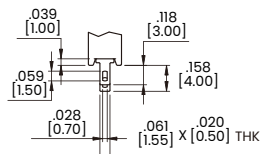


B0

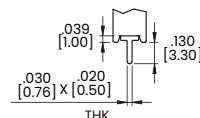


Termination Options

M1



M2

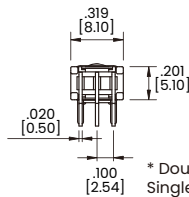
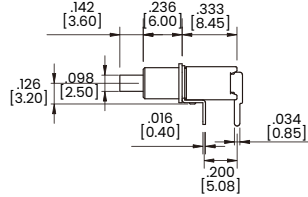
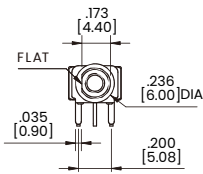


Dimensional Specs

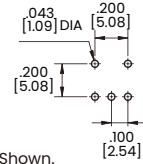
inches [millimeters]

Termination Options

M6 Single Pole

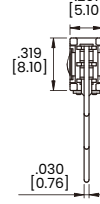
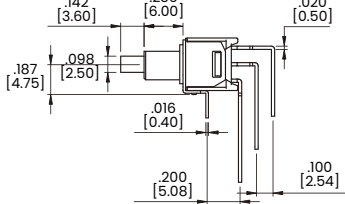
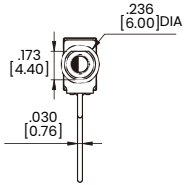


P.C.MOUNTING

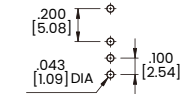


* Double Throw Shown.
Single Throw uses two outer terminals only.

M7 Single Pole

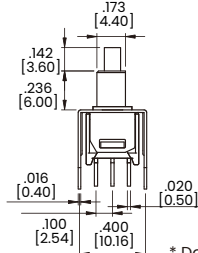
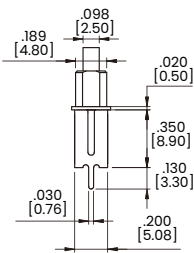


P.C.MOUNTING

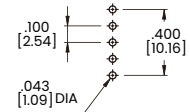


* Double Throw Shown.
Single Throw uses two outer terminals only.

VS2 Single Pole



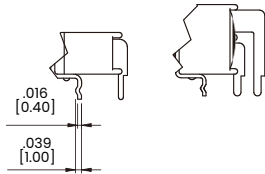
P.C.MOUNTING



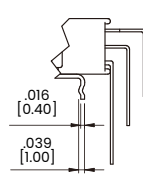
* Double Throw Shown. Single Throw uses outer terminals only.

Snap-In Termination Options

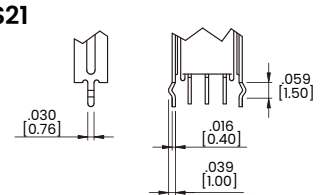
M61



M71



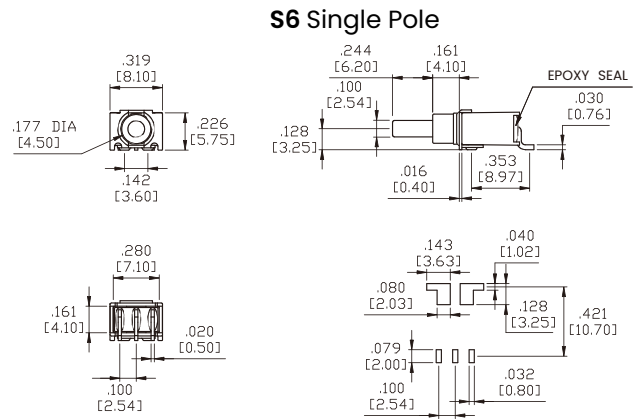
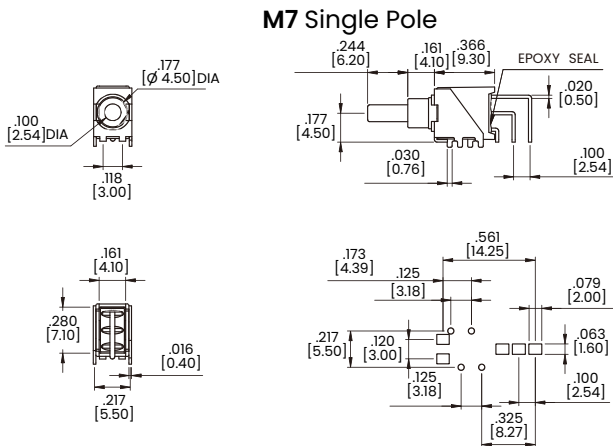
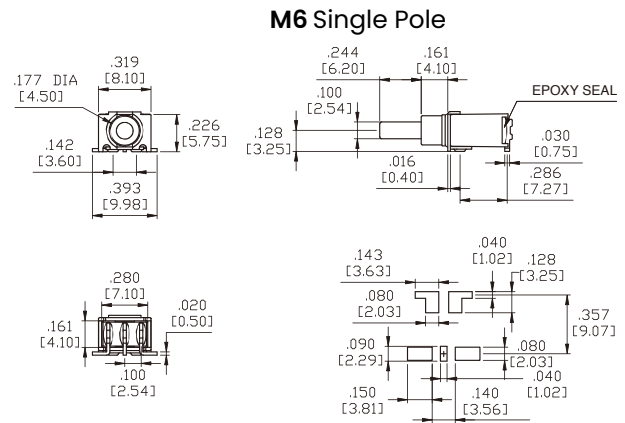
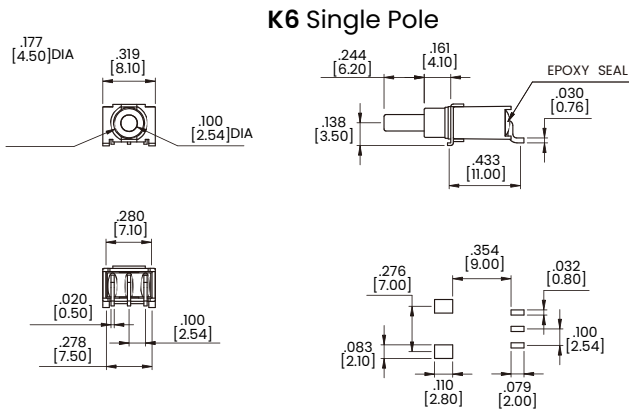
VS21



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

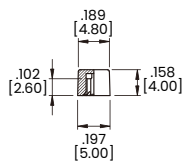
Dimensional Specs

inches [millimeters]



* Double Thrown Shown. Single Throw uses two outer terminals only.

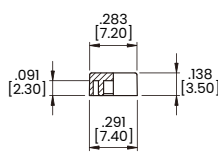
C1



* MATERIAL: ABS.

Plunger Caps

C2



* MATERIAL: ABS.

CAP COLORS

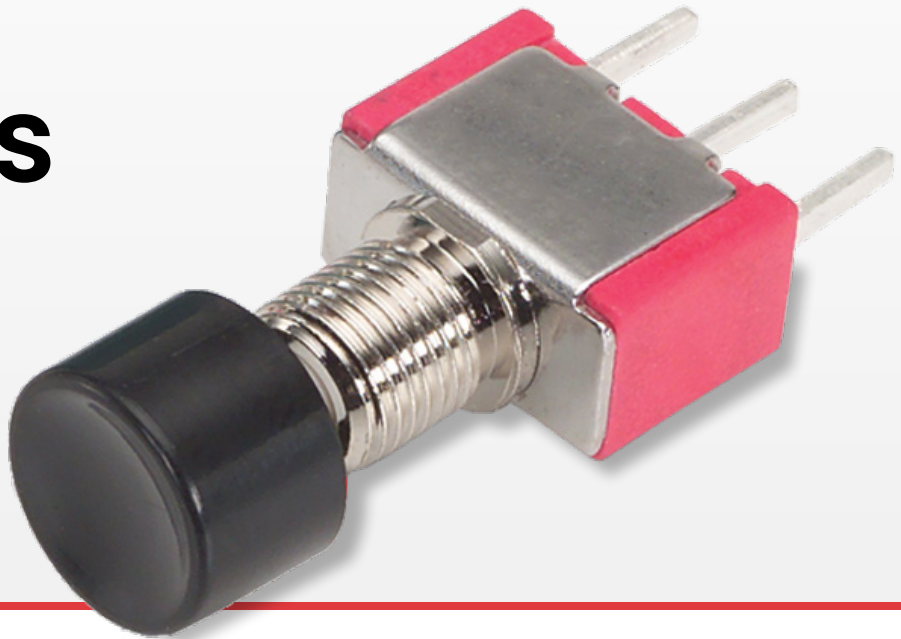
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

3M-Series

Miniature Pushbutton Switches

PRODUCT WEBPAGE

request sample, configure part



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.

