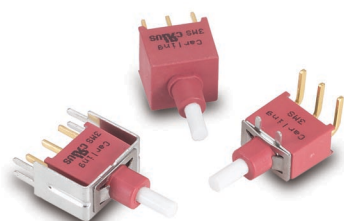
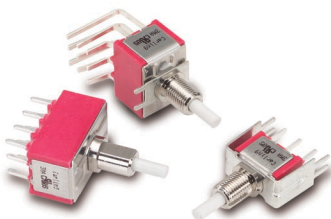




**3MN-Series**  
**Snap-Action** Miniature  
Pushbutton Switch



**3MS-Series**  
**Sealed Snap-Action**  
Miniature Pushbutton  
Switch



**3MA-Series**  
**Alternate Action**  
Miniature Pushbutton  
Switch

### Specifications

Contact Rating . . . . .	refer to ordering scheme
Electrical Life . . . . .	50,000 make & break cycles @ full load
Contact Resistance. . . . .	<b>3MN &amp; 3MA-Series:</b> 10 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts. <b>3MS-Series:</b> 50 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts.
Insulation Resistance . . .	1000 MΩ min.
Dielectric Strength . . . . .	1500 Volts RMS @ sea level
Operating Temperature . . .	-30°C to +85°C
Index of Protection . . . . .	<b>3MS -Series:</b> IP68
Cap Installation Support . .	<b>3MS-Series:</b> 10 lbs. max.
Solder Heat Resistance. . .	MIL-STD-202, Method 210
Actuator Travel . . . . .	25°

### Materials

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

### 3M-Series Optional Cap

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



#### 1 SERIES OR SWITCH CATALOG NUMBER 3MN, 3MS or 3MA

#### 2 CAP SIZE

<b>C1</b>	round 7.6mm dia.	<b>C5</b>	round 14.5mm dia. (for 3MA w/ PL bushing)
<b>C2</b>	round 9.35 mm dia.	<b>C6</b>	brass chrome plated (for 3MA w/ PD bushing)
<b>C3</b>	square 11.7 x 11.7mm		
<b>C4</b>	round 5mm dia.		

#### 3 CAP COLOR

<b>1</b>	white	<b>5</b>	yellow
<b>2</b>	black	<b>6</b>	green
<b>3</b>	red	<b>7</b>	blue
<b>4</b>	orange		

1 Black, white & red standard. Other colors available. Consult factory.

**3MN-Series Ordering Scheme**
**with Square Actuator**

**with Plunger Actuator**

**1 SERIES**
**3MN** Snap-Action Miniature Pushbutton Switch

**2 POLES**
**SP** single pole **DP** double pole

**3 CIRCUIT**

( ) - momentary

**7** ON (ON)

**4 ACTUATOR<sup>1</sup>**
**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** 2.5mm short plunger(for B6 bushing only)  
**P1** 5.2mm plunger(for bushing B10,B11,B20,B21; 7.5mm for B6)  
**P2** 2.0mm plunger(for bushing B10,B11,B20,B21; 4.2mm for B6)

**5A ACTUATOR COLOR & 5B FRAME COLOR<sup>1,2</sup>**

<b>1</b> white	<b>4</b> orange	<b>7</b> blue
<b>2</b> black	<b>5</b> yellow	<b>8</b> brown
<b>3</b> red	<b>6</b> green	<b>9</b> gray

1 Black, white and red are standard. Other colors available, consult factory for details.  
 2 Selection 5B is blank if actuator style is AP1 (no frame)

**OR**
**5 BUSHING**
**B6** Unthreaded (for terminations VS6-VS9 only)  
**B10** Threaded keyway  
**B11** Threaded with flat  
**B20** Unthreaded keyway  
**B21** Unthreaded with flat

**NOTE:**

 If ordering optional CAP with bushings B10, B11, B20 or B21, specify actuator P1.  
 For CAP with bushing B6, specify actuator P2.  
 For CAP options, see ordering scheme on page 35.

**6 TERMINATION**

<b>M1</b>	Solder Lug
<b>M2</b>	PCB
<b>M5-1</b>	Wire Wrap .750 [19.05]
<b>M5-3</b>	Wire Wrap .425 [10.80]
<b>M6</b>	PC Mount, 90° horizontal
<b>M7</b>	PC Mount, 90° vertical
<b>VS2</b>	PC Mount, U bracket, .620 mounting x .460 high
<b>VS3</b>	PC Mount, U bracket, .620 mounting x .630 high
<b>VS4</b>	PC Mount, U bracket, .750 mounting x .460 high
<b>VS5</b>	PC Mount, U bracket, .750 mounting x .630 high
<b>VS6</b>	PC Mount, U bracket, .460 high (for B6 bushing only)
<b>VS7</b>	PC Mount, U bracket, .630 high (for B6 bushing only)
<b>VS8</b>	PC Mount, U bracket, .460 high (for B6 bushing only)
<b>VS9</b>	PC Mount, U bracket, .630 high (for B6 bushing only)

**7 CONTACT**

	Material	Terminal Plating	Rating	Approvals
<b>G</b>	silver <sup>1</sup>	gold over silver <sup>3</sup>	1A@120VAC or 28VDC	UL, CUL
<b>Q</b>	silver <sup>1</sup>	silver <sup>1</sup>	1A@120VAC or 28VDC	UL, CUL
<b>R</b>	gold <sup>2</sup>	gold <sup>2</sup>	0.4VA max. @20V max (AC/DC)	

**NOTE:**

Tin-lead option available with PC type terminations only.

