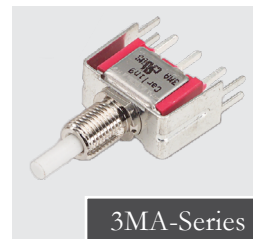


3M-Series

MINIATURE PUSHBUTTONS

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



Product Highlights:

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

Typical Applications:

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

Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)



Carling Technologies®

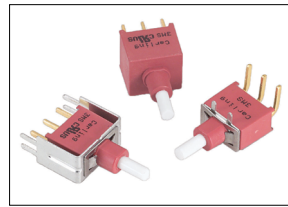
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60 Johnson Avenue, Plainville, CT 06062
Email: sales@carlingtech.com
Application Support: team2@carlingtech.com
Phone: 860.793.9281 Fax: 860.793.9231

www.carlingtech.com



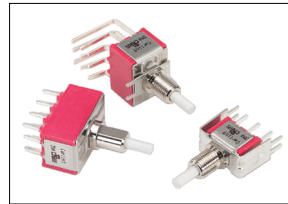
3MNH-Series
Premium Sealed
Miniature Pushbutton Switch



3MS-Series
Sealed Snap-Action
Miniature Pushbutton Switch



3MN-Series
Snap-Action
Miniature Pushbutton Switch



3MA-Series
Alternate Action
Miniature Pushbutton Switch

Electrical

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

Physical

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

Material

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

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



1 SERIES

3MNH Premium Sealed Miniature Pushbutton Switch

2 POLES

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

3 CIRCUIT

() - momentary

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

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

4 PLUNGER 1

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

5 BUSHING 2

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

6 TERMINATION

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

7 CONTACTS / TERMINALS

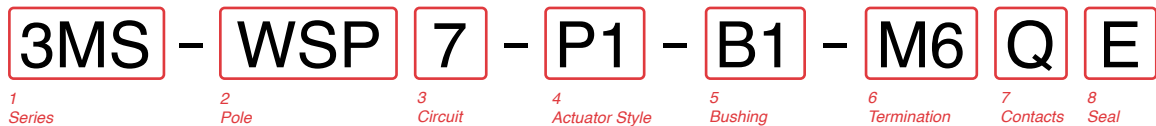
	Contact Material	Terminal Plating	Rating	Approvals
G	silver ⁵	gold over silver	(SP1, DP1) 6A@125VAC or 28VDC 3A@250VAC (SP7, DP7) 1A@120VAC or 38VDC	c us, IP67
Q	silver ⁵	silver ⁵	(SP1, DP1) 6A@125VAC or 28VDC 3A@250VAC (SP7, DP7) 1A@120VAC or 38VDC	c us, IP67
R	gold ⁶	gold ⁷	0.4VA max @ 20V max (AC/DC)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

8 EPOXY SEAL

E Epoxy Seal

Notes:

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



1 SERIES

3MS Sealed Snap-Action Miniature Pushbutton Switch

2 POLES

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

3 CIRCUIT

() - momentary

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

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

4 ACTUATOR STYLE

P1 Standard Plunger
P2 Long Plunger
P3 Short Plunger

5 BUSHING

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

6 TERMINATION

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

7 CONTACTS / TERMINALS

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

8 EPOXY SEAL

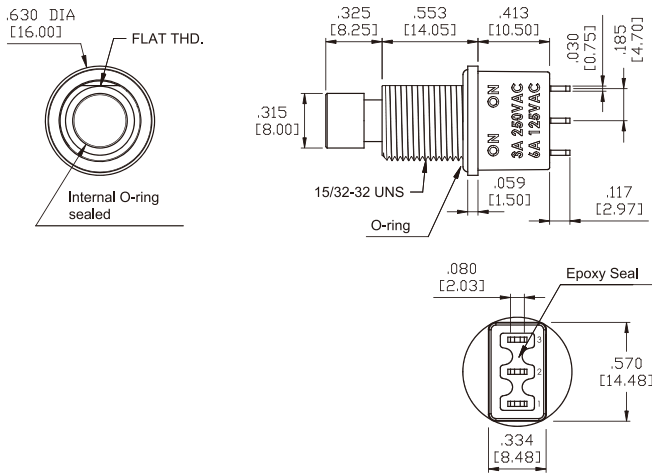
E Epoxy Seal 0 without Epoxy Seal

Notes:

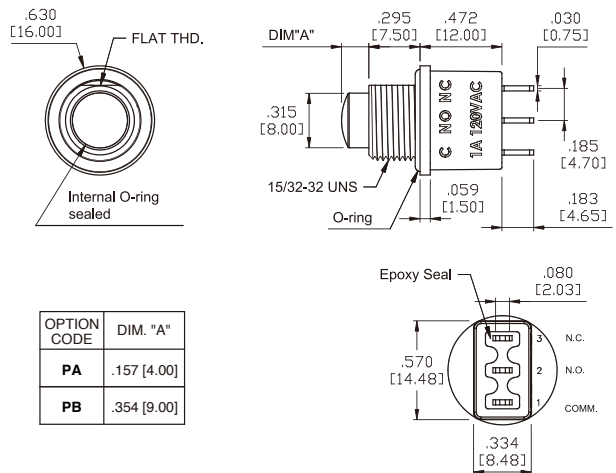
- 1 Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
- 2 Movable contact and terminal platings: gold over nickel over copper alloy
- 3 Movable contact and terminal platings: silver over copper alloy