1-2 **.4-6** **125, 250** **28**
Poles Amps VAC VDC

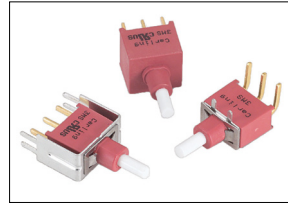
Typical Applications

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

Tech Specs



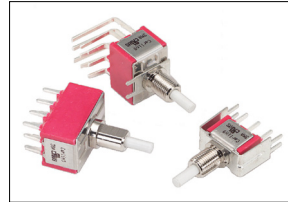
3MNH-Series
Premium Sealed
Miniature Pushbutton



3MS-Series
Sealed Snap-Action
Miniature Pushbutton



3MN-Series
Snap-Action
Miniature Pushbutton



3MA-Series
Alternate Action
Miniature Pushbutton

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	50,000 make & break cycles @ full load
Contact Resistance	3MS-Series: 50 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts. 3MN, 3MA & 3NMH-Series: 10 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts.
Insulation Resistance	1000 MΩ min.
Dielectric Strength	1500 Volts RMS @ sea level

Physical

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

Material

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

Ordering Schemes

Sample Part Number 3MNH - DP 1 - PJ - BJ - M2 - Q E

Selection 1 2 3 4 5 6 7 8

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. ACTUATOR STYLE

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

Notes:

- PJ Plunger for maintained circuits only. PA and PB Plunger for momentary circuits only
- Hardware includes (1) 2MI-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

[Configure Complete Part Number >](#) [Browse Standard Parts >](#)

5. ACTUATOR COLOR

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, .71" [18.05 mm]
M52 Wire wrap, .924" [23.48 mm]
M53 Wire wrap, .386" [9.80 mm]

7. CONTACTS / TERMINALS

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

8. EPOXY SEAL

E Epoxy Seal

Sample Part Number 3SM - WSP 7 - P1 - B1 - M6 Q E

Selection 1 2 3 4 5 6 7 8

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 2-1, 5-4
 ON (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]

Notes:

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

6. TERMINATION

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

7. CONTACTS/TERMINALS

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

8. EPOXY SEAL

E Epoxy Seal **0** without Epoxy Seal

[Configure Complete Part Number >](#) [Browse Standard Parts >](#)

Ordering Scheme

3MN-Series with Square Actuator

Sample Part Number 3MN - SP - 7 - AP2 / 3 2 - M6 Q E

Selection 1 2 3 4 5A 5B 6 7 8

3MN-Series with Plunger Actuator

Sample Part Number 3MN - SP - 7 - P2 - B10 - B6 Q E

Selection 1 2 3 4 5 6 7 8

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** 2-3, 5-6 **2** 2-1, 5-4
7 ON (ON)

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

4. ACTUATOR

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

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

Plunger Actuator (use with Bushing Options in Selection 5)

P0 Flush Plunger
P1 Standard Plunger
P2 Short Plunger

5A. ACTUATOR COLOR & 5B FRAME COLOR

1 White
2 Black
3 Red

5B. BUSHING

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

6. TERMINATION

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

7. CONTACTS/TERMINALS

Contact Material	Terminal Plating	Rating	Approvals
G silver	gold over silver	1A 125VAC or 28VDC	c us
Q silver ⁵	silver ⁵	1A 125VAC or 28VDC	c us
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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

Ordering Scheme

3MA-Series with Square Actuator

Sample Part Number 3MA - SP - 1 - AP2 / 3 2 - M6 Q E

Selection 1 2 3 4 5A 5B 6 7 8

3MN-Series with Plunger Actuator

Sample Part Number 3MA - SP - 1 - PD - BD - M6 Q E

Selection 1 2 3 4 5 6 7 8

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 1 **2** **3**
Position: 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)

*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

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




5B. 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) 2MI-HDW2 nuts, (1) 2MI-HDW12 washer, and (1) 2MI-HDW17 locking ring
- Hardware includes (2) 2MI-HDW2 nuts, (1) 2MI-HDW11 washer, and (1) 2MI-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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

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

Sample Part Number 3MN - C1 3

Selection 1 2 3

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

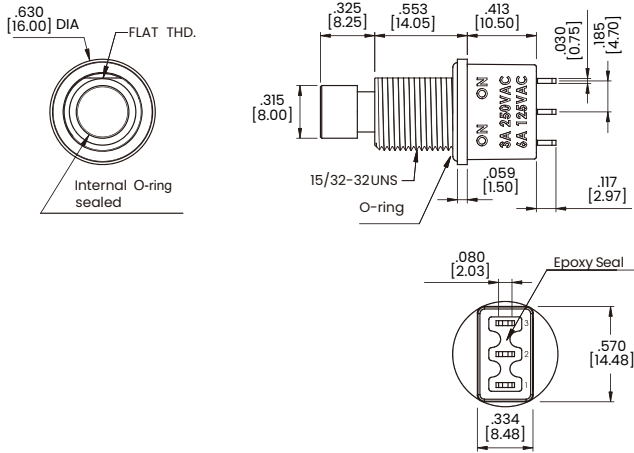
Notes:

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

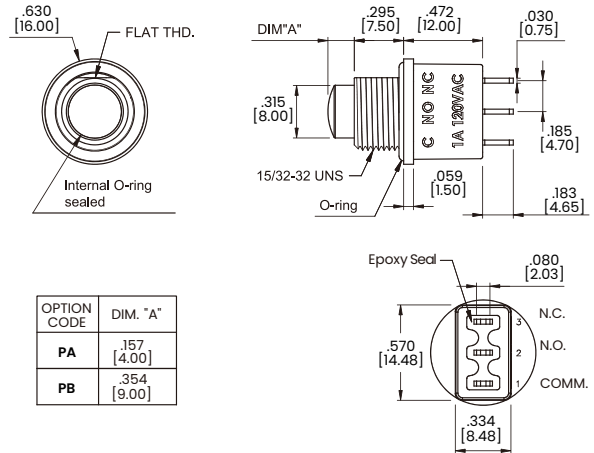
Dimensional Specs

inches [millimeters]

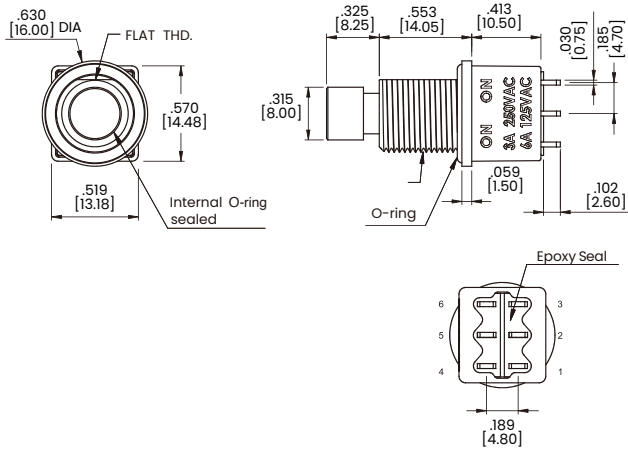
Single Pole Maintained Circuit



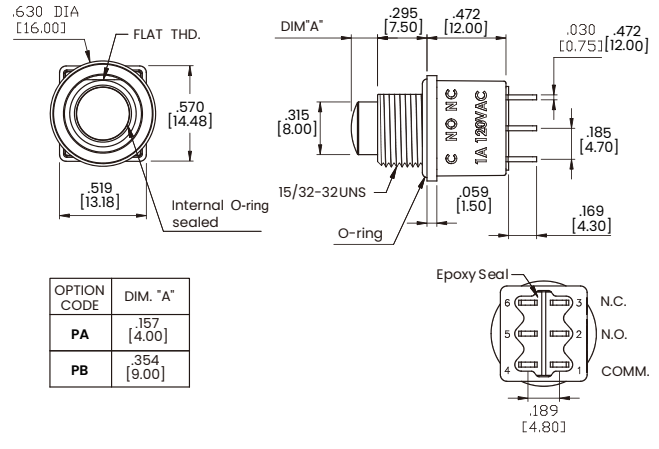
Single Pole Momentary Circuit



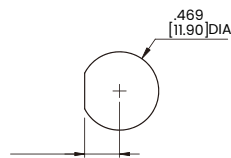
Double Pole Maintained Circuit



Double Pole Momentary Circuit



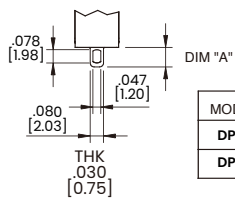
Panel Mounting



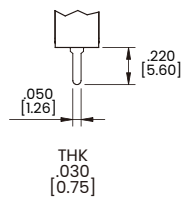
15/32-32 UNS FLAT-CUT THREADED BUSHING

Termination Options

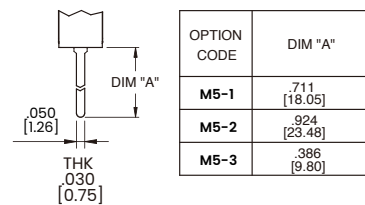
M1 Standard Solder Lug



M2 PC Thru-Hole

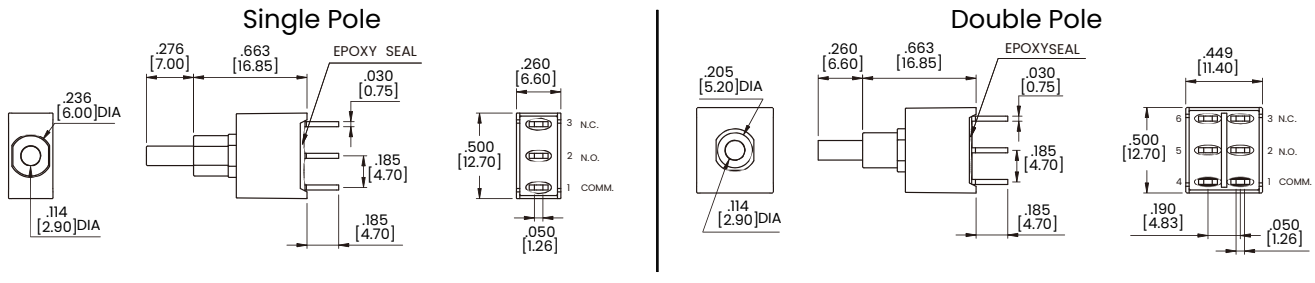


M5 Wire Wrap

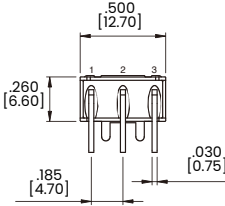
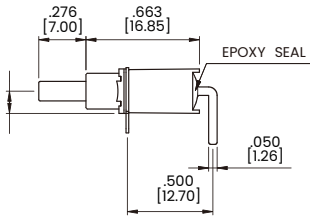
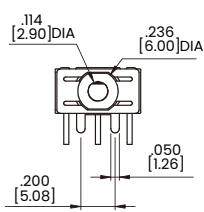


Dimensional Specs

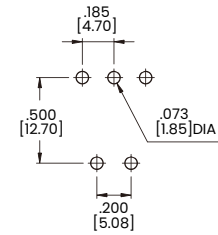
inches [millimeters]