1 Moveable contact & terminals: copper alloy, silver plate  
 2 Moveable contact & terminals: copper alloy with gold plate over nickel plate  
 3 Terminals: silver plate with outer layer in gold plating

**8 EPOXY SEAL**
**E** epoxy seal

**3MS-Series Ordering Scheme**

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

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

1 SERIES

3MS Sealed Snap-Action Miniature Pushbutton Switch

2 POLES

WSP single pole

WDP double pole

3 CIRCUIT

( ) - momentary

7 ON (ON)

4 ACTUATOR

P1 .173" plunger (for B1 bushing); .276" (for B4 bushing)

P2 .220" plunger (for B1 bushing); .327" (for B4 bushing)

P3 .087" plunger (for B1 bushing); .193" (for B4 bushing)

5 BUSHING

B1 Threaded

B4 Unthreaded

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 .460 high

VS21 Snap-In, U bracket, .620 mounting x .460 high

VS3 PC Mount, U bracket, .620 mounting x .630 high

VS4 PC Mount, U bracket, .750 mounting x .460 high

VS5 PC Mount, U bracket, .750 mounting x .630 high

7 CONTACT

	Material	Terminal Plating	Rating	Approvals
G	silver <sup>1</sup>	gold over silver <sup>3</sup>	1A@120VAC or 28VDC	UL, CUL IP68
Q	silver <sup>1</sup>	silver <sup>1</sup>	1A@120VAC or 28VDC	UL, CUL IP68
R	gold <sup>2</sup>	gold <sup>2</sup>	0.4VA max. @20V max (AC/DC)	IP68

NOTE:

Tin-lead option available with PC type terminations only.

1 Moveable contact & terminals: copper alloy, silver plate

2 Moveable contact & terminals: copper alloy with gold plate over nickel plate

3 Terminals: silver plate with outer layer in gold plating

7 EPOXY SEAL

E epoxy seal

**3MA-Series Ordering Scheme**

with Square Actuator **3MA** - **SP** - **1** - **AP2** / **3** **2** - **M6** **Q** **E**

1 Series      2 Poles      3 Circuit      4 Actuator      5A Actuator Color      5B Frame Color      6 Termination      7 Contact      8 Seal

with Plunger Actuator **3MA** - **SP** - **1** - **PD** - **BD** - **M6** **Q** **E**

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

1 SERIES

3MA Alternate-Action Miniature Pushbutton Switch

2 POLES

SP single poleDP double pole3P three pole4P four pole

3 CIRCUIT

( ) - momentary

Switching Position:

2-3, 5-6, 8-9, 11-12

OPEN

2-1, 5-4, 8-7, 11-10

ON

ON

NONE

ON

NONE

4 ACTUATOR

SQUARE ACTUATOR (use with Color Options in Selection 5A & 5B.)

AP1square with no frame

AP2square raised above frame

PLUNGER ACTUATOR (use with Bushing Options in Selection 5)

PA.118 dia. x .299" plunger length

PI.118 dia. x .244" plunger length

PL.118 dia. x .327" plunger length

PC.315" dia. brass chrome plated plunger (for BD bushing only)

PD.242" dia. brass chrome plated plunger (for BD bushing only)

5A ACTUATOR COLOR & 5B FRAME COLOR<sup>1,2</sup>

1 white

4 orange

7 blue

2 black

5 yellow

8 brown

3 red

6 green

9 gray

1 Black, red and white are standard. Other colors available, consult factory for details.

2 Selection 5B is blank if actuator style AP1 (no frame)

OR

5 BUSHING

BDBig bushing for PC, PD actuator 15/32"

B10Threaded 1/4 - 40

B20Unthreaded

B21Unthreaded with flat

NOTE: For CAP options, see ordering scheme on page 35.

6 TERMINATION

M1Solder Lug

VS2PC Mount, U bracket, .620 mounting x .460 high

M2PCB

VS3PC Mount, U bracket, .620 mounting x .630 high

M5-1Wire Wrap .750 [19.05]

VS4PC Mount, U bracket, .750 mounting x .460 high

M5-2Wire Wrap .964 [24.48]

VS5PC Mount, U bracket, .750 mounting x .630 high

M5-3Wire Wrap .425 [10.80]

M5-4Wire Wrap 1.062 [26.87]

M6PC Mount, 90° horizontal

M7PC Mount, 90° vertical

7 CONTACT

Material

Terminal Plating

Rating

Approvals

Gsilver<sup>1</sup>

gold over silver<sup>3</sup>

6A@125VAC or 28VDC, 3A@250VAC

UL, CUL

Kgold<sup>2</sup>

tin-lead<sup>4</sup>

6A@125VAC or 28VDC

Psilver<sup>1</sup>

tin-lead<sup>4</sup>

6A@125VAC or 28VDC, 3A@250VAC

UL, CUL

Qsilver<sup>1</sup>

silver<sup>1</sup>

6A@125VAC or 28VDC, 3A@250VAC

UL, CUL

Rgold<sup>2</sup>

gold<sup>2</sup>

0.4VA max. @20V max (AC/DC)

NOTE:

Tin-lead option available with PC type terminations only.

1Moveable contact & terminals: copper alloy, silver plate

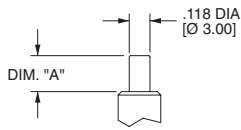
2Moveable contact & terminals: copper alloy with gold plate over nickel plate