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

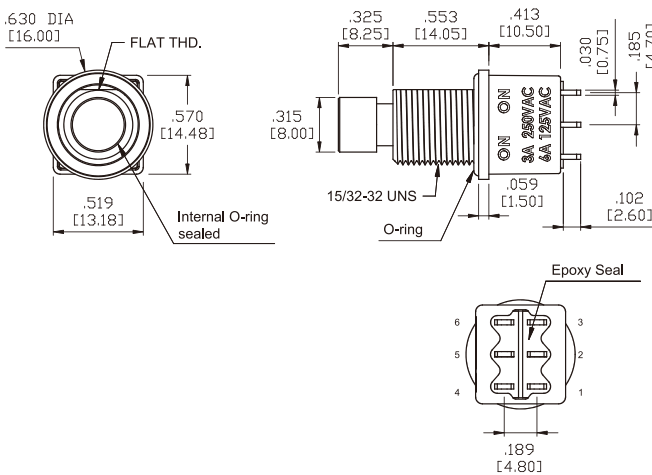
Single Pole Maintained Circuit



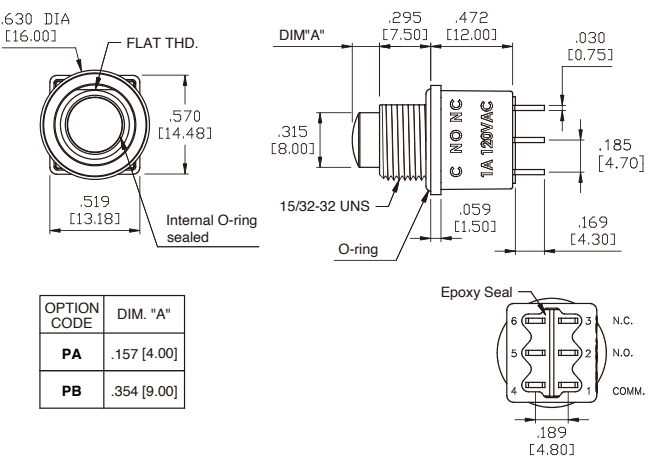
Single Pole Momentary Circuit



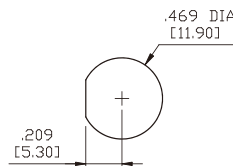
Double Pole Maintained Circuit



Double Pole Momentary Circuit

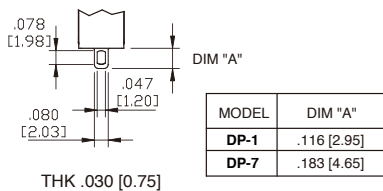


Panel Mounting



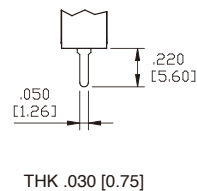
15/32-32 UNS FLAT-CUT THREADED BUSHING

M1 Standard Solder Lug

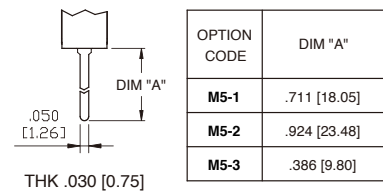


Termination Options

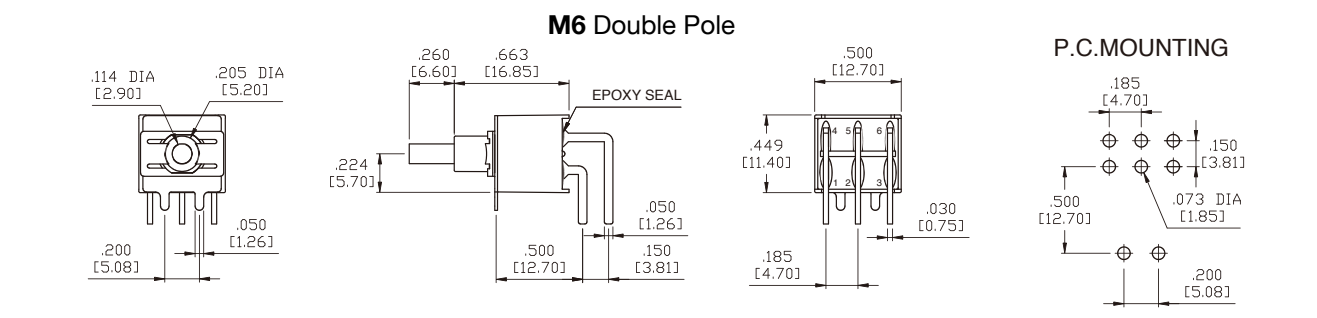
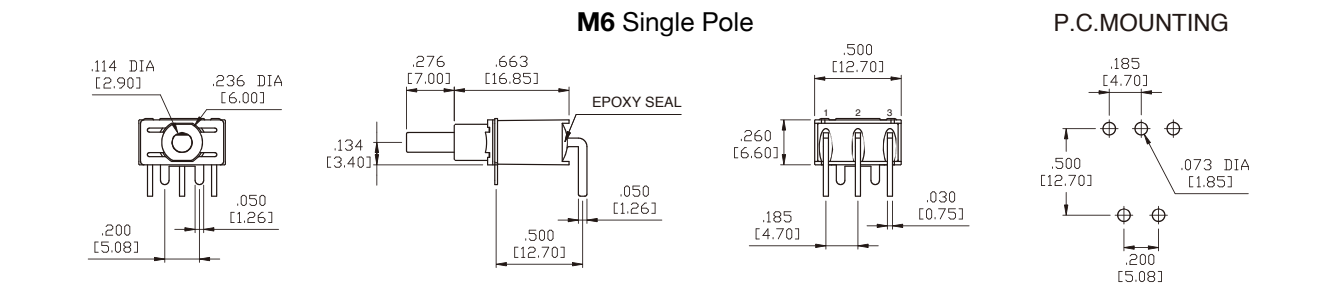
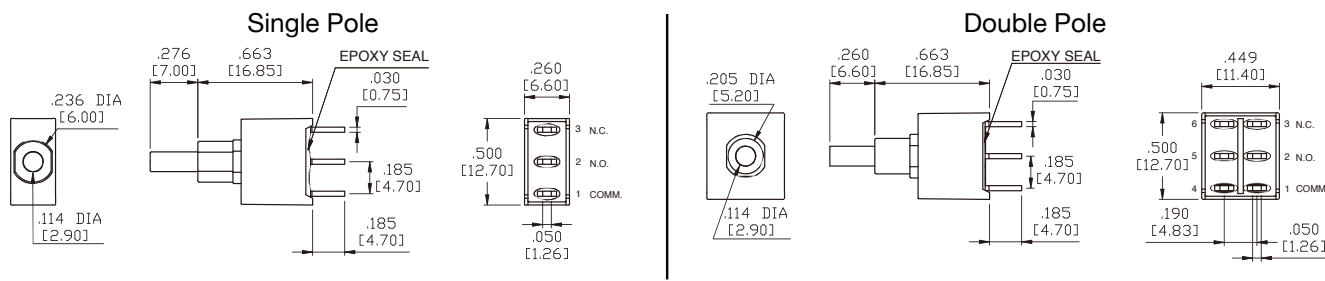
M2 PC Thru-Hole



M5 Wire Wrap

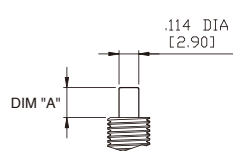


3MS-Series Dimensional Specifications: in. [mm]