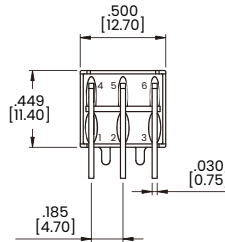
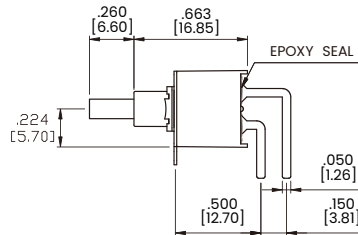
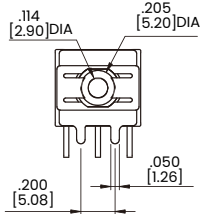
M6 Single Pole



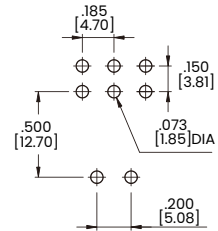
P.C.MOUNTING



M6 Double Pole

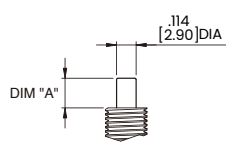


P.C.MOUNTING



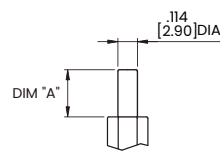
Plunger Options

For B1 Bushing



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

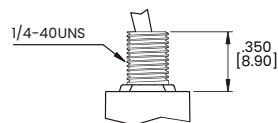
For B4 Bushing



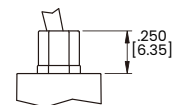
OPTION CODE	DIM. "A"
P1	.276 [7.00]
P2	.323 [8.20]
P3	.181 [4.60]

Bushing Options

B1



B4

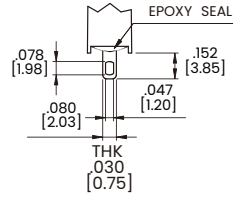


Dimensional Specs

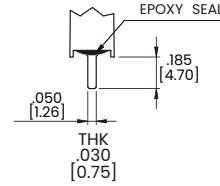
inches [millimeters]

Termination Options

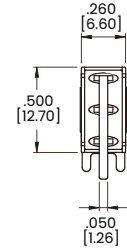
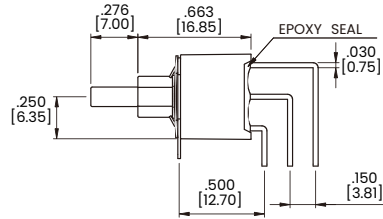
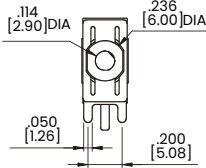
M1



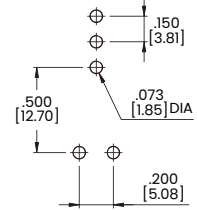
M2



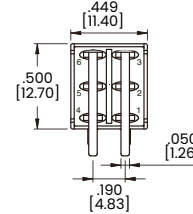
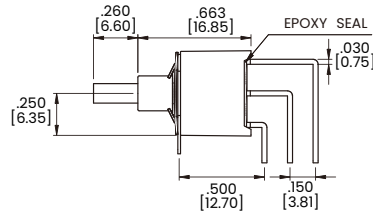
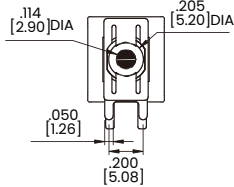
M7 Single Pole



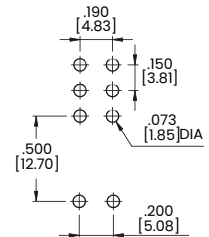
P.C.MOUNTING



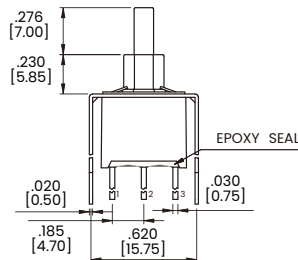
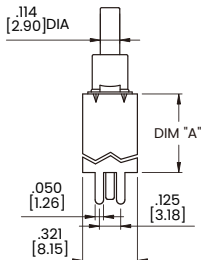
M7 Double Pole



P.C.MOUNTING

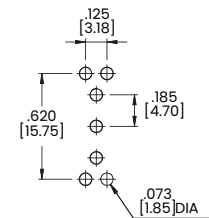


VS2-VS3 Single Pole

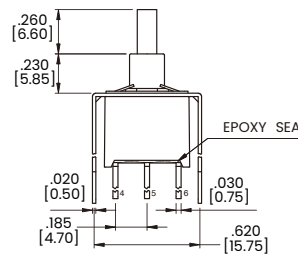
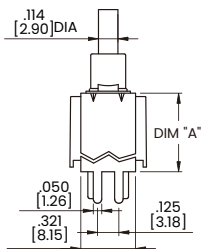


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

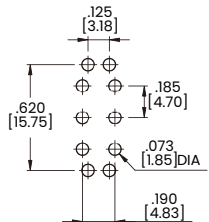


VS2-VS3 Double Pole



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

P.C.MOUNTING

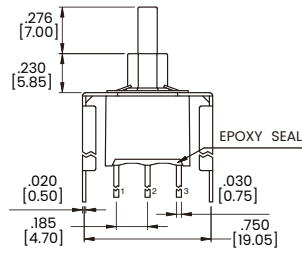
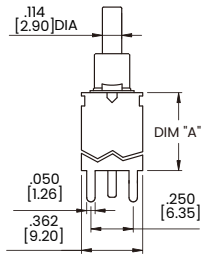


Dimensional Specs

inches [millimeters]

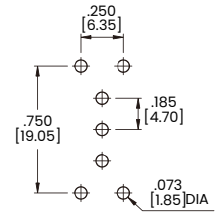
VS4-VS5 Single Pole

Termination Options

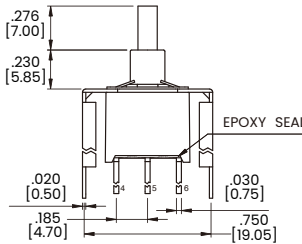
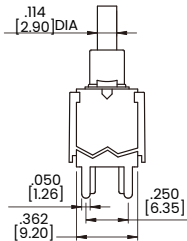


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

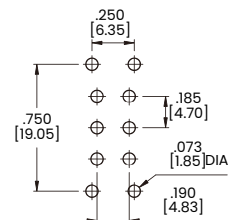


VS4-VS5 Double Pole



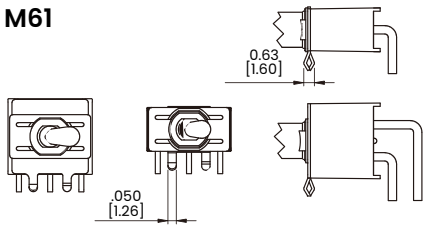
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

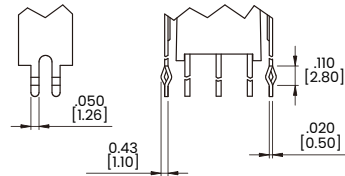


Snap-In Termination Options

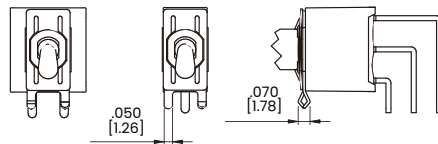
M61



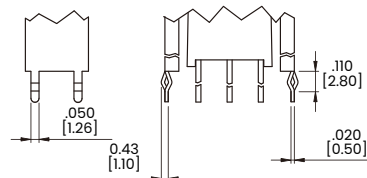
VS21, VS31



M71



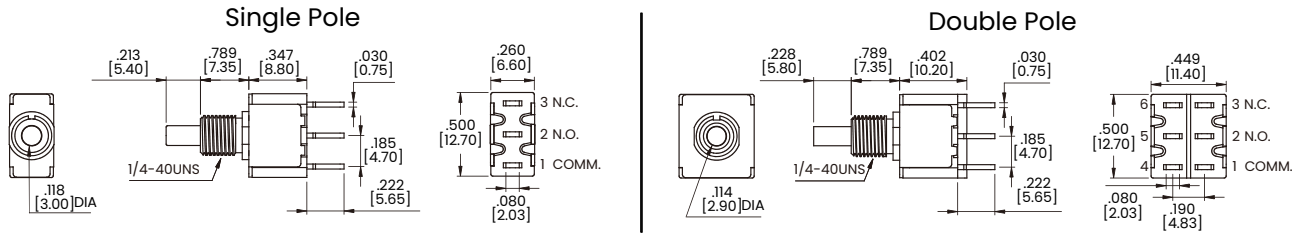
VS41, VS51



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

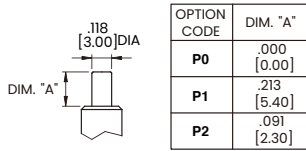
Dimensional Specs

inches [millimeters]

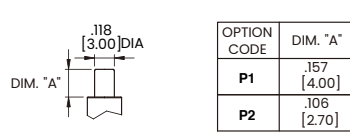


Plunger Options

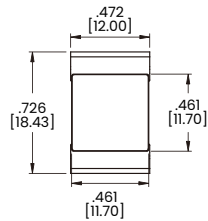
For B1, B2, B3, B4 Bushing



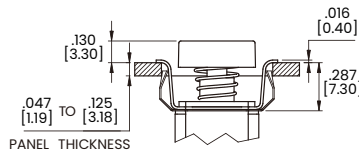
For B6 Bushing



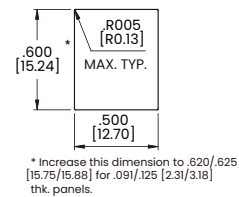
API



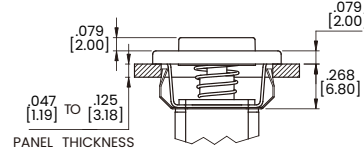
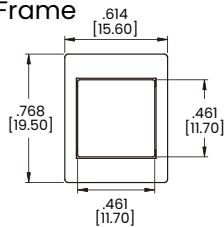
Actuator Options for Snap-In Front Mount