3Terminals: silver plate with outer layer in gold plating

4Outer terminals: copper alloy with tin-lead over nickel plate

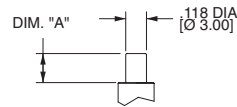
8 EPOXY SEAL

Eepoxy seal

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


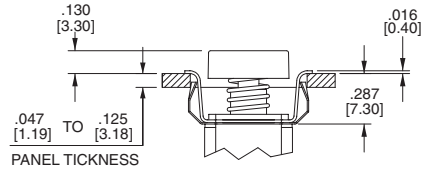
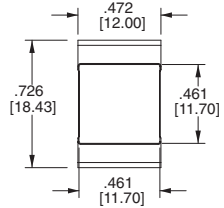
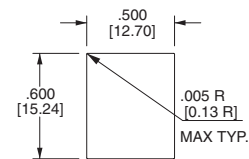
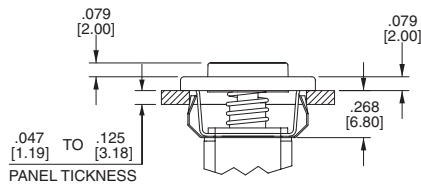
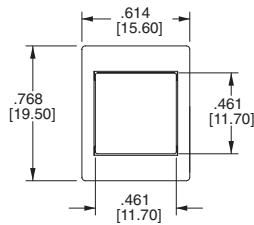
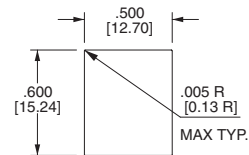
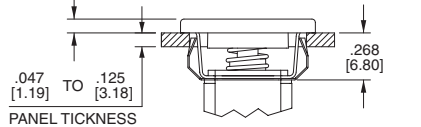
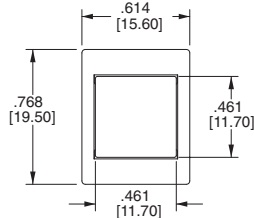
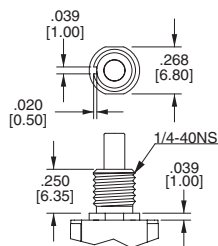
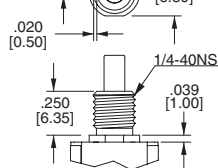
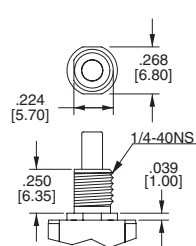
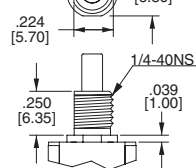
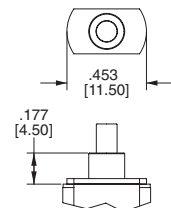
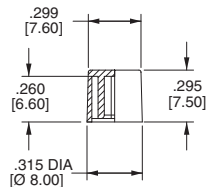
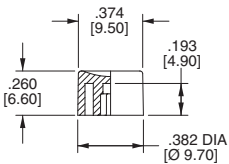
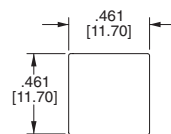
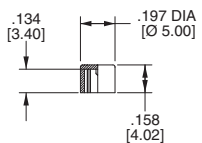
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<b>P1</b>	.205 [5.20]
<b>P2</b>	.079 [2.00]

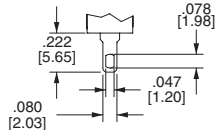
FOR B10,B11,B20,B21 ONLY



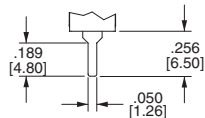
FOR B6 ONLY

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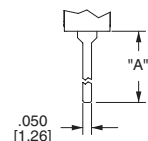
**ACTUATOR**
**AP1**

**PANEL MOUNTING**

**AP2**

**PANEL MOUNTING**

**AP3**

**BUSHING**
**B10  
STANDARD KEYWAY  
THREADED SHOWN**

**B20  
STANDARD KEYWAY  
NON-THREADED**

**B11  
THREADED SHOWN  
WITH FLAT**

**B21  
NON-THREADED  
WITH FLAT**

**B6  
NON-THREADED  
(FOR TERMINATION  
OPTIONS VS6-VS9 ONLY)**

**CAP**
**C1**

**C2**

**C3**

**C4**


**3MN-Series Dimensional Specifications: in. [mm]**
**TERMINATION**
**M1**


THK .030 [0.75]

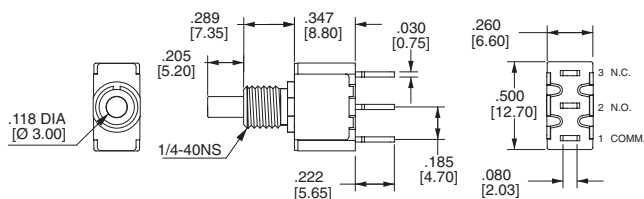
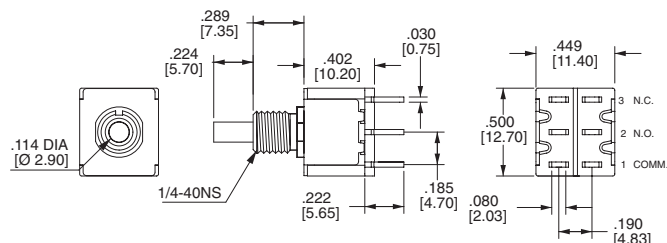
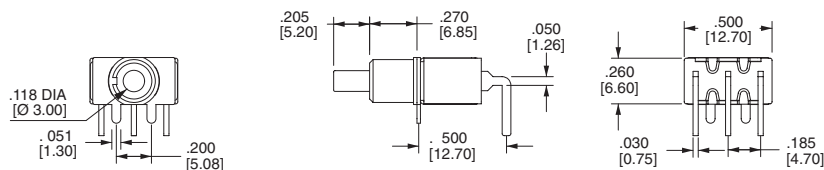
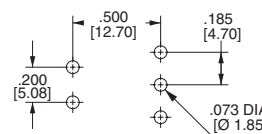
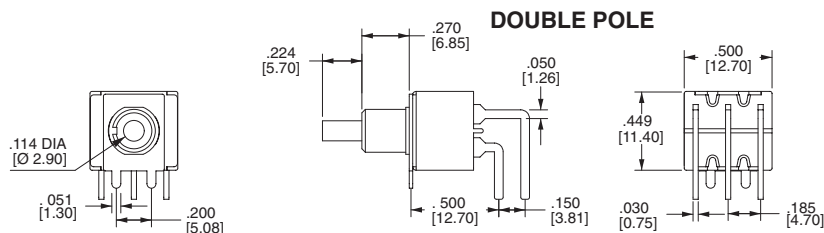
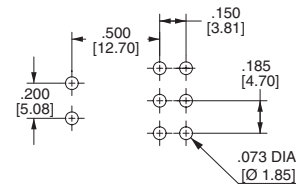
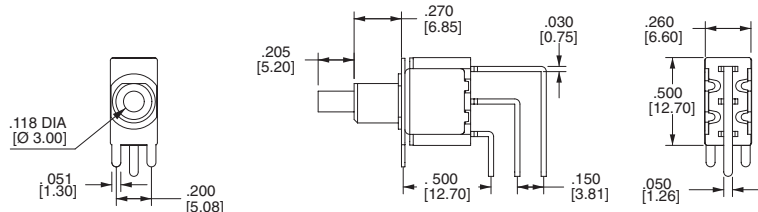
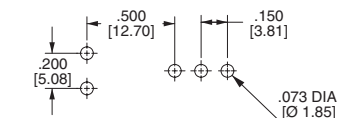
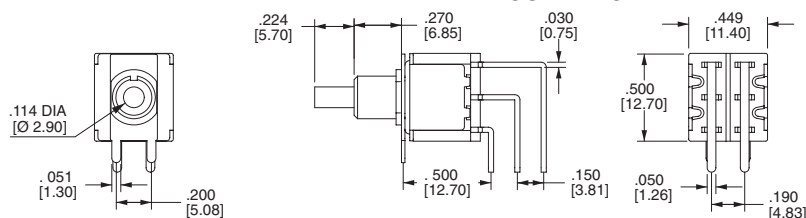
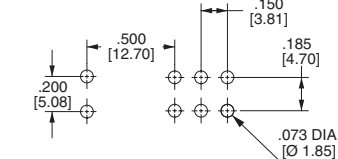
**M2**