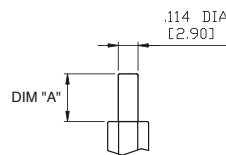
Plunger Options

For B1 Bushing



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

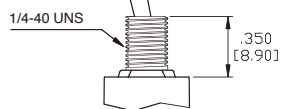
For B4 Bushing



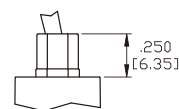
OPTION CODE	DIM. "A"
P1	.276 [7.00]
P2	.323 [8.20]
P3	.181 [4.60]

Bushing Options

B1



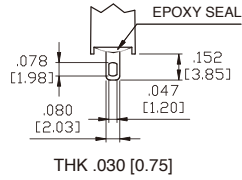
B4



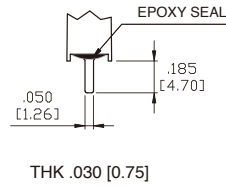
3MS-Series Dimensional Specifications: in. [mm]

Termination Options

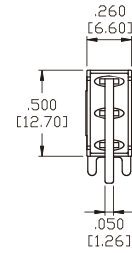
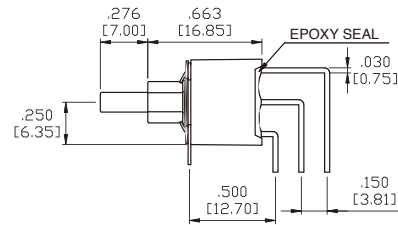
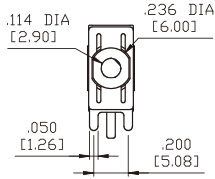
M1



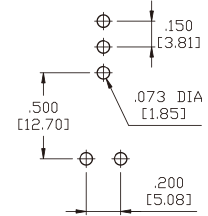
M2



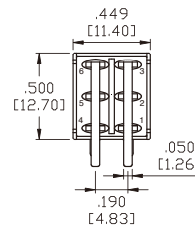
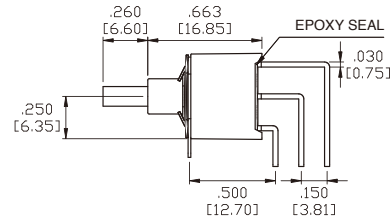
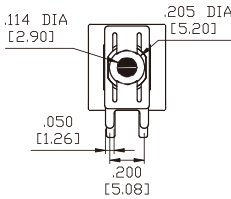
M7 Single Pole



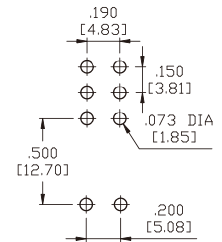
P.C.MOUNTING



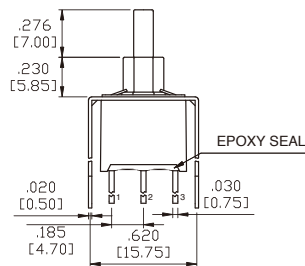
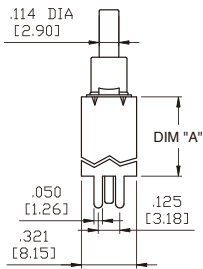
M7 Double Pole



P.C.MOUNTING

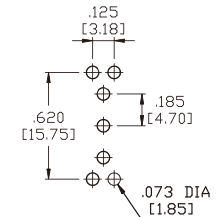


VS2-VS3 Single Pole

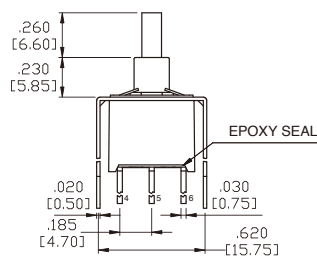
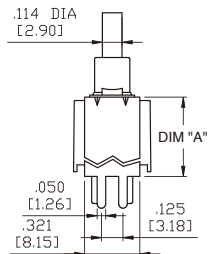


OPTION CODE	DIM. 'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

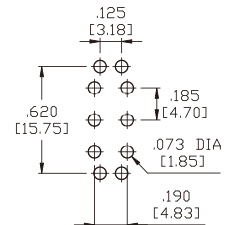


VS2-VS3 Double Pole



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

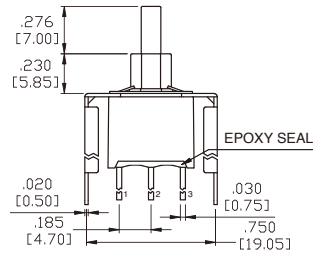
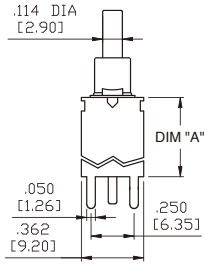
P.C.MOUNTING



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

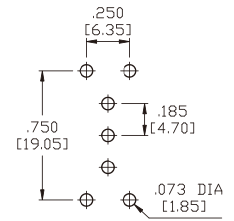
Termination Options

VS4-VS5 Single Pole

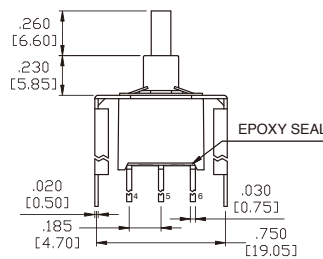
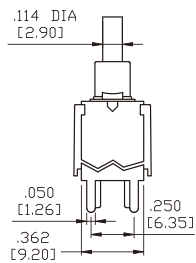


OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C. MOUNTING

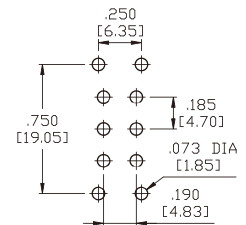


VS4-VS5 Double Pole



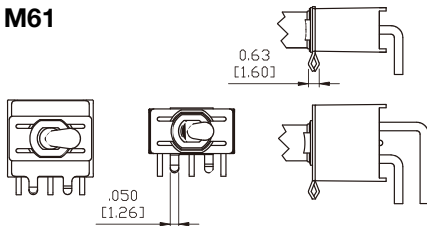
OPTION CODE	DIM. 'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C. MOUNTING