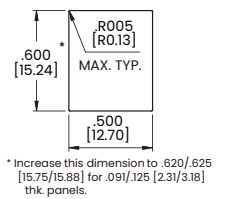
PANEL MOUNTING



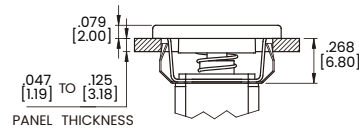
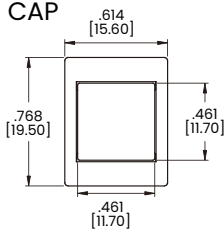
AP2 with Frame



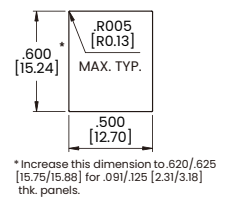
PANEL MOUNTING



AP3 Flush CAP

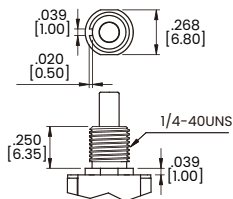


PANEL MOUNTING

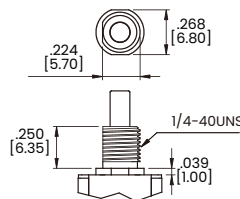


Bushing Options

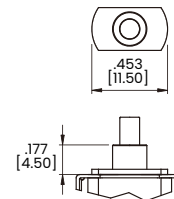
B1 Threaded Standard
B2 Non-Threaded



B3 Threaded Standard
B4 Non-Threaded



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

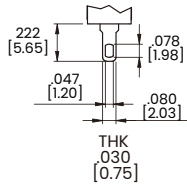


Dimensional Specs

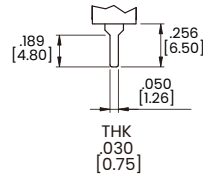
inches [millimeters]

Termination Options

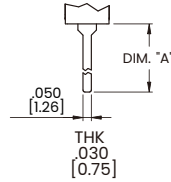
M1 Standard Solder Lug



M2 PC Thru-Hole

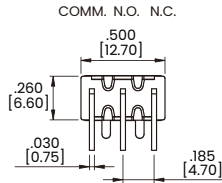
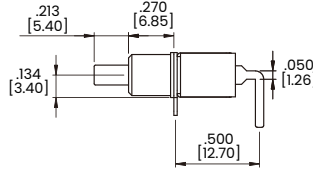
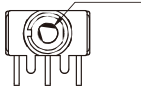


M5 Wire Wrap

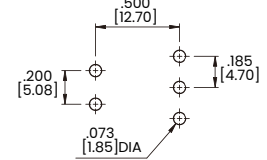


OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]

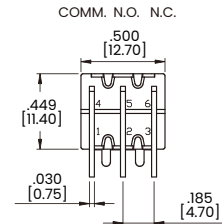
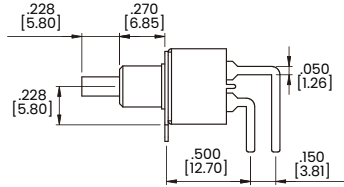
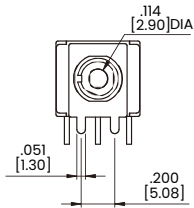
M6 Single Pole



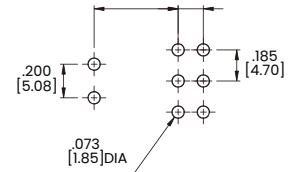
P.C.MOUNTING



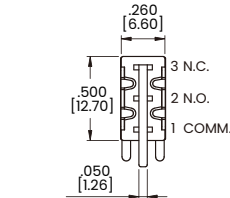
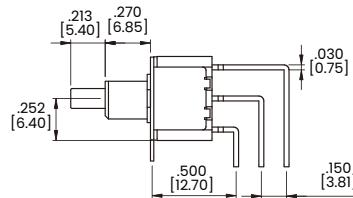
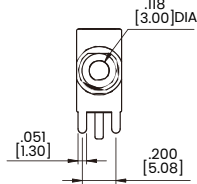
M6 Double Pole



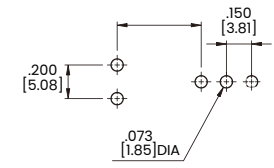
P.C.MOUNTING



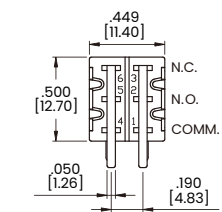
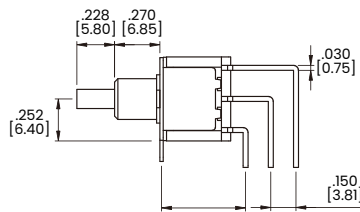
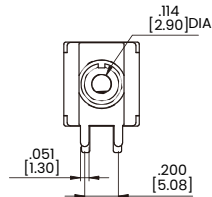
M7 Single Pole



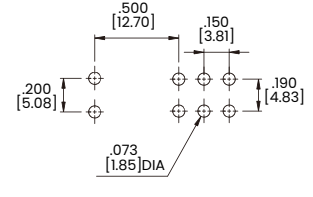
P.C.MOUNTING



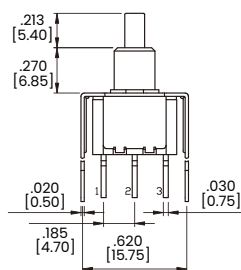
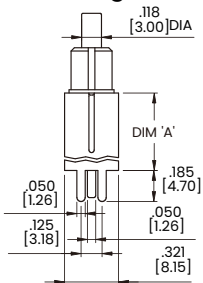
M7 Double Pole



P.C.MOUNTING

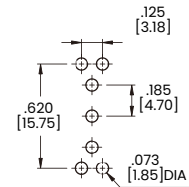


VS2-VS3 Single Pole



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

P.C.MOUNTING

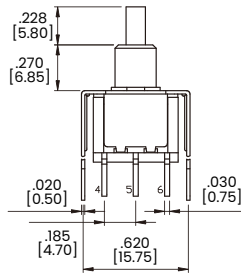
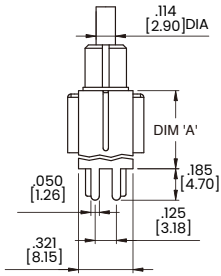


Dimensional Specs

inches [millimeters]

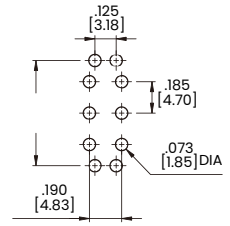
Termination Options

VS2-VS3 Double Pole

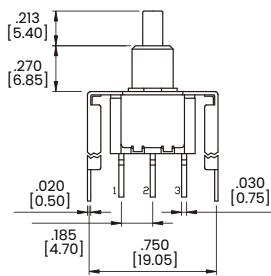
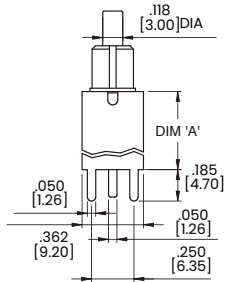


OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

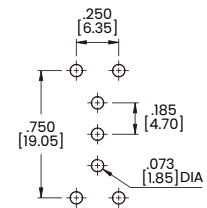


VS4-VS5 Single Pole

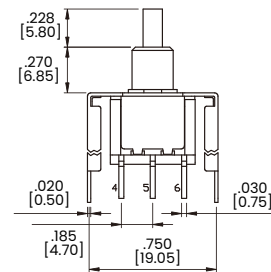
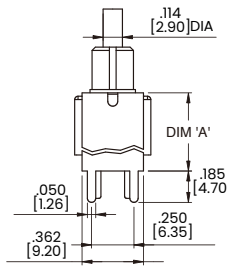


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

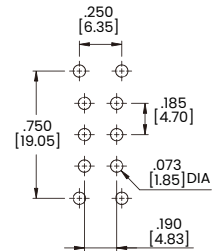


VS4-VS5 Double Pole

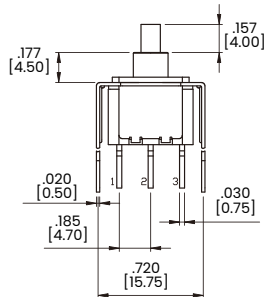
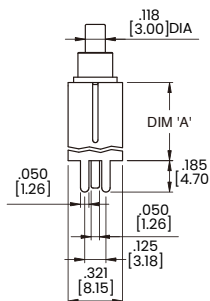


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

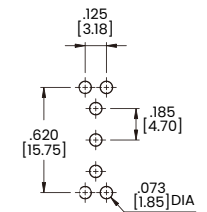


VS6-VS7 Single Pole (FOR B6 BUSHING ONLY)



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

P.C.MOUNTING

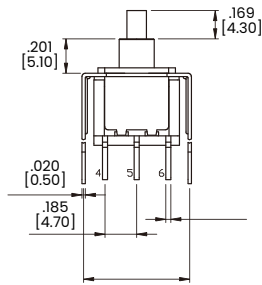
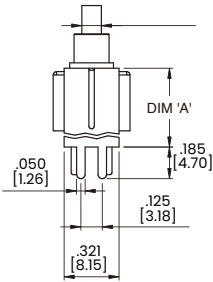


Dimensional Specs

inches [millimeters]

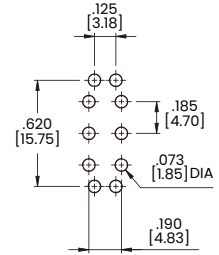
Termination Options

VS6-VS7 Double Pole (FOR B6 BUSHING ONLY)

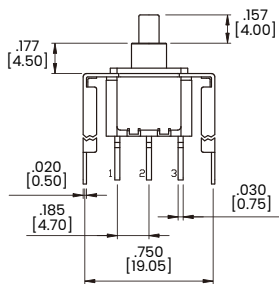
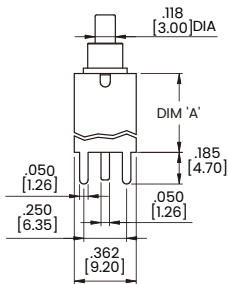