THK .030 [0.75]

**M5**


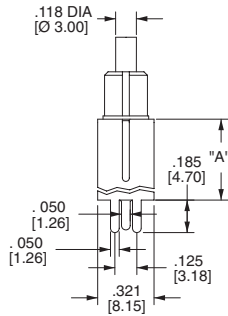
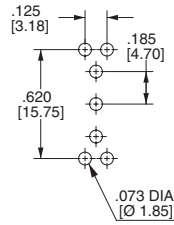
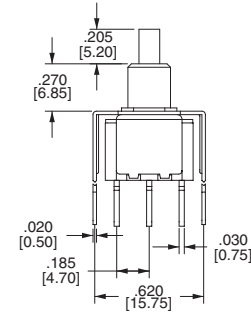
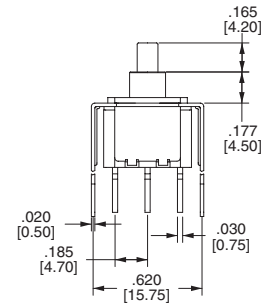
THK .030 [0.75]

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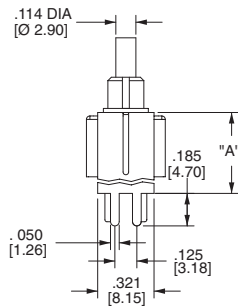
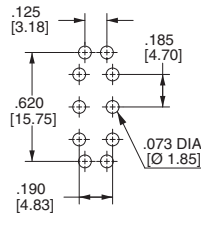
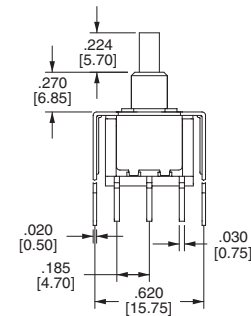
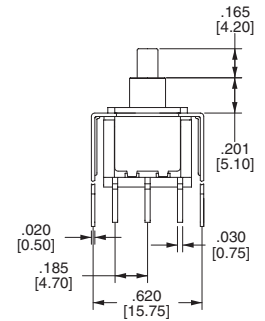
**SINGLE POLE**

**DOUBLE POLE**

**M6**
**SINGLE POLE**

**PC MOUNTING**

**DOUBLE POLE**

**PC MOUNTING**

**M7**
**SINGLE POLE**

**PC MOUNTING**

**DOUBLE POLE**

**PC MOUNTING**


**3MN-Series Dimensional Specifications: in. [mm]**
**TERMINATION**
**SINGLE POLE**

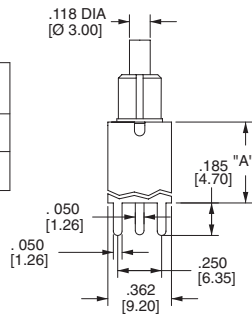
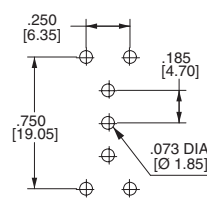
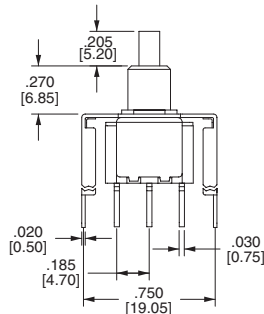
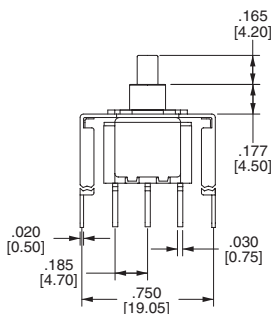
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<b>VS6</b>	.630 [16.00]
<b>VS3</b>	.630 [16.00]
<b>VS7</b>	.630 [16.00]


**PC MOUNTING**

**VS2-VS3**

**VS6-VS7  
(For B6 Bushing Only)**

**DOUBLE POLE**

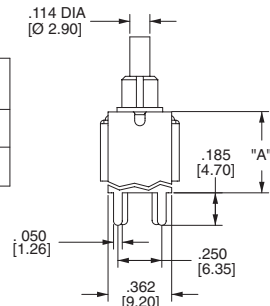
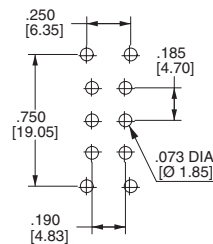
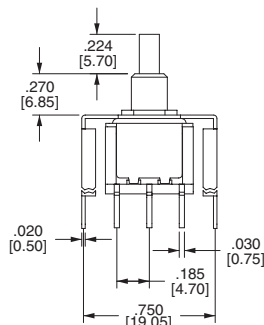
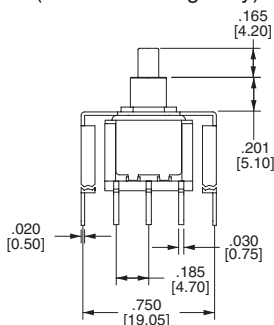
OPTION CODE	DIM. "A"
<b>VS2</b>	.460 [11.68]
<b>VS6</b>	.630 [16.00]
<b>VS3</b>	.630 [16.00]
<b>VS7</b>	.630 [16.00]