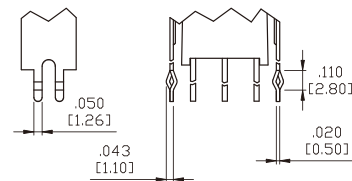


Snap-In Termination Options

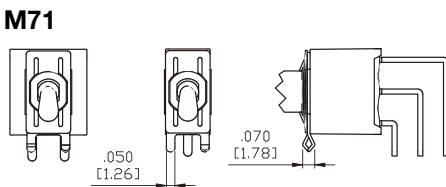
M61



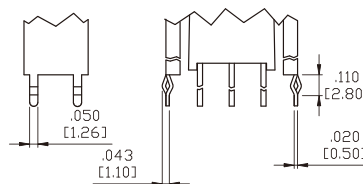
VS21, VS31



M71

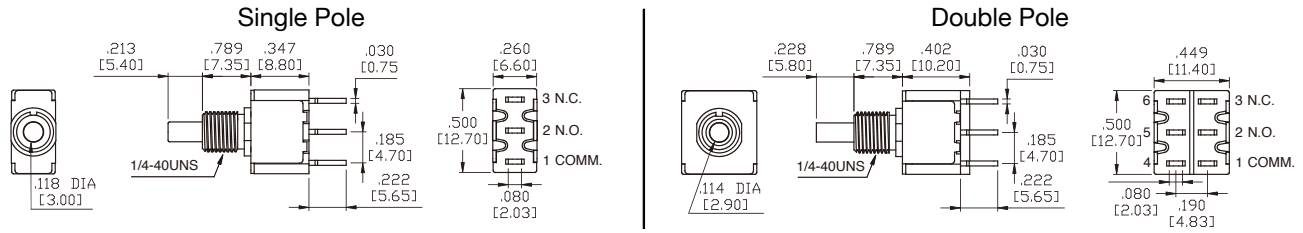


VS41, VS51



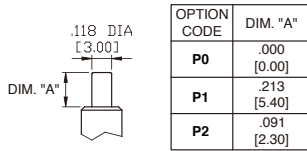
* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

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

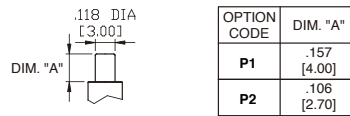


Plunger Options

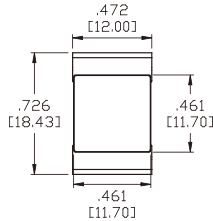
For B1, B2, B3, B4 Bushing



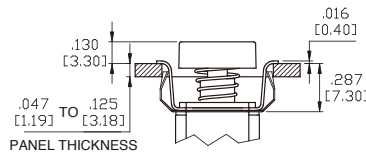
For B6 Bushing



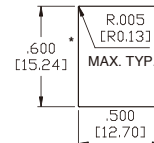
AP1



Actuator Options for Snap-In Front Mount

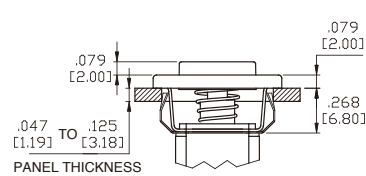
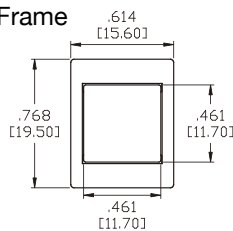


PANEL MOUNTING

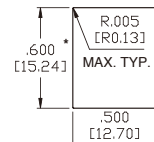


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP2 with Frame

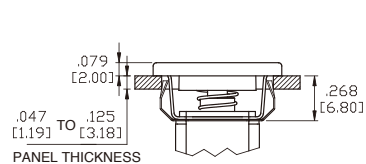
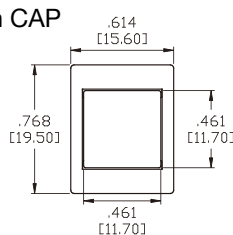


PANEL MOUNTING

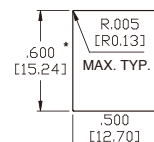


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP3 Flush CAP



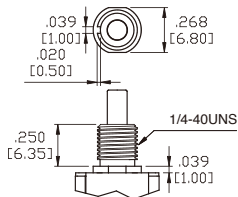
PANEL MOUNTING



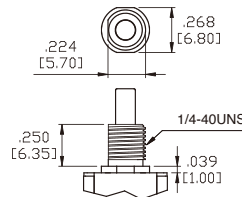
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

Bushing Options

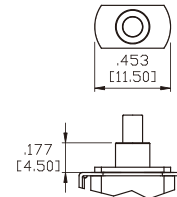
B1 Threaded Standard
B2 Non-Threaded



B3 Threaded Standard
B4 Non-Threaded



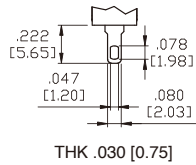
B6 Non-Threaded
(FOR TERMINATION OPTIONS VS6-VS9 ONLY)



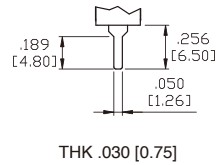
3MN-Series Dimensional Specifications: in. [mm]

Termination Options

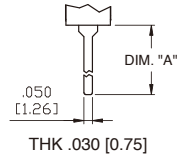
M1 Standard Solder Lug



M2 PC Thru-Hole

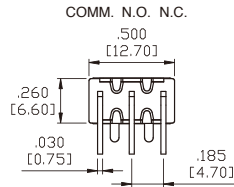
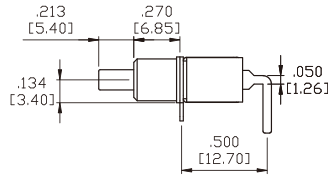
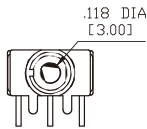


M5 Wire Wrap

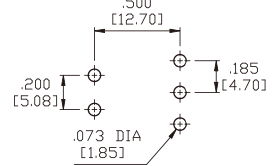


OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]

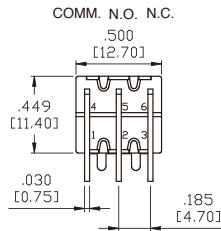
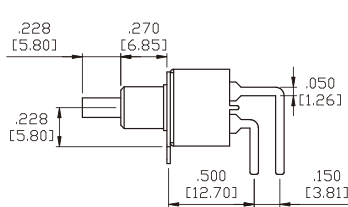
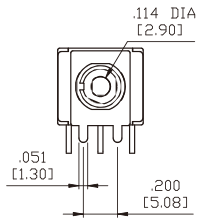
M6 Single Pole



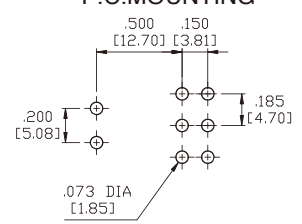
P.C.MOUNTING



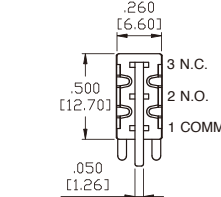
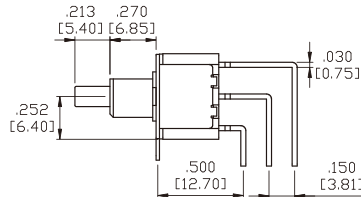
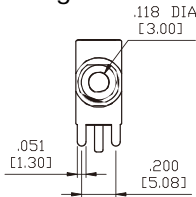
M6 Double Pole