OPTION CODE	DIM.'A'
VS6	.461 [11.70]
VS7	.630 [16.00]

P.C.MOUNTING

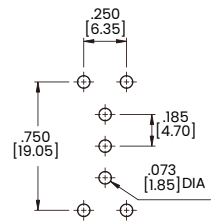


VS8-VS9 Single Pole (FOR B6 BUSHING ONLY)

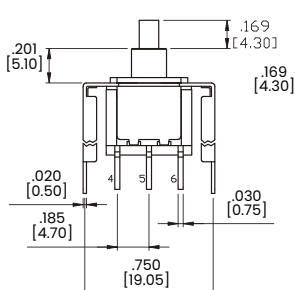
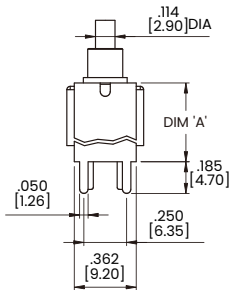


OPTION CODE	DIM.'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

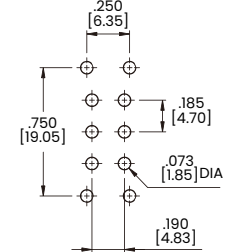


VS8-VS9 Double Pole (FOR B6 BUSHING ONLY)



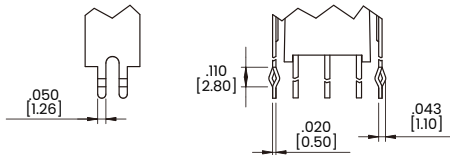
OPTION CODE	DIM.'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

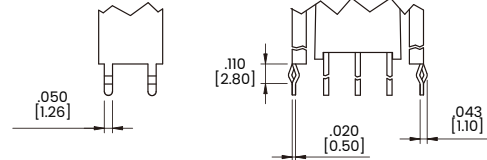


Snap-In Termination Options

VS21, VS31



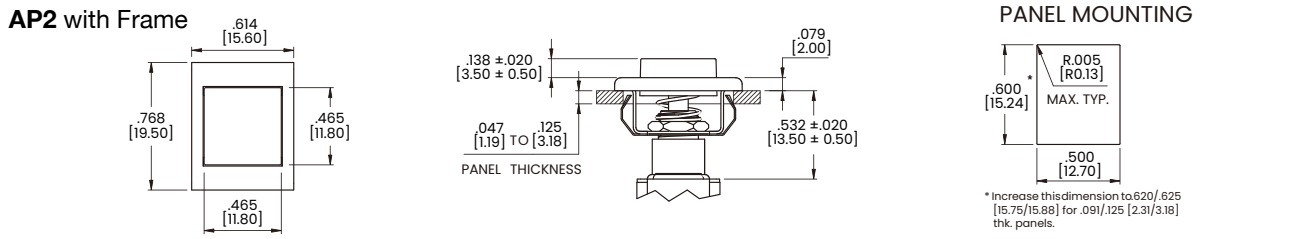
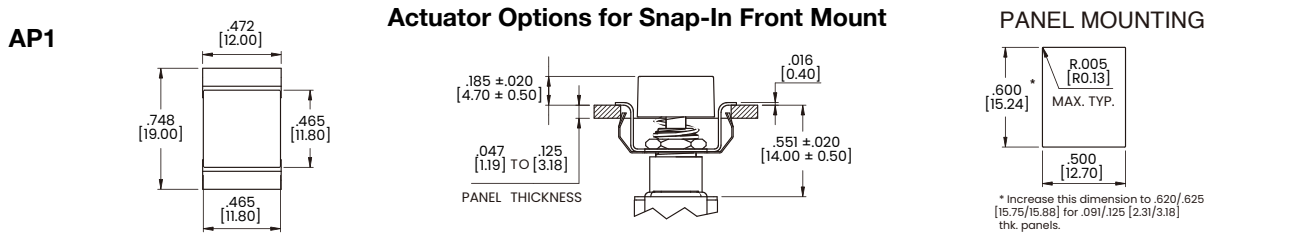
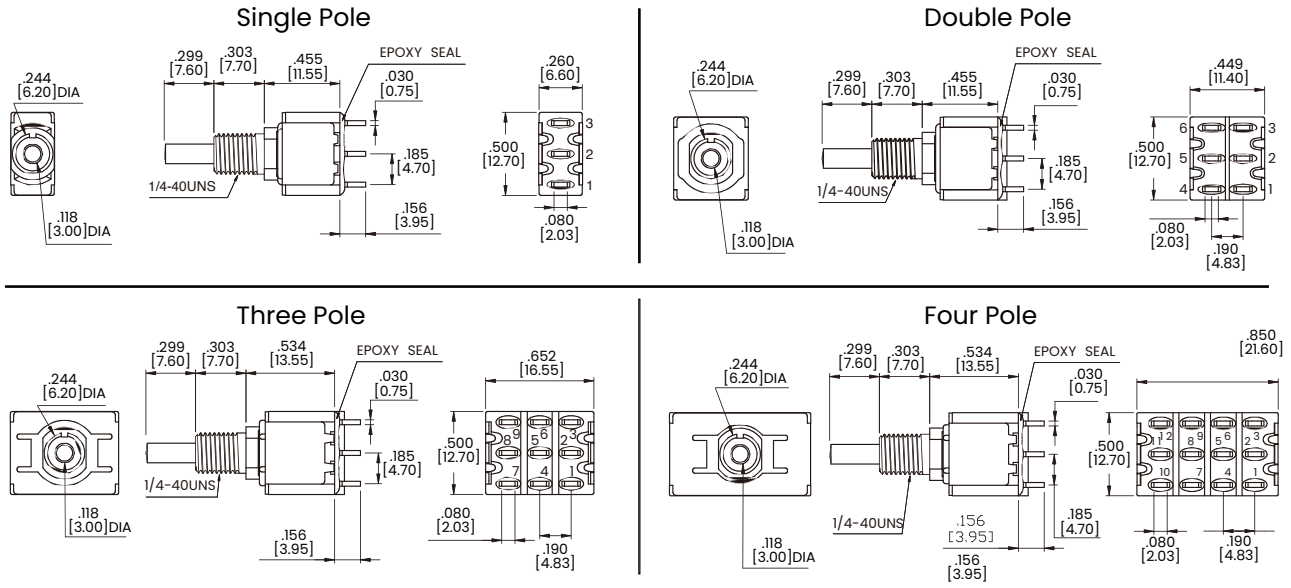
VS41, VS51



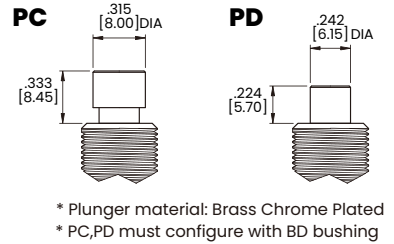
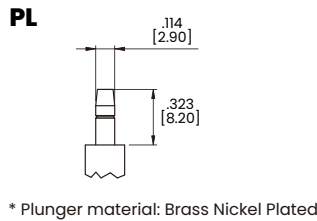
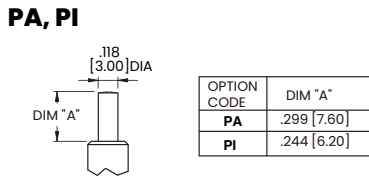
* PC Mounting for VS21, VS31, VS41, VS51 refer to VS2, VS3, VS4, VS5 respectively.

Dimensional Specs

inches [millimeters]



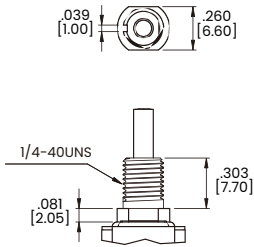
Plunger Options



Dimensional Specs

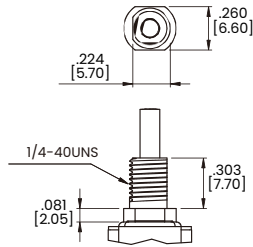
inches [millimeters]

B10 Threaded Standard B20 Non-Threaded

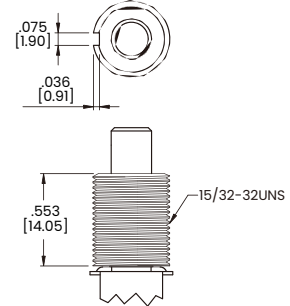


Bushing Options

B21 Non-Threaded

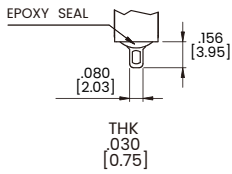


BD Threaded Standard

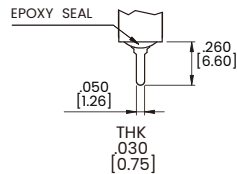


Termination Options

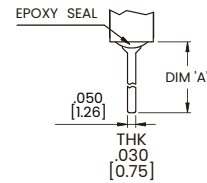
M1 Standard Solder Lug



M2 PC Thru-Hole

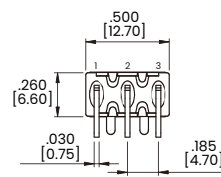
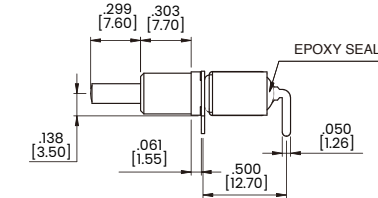
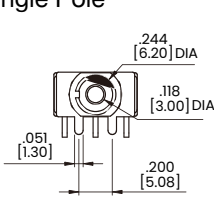