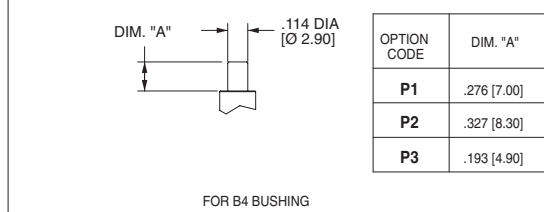
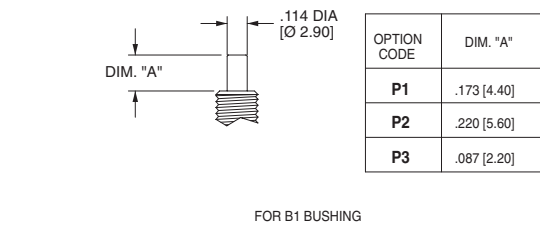
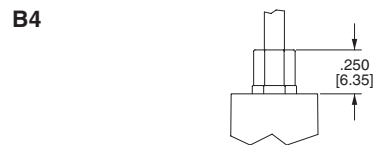
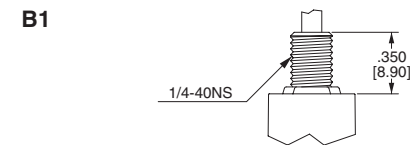
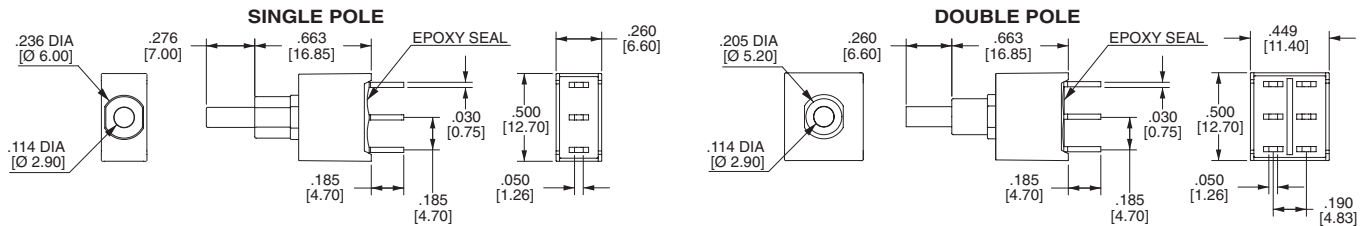
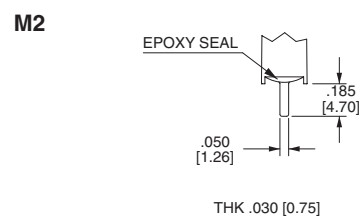
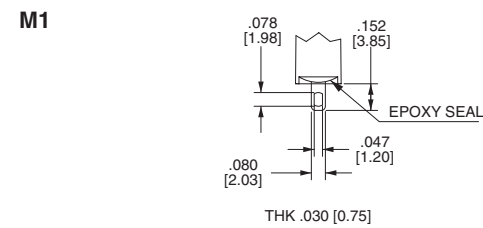
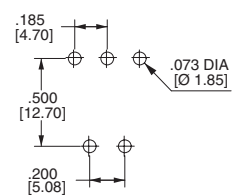
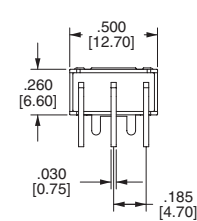
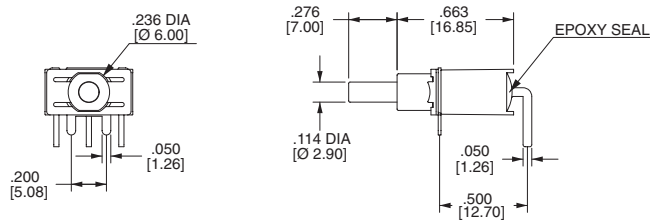
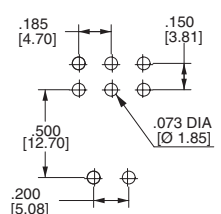
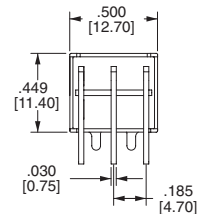
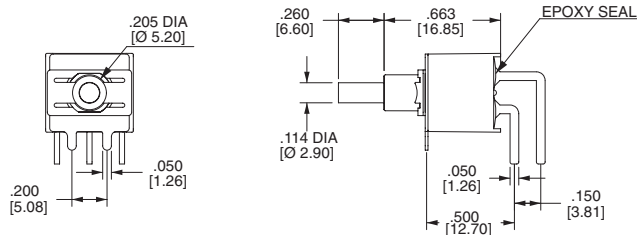