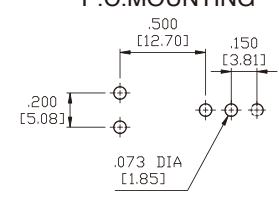
P.C.MOUNTING



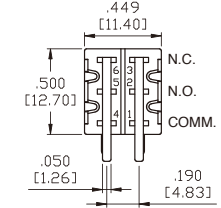
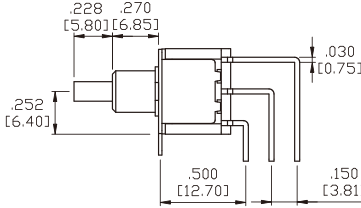
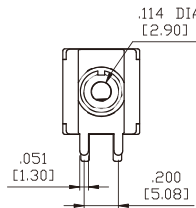
M7 Single Pole



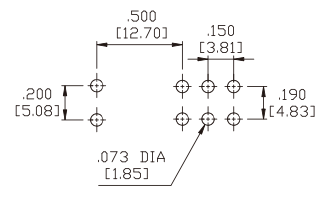
P.C.MOUNTING



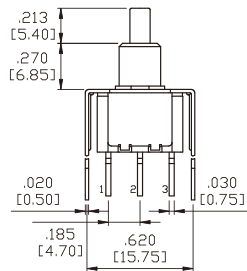
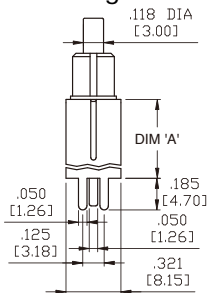
M7 Double Pole



P.C.MOUNTING

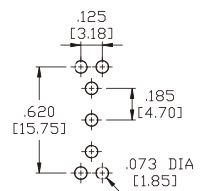


VS2-VS3 Single Pole



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

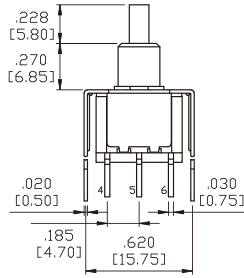
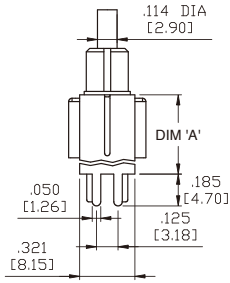
P.C.MOUNTING



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

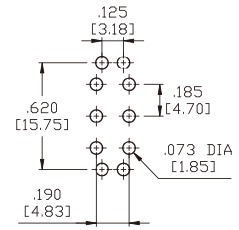
Termination Options

VS2-VS3 Double Pole

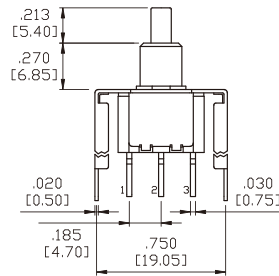
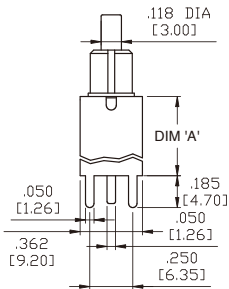


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

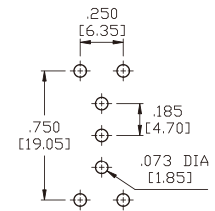


VS4-VS5 Single Pole

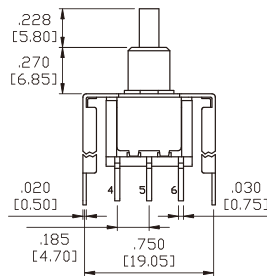
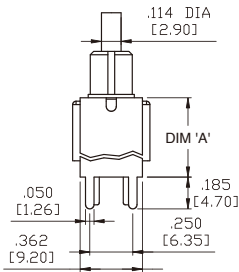


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

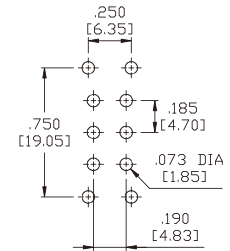


VS4-VS5 Double Pole



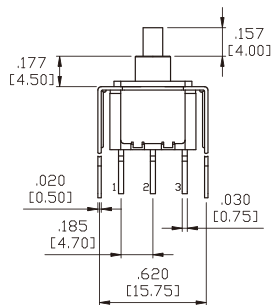
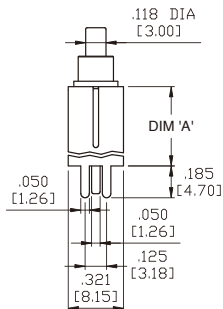
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING



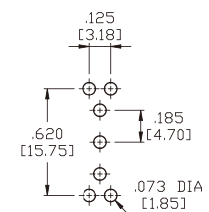
VS6-VS7 Single Pole

(FOR B6 BUSHING ONLY)



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

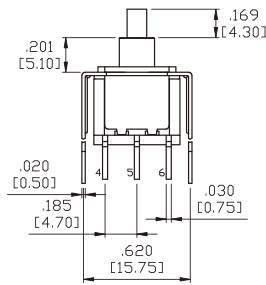
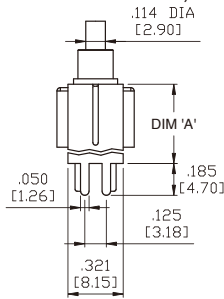
P.C.MOUNTING



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

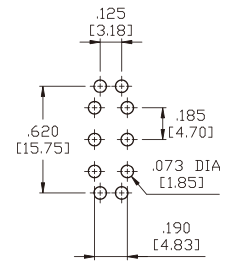
Termination Options

VS6-VS7 Double Pole (FOR B6 BUSHING ONLY)

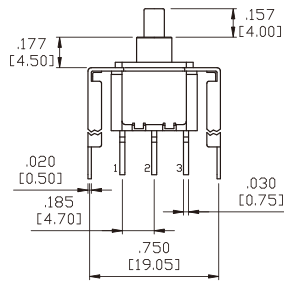
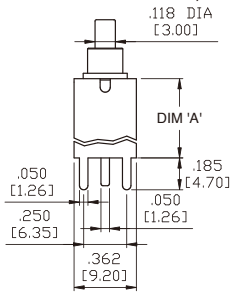