M5 Wire Wrape

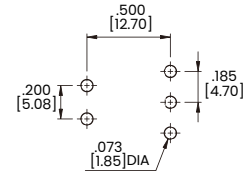


OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

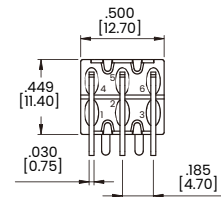
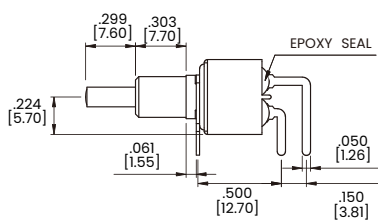
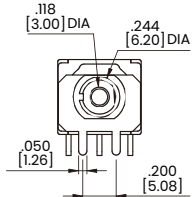
M6 Single Pole



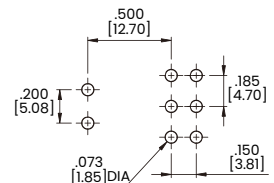
P.C.MOUNTING



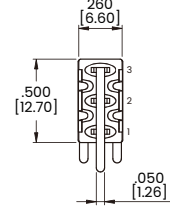
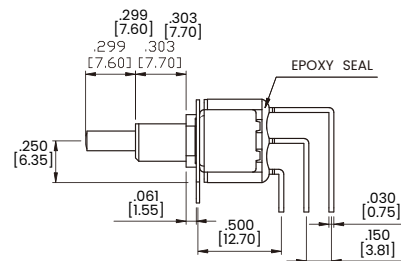
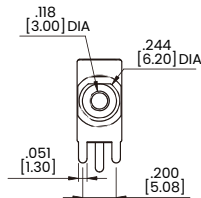
M6 Double Pole



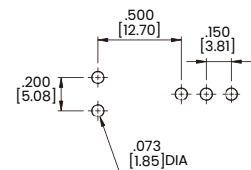
P.C.MOUNTING



M7 Single Pole



P.C.MOUNTING

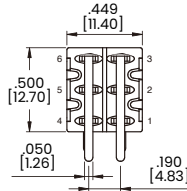
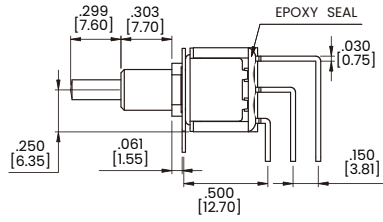
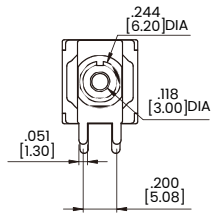


Dimensional Specs

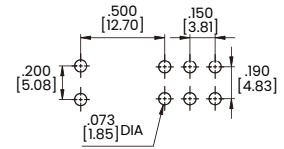
inches [millimeters]

Termination Options

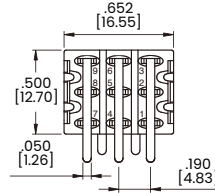
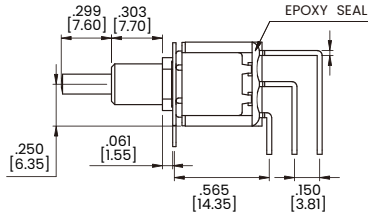
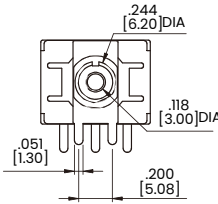
M7 Double Pole



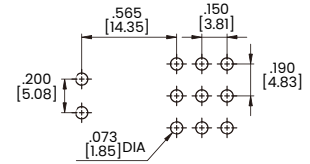
P.C.MOUNTING



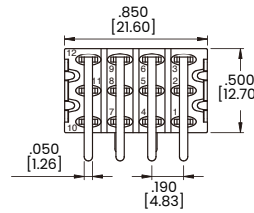
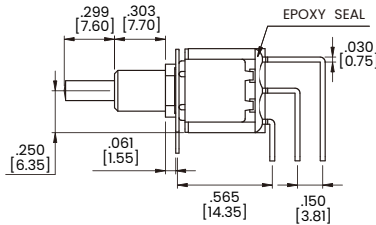
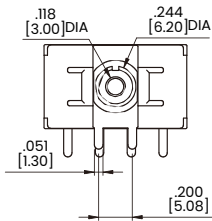
M7 Three Pole



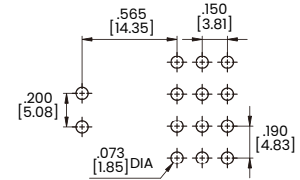
P.C.MOUNTING



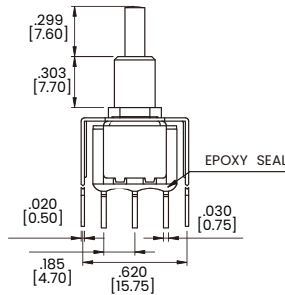
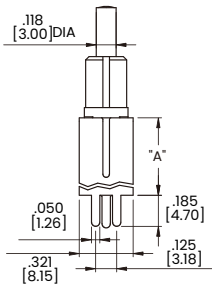
M7 Four Pole



P.C.MOUNTING

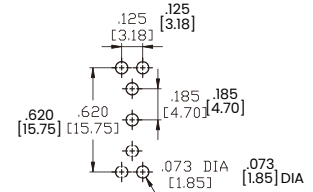


VS2-VS3 Single Pole

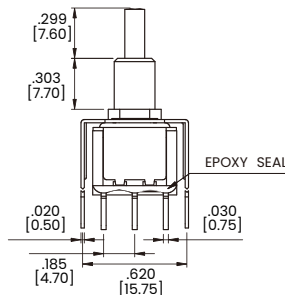
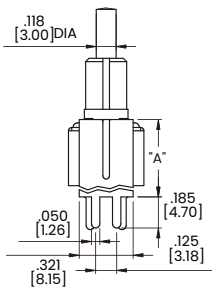


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

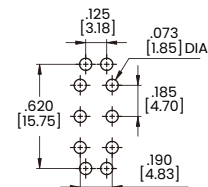


VS2-VS3 Double Pole



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

P.C.MOUNTING

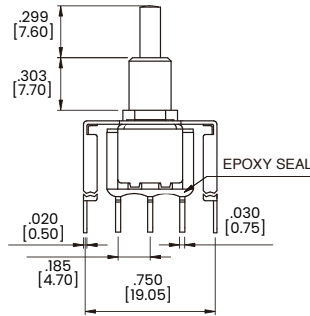
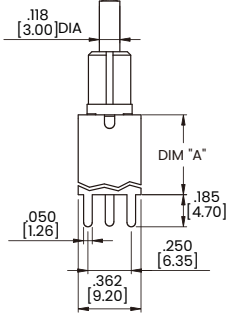


Dimensional Specs

inches [millimeters]

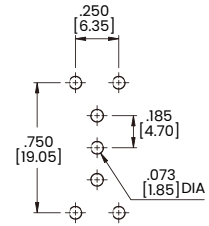
Termination Options

VS4-VS5 Single Pole

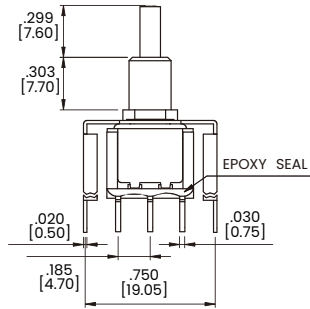
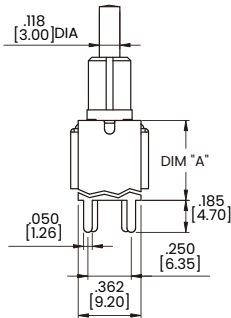


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

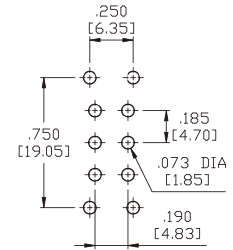


VS4-VS5 Double Pole



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

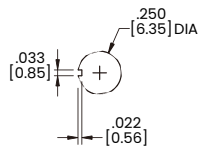
P.C.MOUNTING



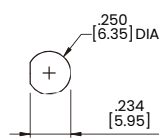
Panel Mounting

1/4 INCH BUSHING

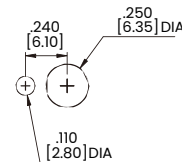
B10



B20

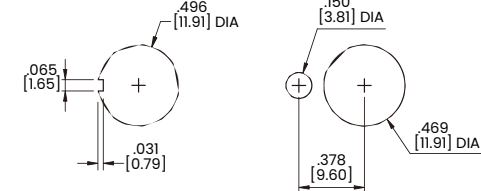


B21



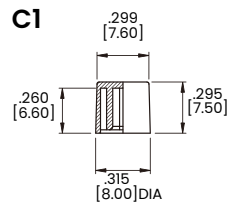
15/32 INCH BUSHING

BD

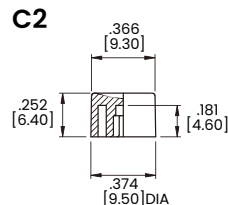


Plunger Caps

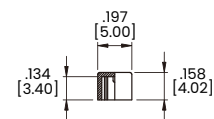
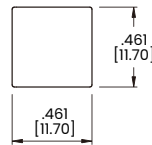
C1