**PC MOUNTING**

**VS2-VS3**

**VS6-VS7  
(For B6 Bushing Only)**

**SINGLE POLE**

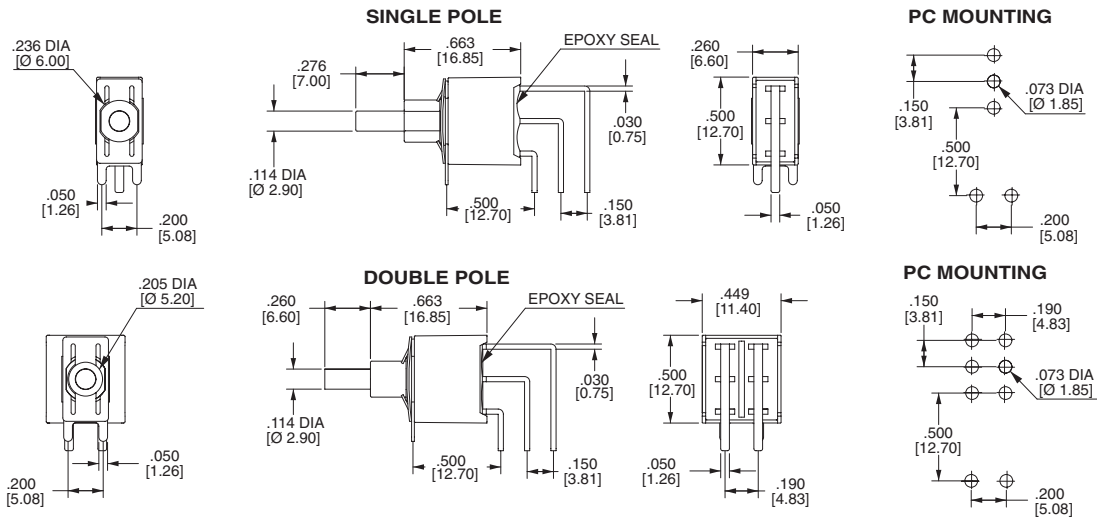
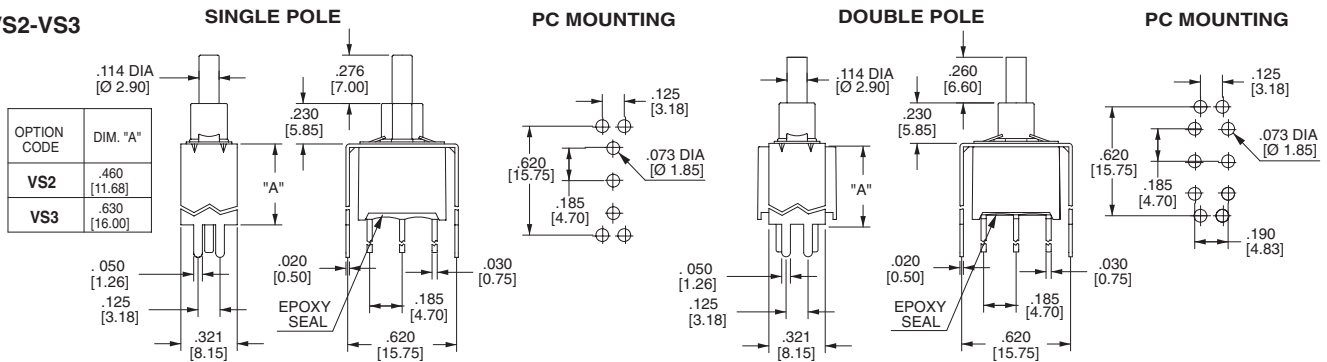
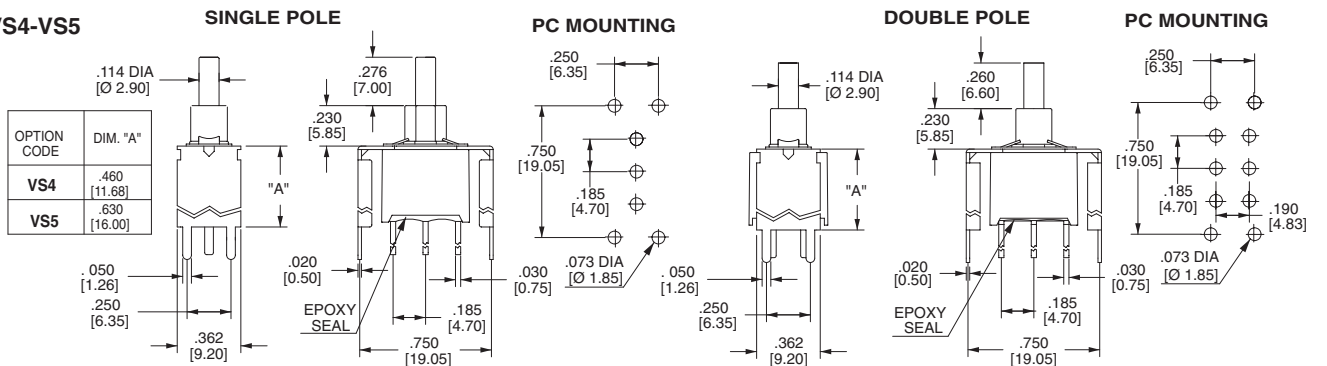
OPTION CODE	DIM. "A"
<b>VS4</b>	.460 [11.68]
<b>VS8</b>	.630 [16.00]
<b>VS5</b>	.630 [16.00]
<b>VS9</b>	.630 [16.00]

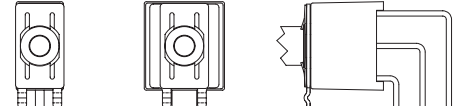
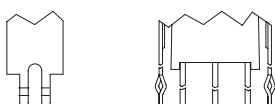
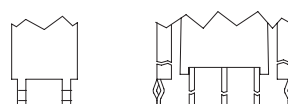

**PC MOUNTING**

**VS4-VS5**

**VS8-VS9  
(For B6 Bushing Only)**

**DOUBLE POLE**

OPTION CODE	DIM. "A"
<b>VS4</b>	.460 [11.68]
<b>VS8</b>	.630 [16.00]
<b>VS5</b>	.630 [16.00]
<b>VS9</b>	.630 [16.00]


**PC MOUNTING**

**VS4-VS5**

**VS8-VS9  
(For B6 Bushing Only)**


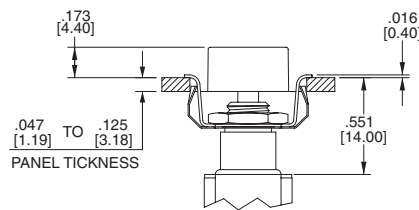
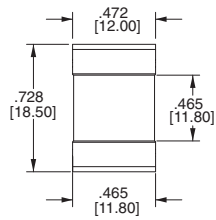
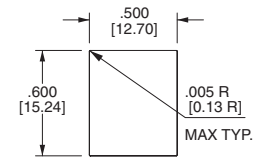
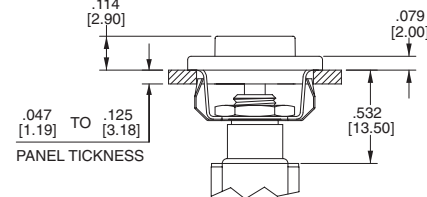
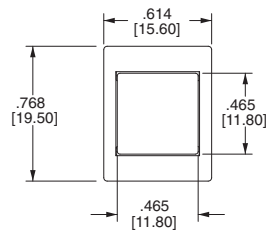
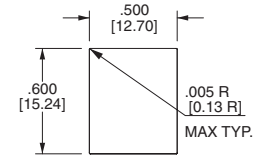
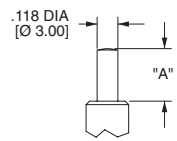
**3MS-Series Dimensional Specifications: in. [mm]**
**PLUNGER**