OPTION CODE	DIM: 'A'
VS6	.461 [11.70]
VS7	.630 [16.00]

P.C.MOUNTING

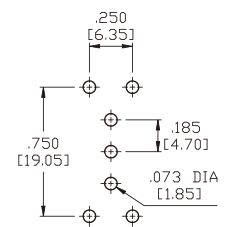


VS8-VS9 Single Pole (FOR B6 BUSHING ONLY)

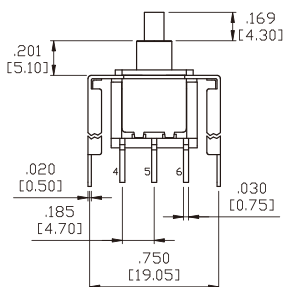
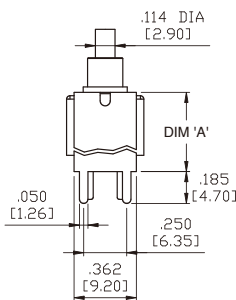


OPTION CODE	DIM: 'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

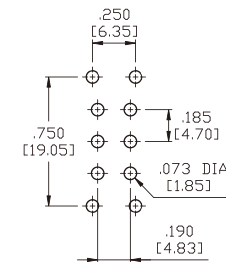


VS8-VS9 Double Pole (FOR B6 BUSHING ONLY)



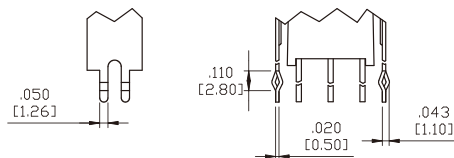
OPTION CODE	DIM: 'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

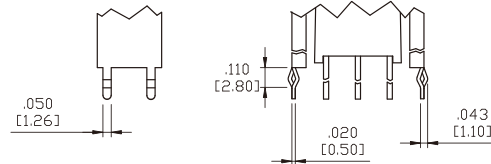


Snap-In Termination Options

VS21, VS31

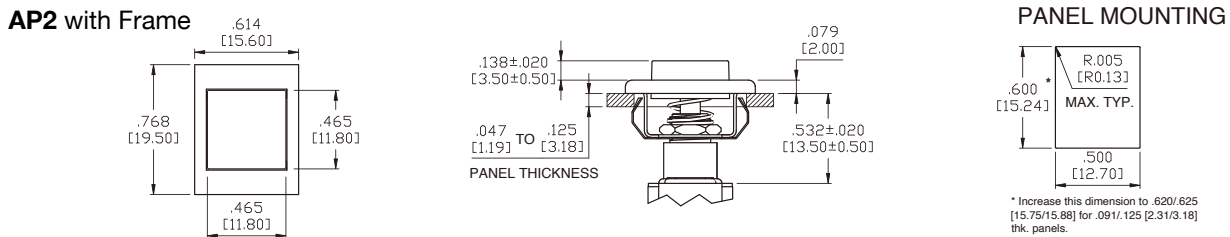
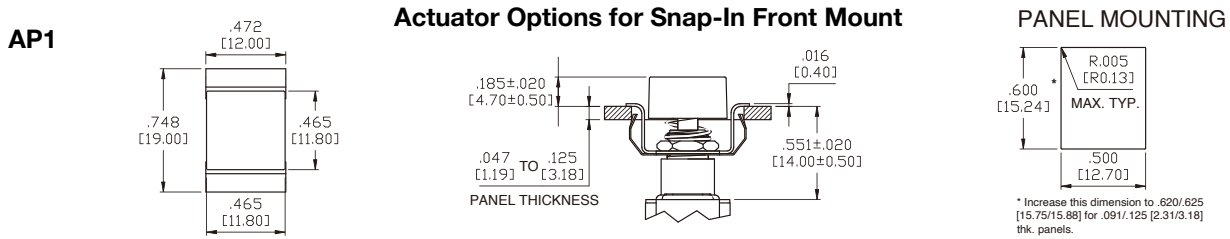
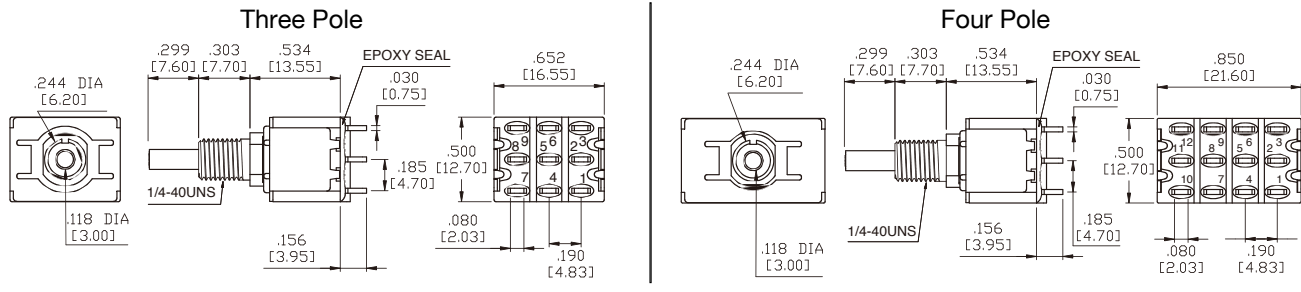
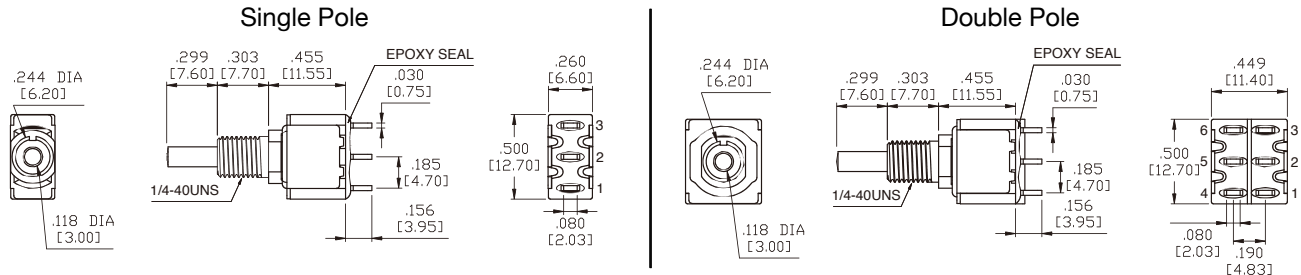


VS41, VS51

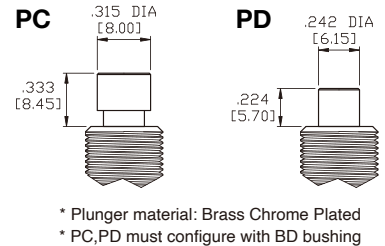
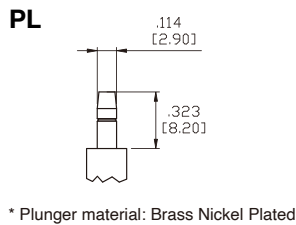
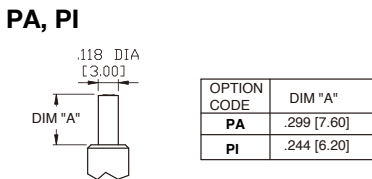


* PC Mounting for VS21, VS31, VS41, VS51 refer to VS2, VS3, VS4, VS5 respectively.