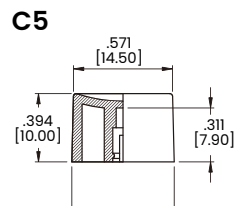
C2



C3

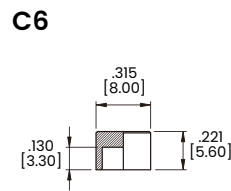


C5



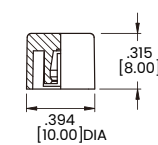
For PL plunger only

C6



For PD plunger only

C7



For PL plunger only

CAP AND FRAME COLORS

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

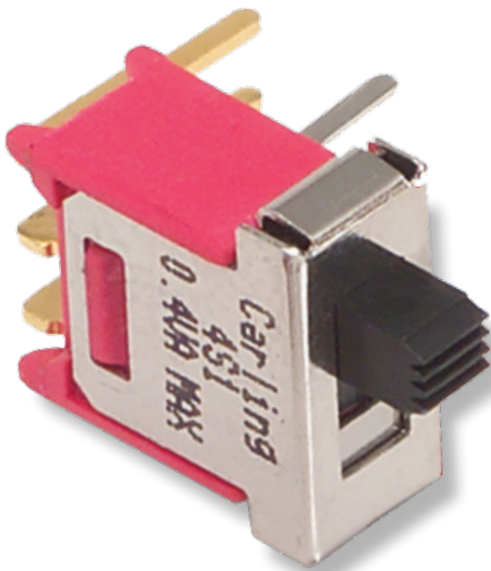
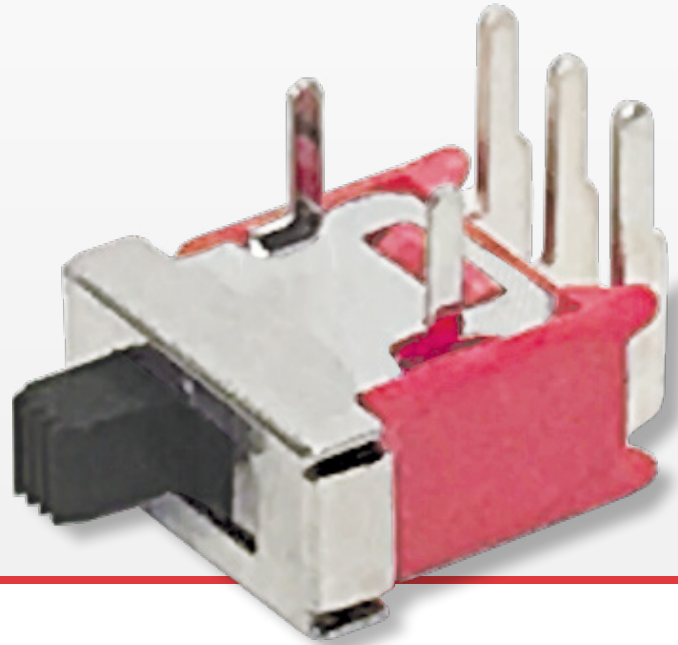
MATERIAL: ABS for C1-C5, C7
MATERIAL: Chrome plated brass for C6

4S-Series

Miniature Slide Switches

PRODUCT WEBPAGE

request sample, configure part



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.

1	.4-3	125, 250	28
Pole	Amps	VAC	VDC

Typical Applications

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

Tech Specs

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

Ordering Scheme

Sample Part Number **4S1 - FSP 1 - M6 Q E T/R**

Selection 1 2 3 4 5 6 7

1. SERIES

4M1 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
M7I 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:

- 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
- Terminal platings: tin over copper alloy, available with PC type terminations only
- Terminal contact platings: gold over nickel alloy
- Terminal contact platings: silver over nickel alloy
- Tin option available with PC type terminations only

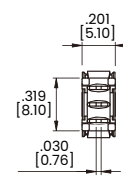
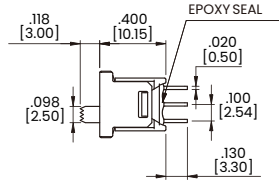
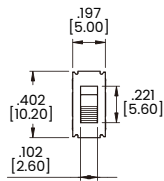
[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

Dimensional Specs

inches [millimeters]

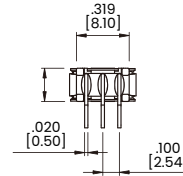
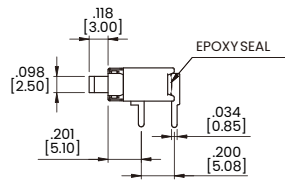
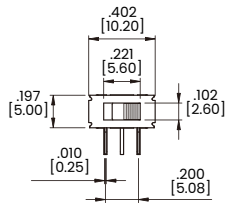
M2 Single Pole



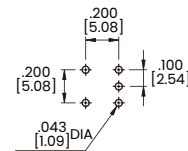
P.C.MOUNTING



M6 Single Pole

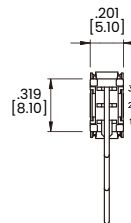
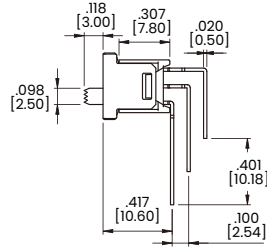
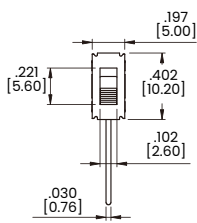


P.C.MOUNTING

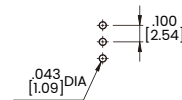


M7 Single Pole

M71 Snap-In Termination Single Pole



P.C.MOUNTING

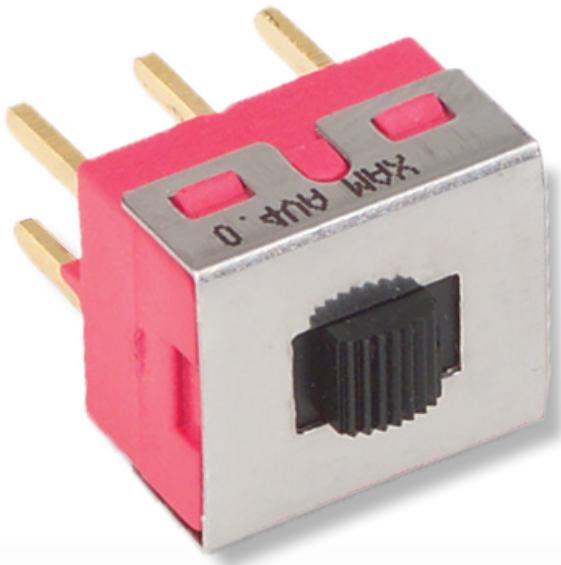
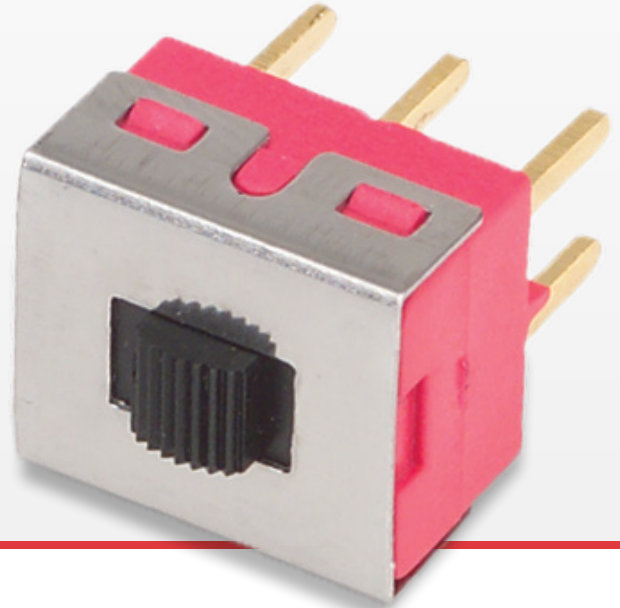


4M-Series

Miniature Slide Switches

PRODUCT WEBPAGE

request sample, configure part



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.

1-2	.4-5	125, 250	28
Poles	Amps	VAC	VDC

Typical Applications

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

Tech Specs

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

Ordering Scheme

Sample Part Number

4M1 - SSP 3 - S1 / 2 - M6 Q E

Selection 1 2 3 4 5 6 7

1. SERIES

4M1 Miniature Slide Switch

2. POLES

SSP Single Pole **SDP** Double Pole

3. CIRCUIT

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

5. TERMINATION

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

6. 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

7. 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

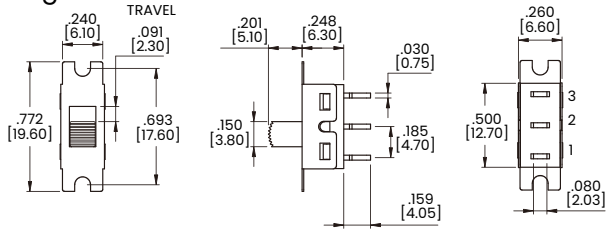
 [Configure Complete Part Number >](#)

 [Browse Standard Parts >](#)

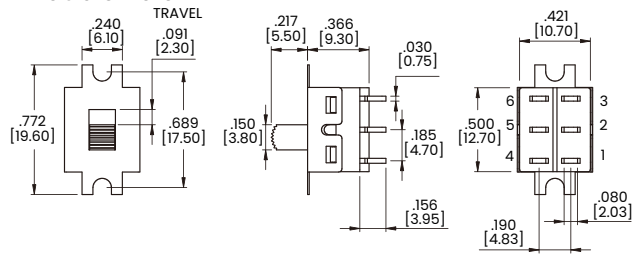
Dimensional Specs

inches [millimeters]

Single Pole



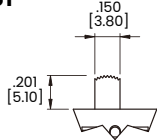
Double Pole



Actuator Options

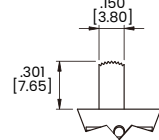
* All actuator length shown is SPDT model with M1 and M2 terminals.

S1



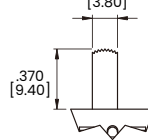
* Add 0.40 (.016) from actuator height for DPDT-M1 and M2 model.

S2



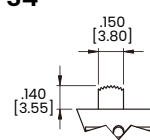
* Add 0.20 (.008) from actuator height for DPDT-M1 and M2 model.

S3



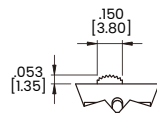
* Add 0.30 (.012) from actuator height for DPDT-M1 and M2 model.

S4

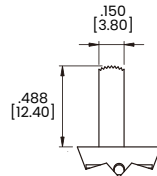


* Add 0.40 (.016) from actuator height for DPDT-M1 and M3 model.

S5

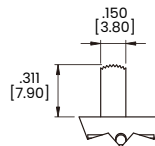


S6



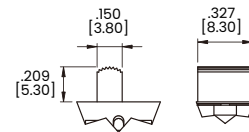
* Add 0.70 (.028) from actuator height for DPDT-M1 and M2 model.