**BUSHING**

**TERMINATION**

**M6**
**SINGLE POLE**
**PC MOUNTING**

**DOUBLE POLE**
**PC MOUNTING**


**3MS-Series Dimensional Specifications: in. [mm]**
**TERMINATION**
**M7**

**VS2-VS3**

**VS4-VS5**

**SNAP-IN TERMINATION OPTIONS**
**M61**

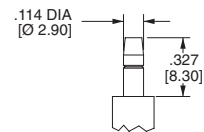
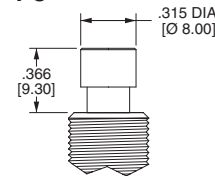
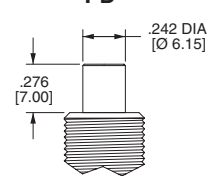
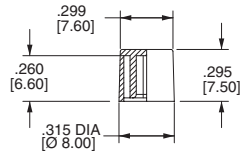
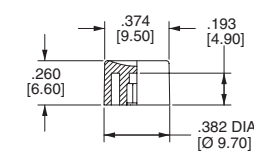
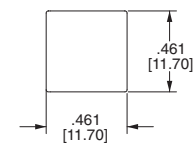
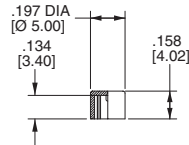
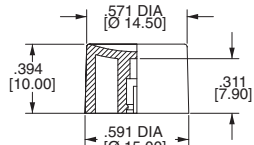
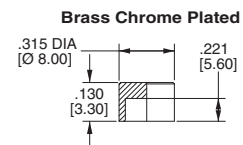
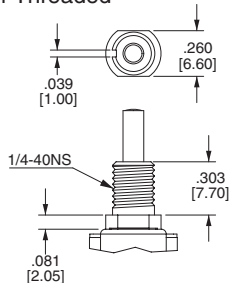
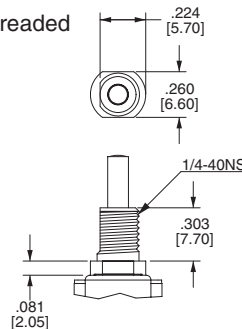
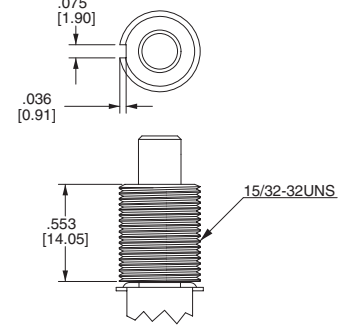
**M71**

**VS21,VS31**

**VS41,VS51**


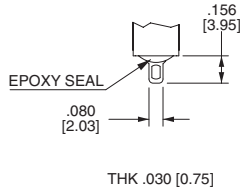
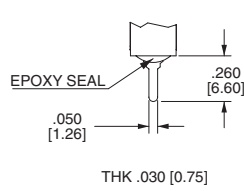
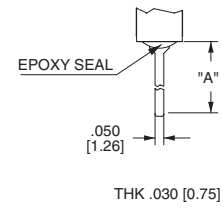
M61,M71,VS21,VS31,VS41,VS51 have the same P.C. mounting but with snap-in bracket.



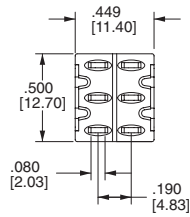
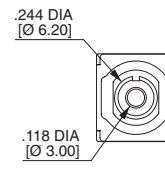
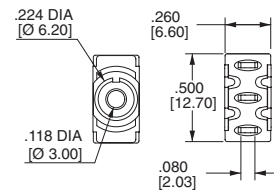
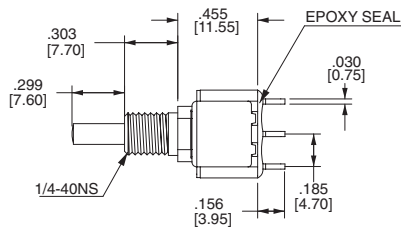
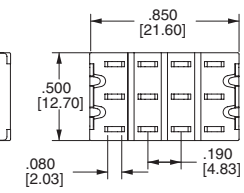
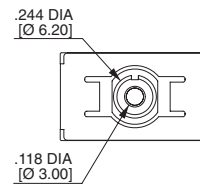
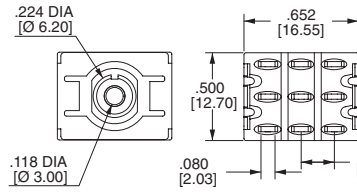
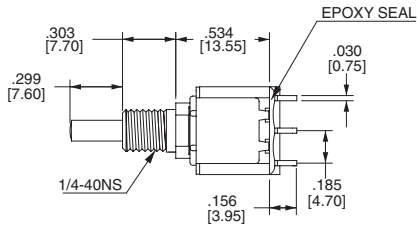
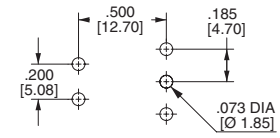
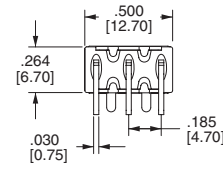
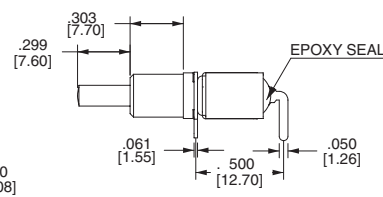
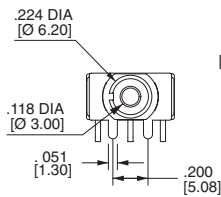
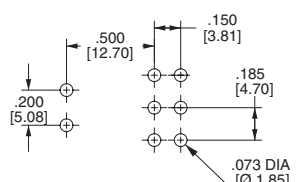
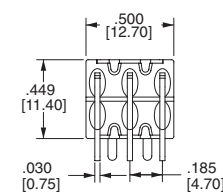
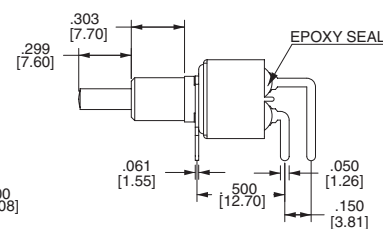
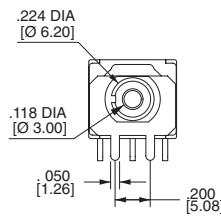
**3MA-Series Dimensional Specifications: in. [mm]**
**ACTUATOR**
**AP1**

**PANEL MOUNTING**

**AP2**

**PANEL MOUNTING**

**PLUNGER**
**PA,PI**


OPTION CODE	DIM. "A"
PA	.299 [7.60]
PI	.244 [6.20]