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

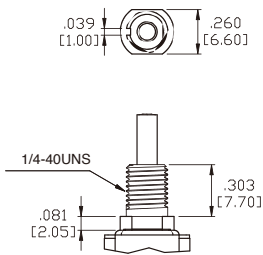


Plunger Options



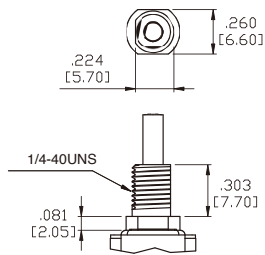
3MA-Series Dimensional Specifications: in. [mm]

B10 Threaded Standard
B20 Non-Threaded

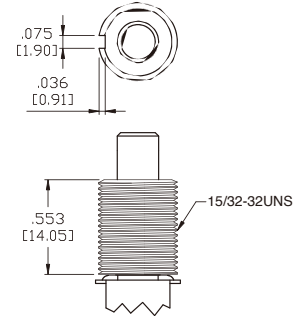


Bushing Options

B21 Non-Threaded

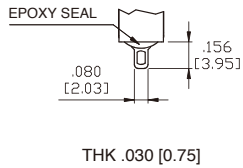


BD Threaded Standard

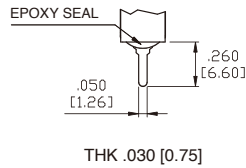


Termination Options

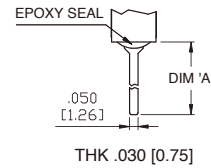
M1 Standard Solder Lug



M2 PC Thru-Hole

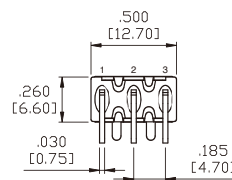
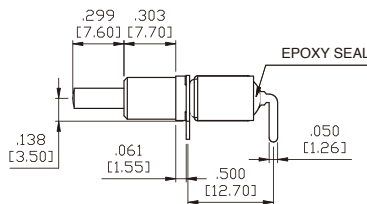
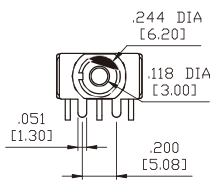


M5 Wire Wrap

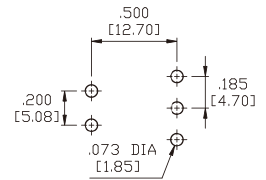


OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

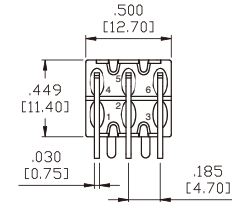
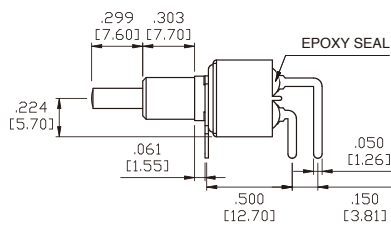
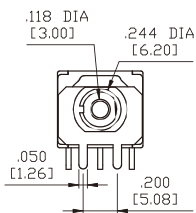
M6 Single Pole



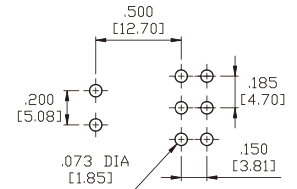
P.C.MOUNTING



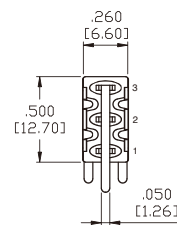
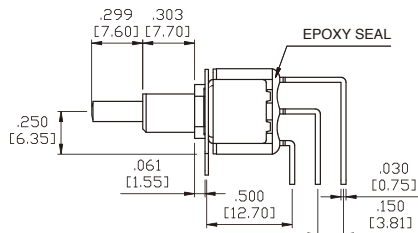
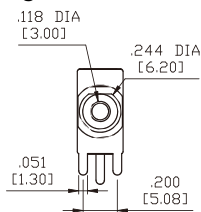
M6 Double Pole



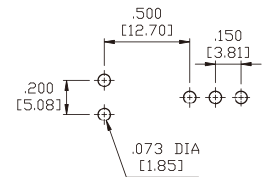
P.C.MOUNTING



M7 Single Pole



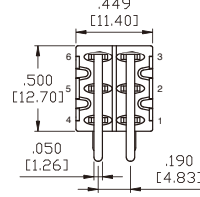
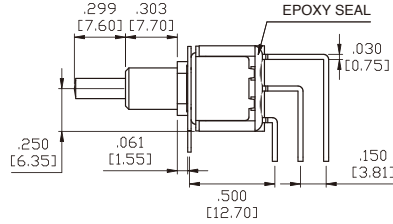
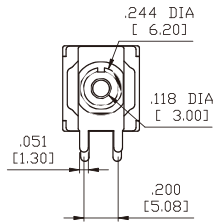
P.C.MOUNTING



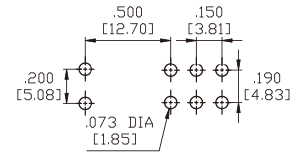
3MA-Series Dimensional Specifications: in. [mm]

Termination Options

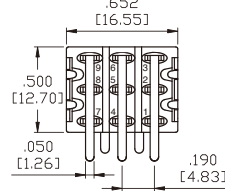
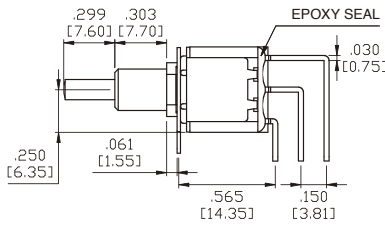
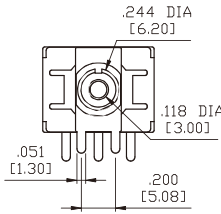
M7 Double Pole