S7



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

T1 for DPDT only

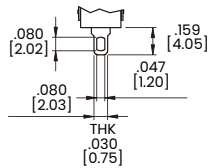


Dimensional Specs

inches [millimeters]

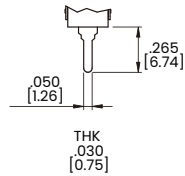
Termination Options

M1 Standard Solder Lug

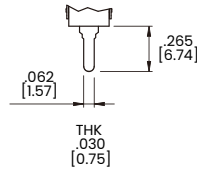


* Standard with Mounting Tabs.

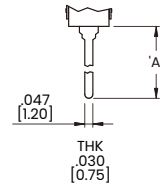
M2 PC Thru-Hole



M3 Quick Connect



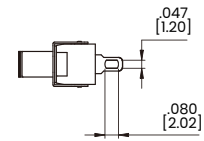
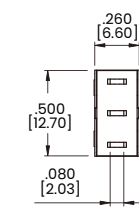
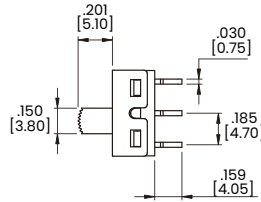
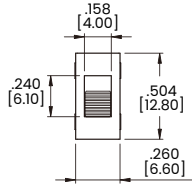
M5 Wire Wrap



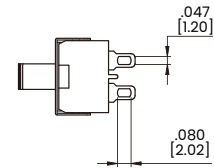
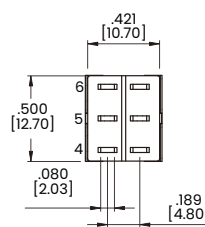
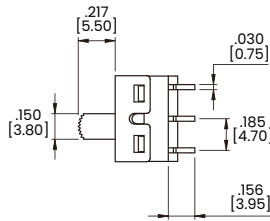
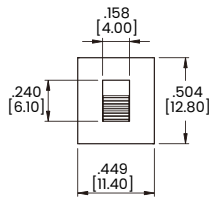
OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

Termination Options without Mounting Tabs

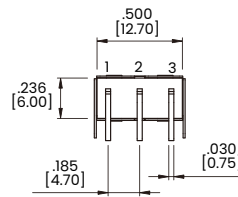
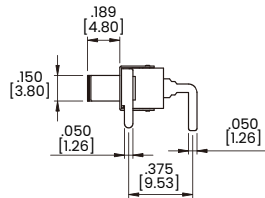
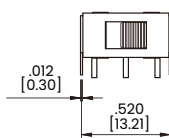
N1 Single Pole



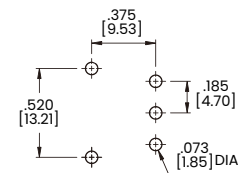
N1 Double Pole



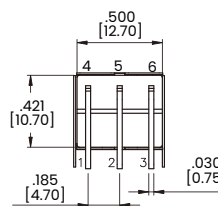
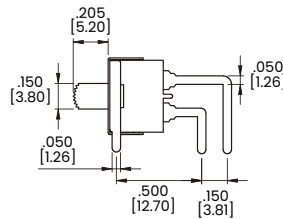
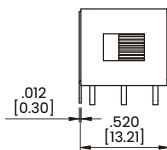
M6 Single Pole



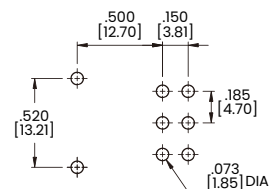
P.C.MOUNTING



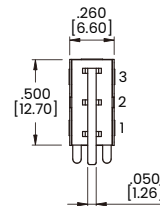
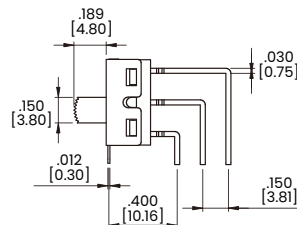
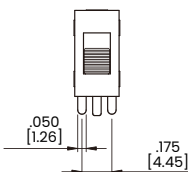
M6 Double Pole



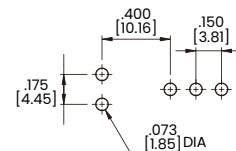
P.C.MOUNTING



M7 Single Pole



P.C.MOUNTING

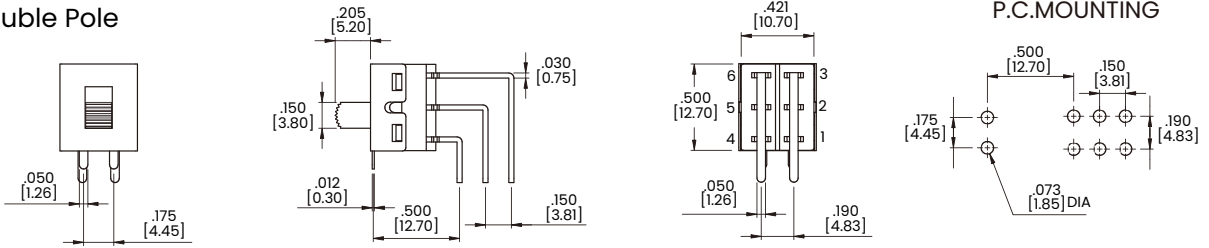


Dimensional Specs

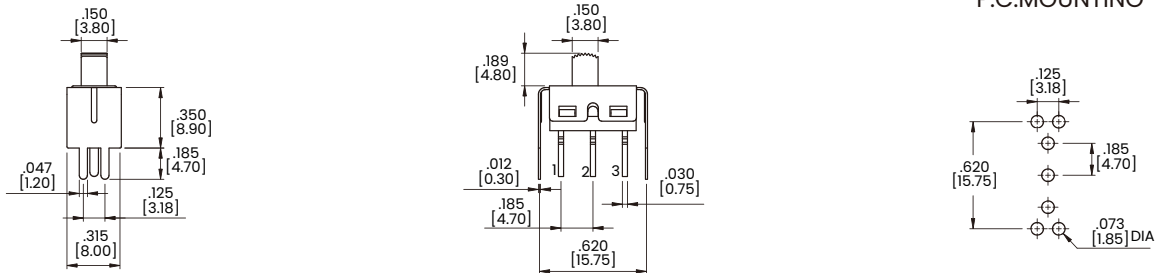
inches [millimeters]

Termination Options

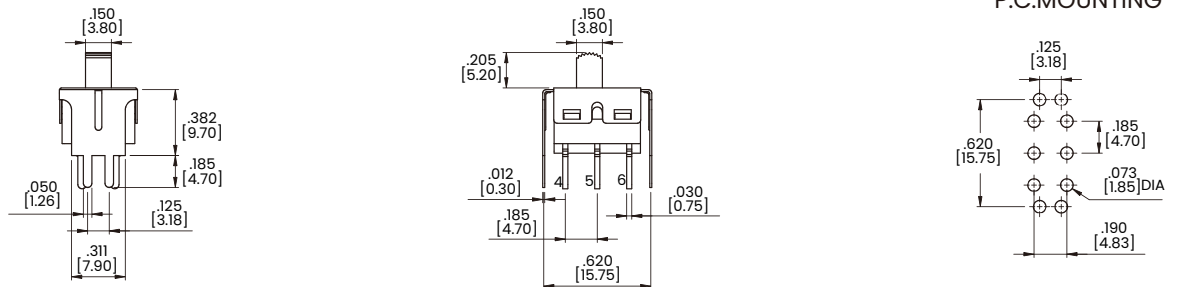
M7 Double Pole



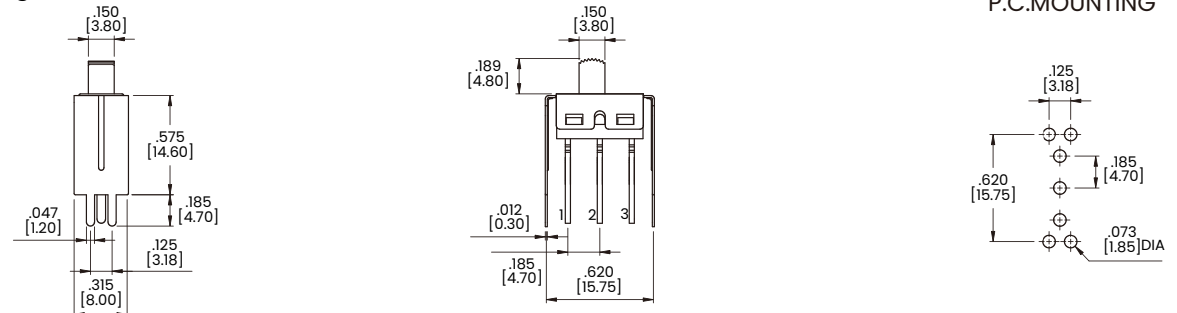
VS2 Single Pole



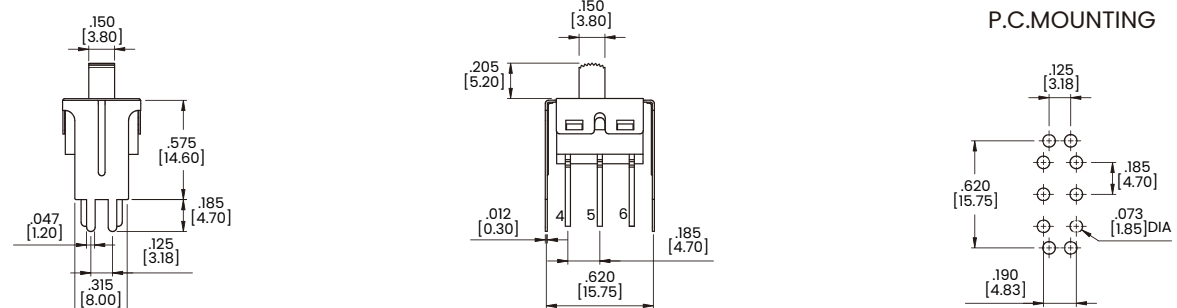
VS2 Double Pole



VS3 Single Pole



VS3 Double Pole



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Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With six ISO9001 and IATF16949 registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit www.carlingtech.com/company-profile.

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



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