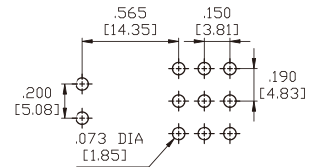
P.C.MOUNTING



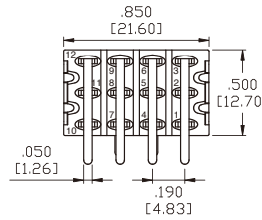
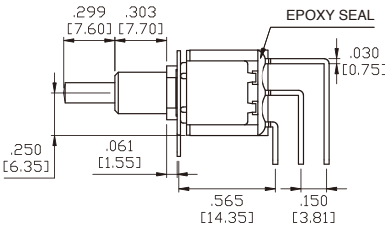
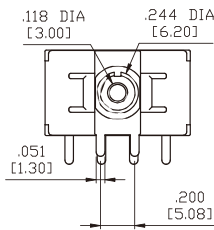
M7 Three Pole



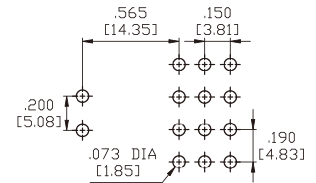
P.C.MOUNTING



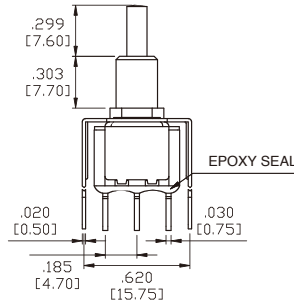
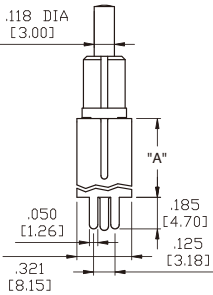
M7 Four Pole



P.C.MOUNTING

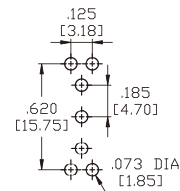


VS2-VS3 Single Pole

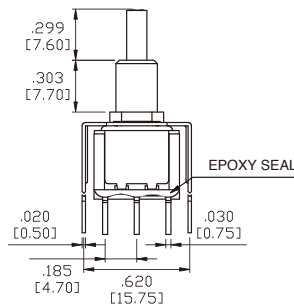
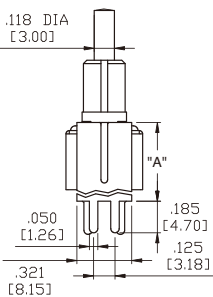


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

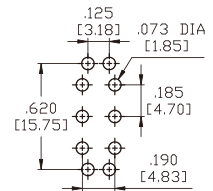


VS2-VS3 Double Pole



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

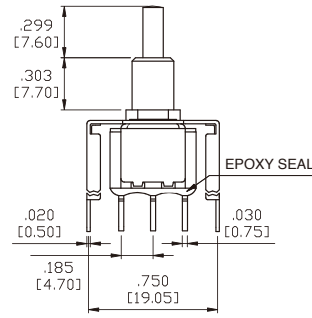
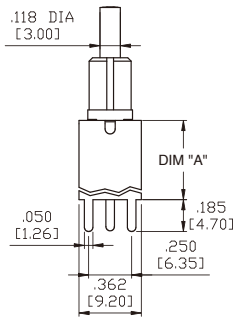
P.C.MOUNTING



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

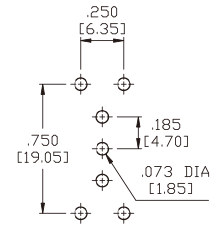
Termination Options

VS4-VS5 Single Pole

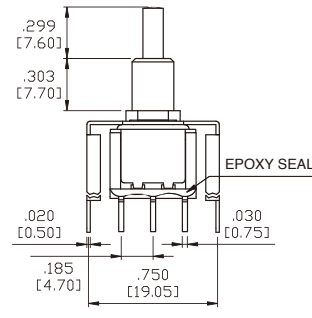
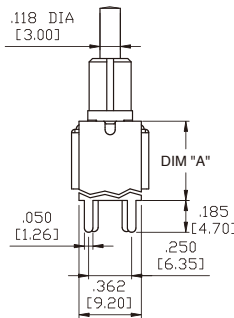


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

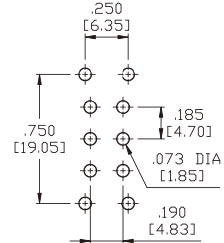


VS4-VS5 Double Pole



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

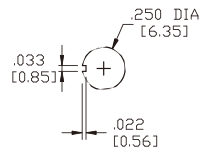
P.C.MOUNTING



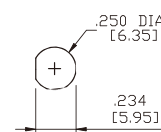
Panel Mounting

1/4 INCH BUSHING

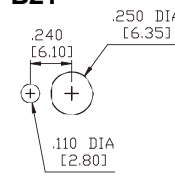
B10



B20

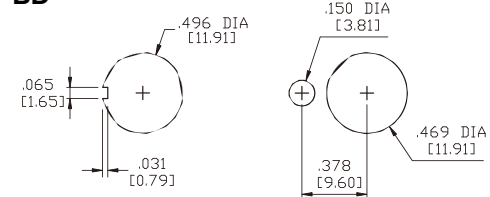


B21



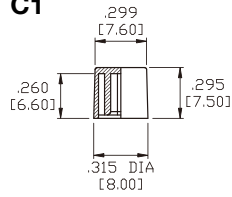
15/32 INCH BUSHING

BD

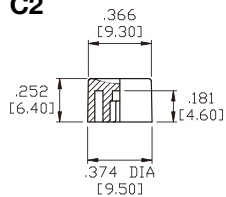


Plunger Caps

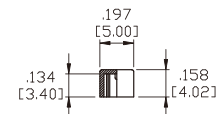
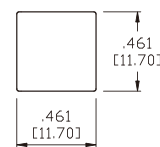
C1



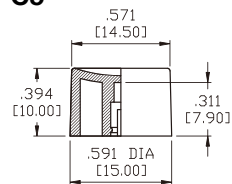
C2



C3

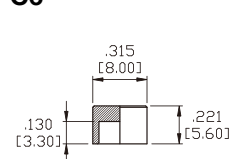


C5



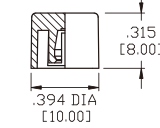
For PL plunger only

C6



For PD plunger only

C7



For PL plunger only

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

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

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Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With four 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.

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