**PL**

**PC**

**Brass Chrome Plated**
**PD**

**PC, PD Plunger must fit with BD bushing**
**CAP**
**C1**

**C2**

**C3**

**C4**

**C5**

**For PL Bushing Only**
**C6**

**For PD Bushing Only**
**BUSHING**
**B10 Threaded  
B20 Non-Threaded**

**B21 Non-Threaded**

**BD**


**3MA-Series Dimensional Specifications: in. [mm]**
**TERMINATION**
**M1**

**M2**

**M5**


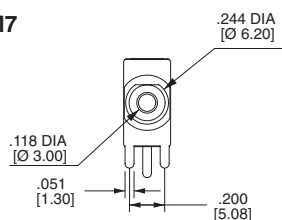
OPTION CODE	DIM. "A"
<b>M5-1</b>	.750 [19.05]
<b>M5-2</b>	.964 [24.48]
<b>M5-3</b>	.425 [10.80]
<b>M5-4</b>	1.062 [26.97]

**SINGLE POLE**
**DOUBLE POLE**

**3 POLE**
**4 POLE**

**M6**
**SINGLE POLE**
**PC MOUNTING**

**DOUBLE POLE**
**PC MOUNTING**


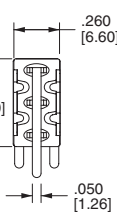
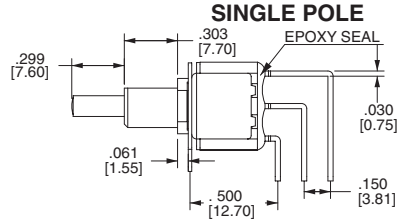
## 3MA-Series Dimensional Specifications: in. [mm]

### TERMINATION

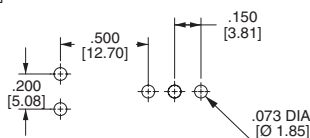
#### M7



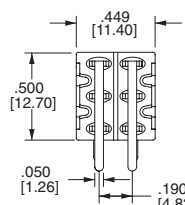
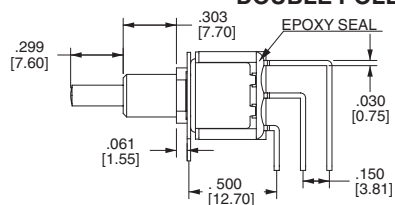
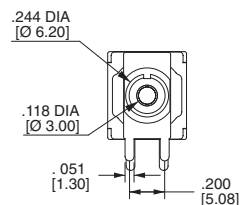
#### SINGLE POLE



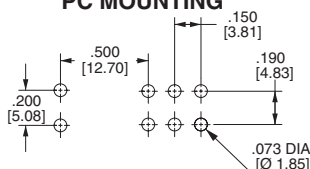
#### PC MOUNTING



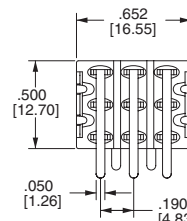
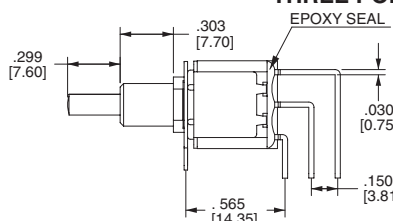
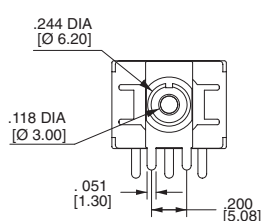
#### DOUBLE POLE



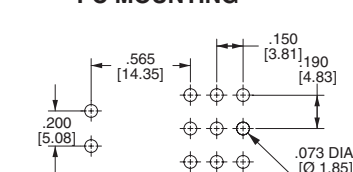
#### PC MOUNTING



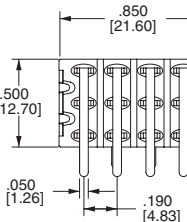
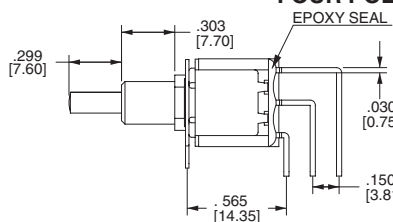
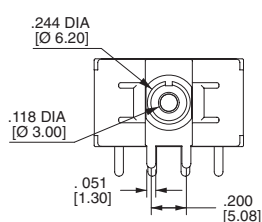
#### THREE POLE



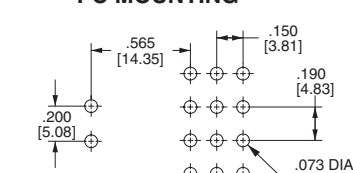
#### PC MOUNTING



#### FOUR POLE

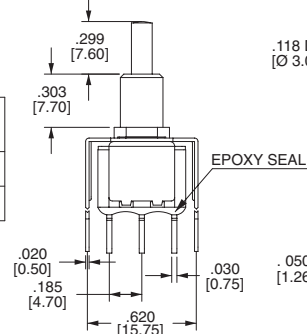


#### PC MOUNTING

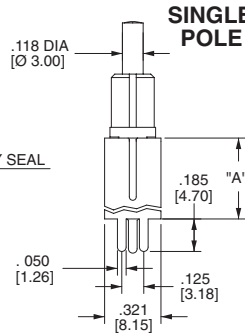


#### VS2-VS3

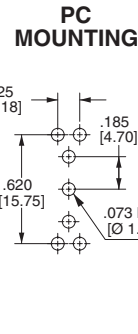
OPTION CODE	DIM. "A"
VS2	.460 [11.68]
VS3	.630 [16.00]



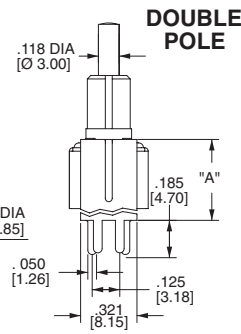
#### SINGLE POLE



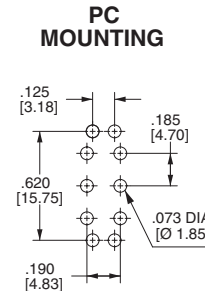
#### PC MOUNTING



#### DOUBLE POLE

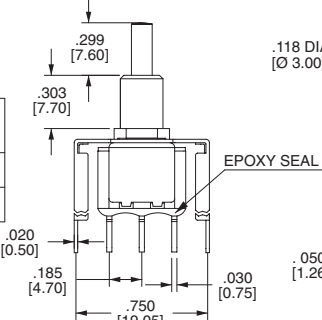


#### PC MOUNTING

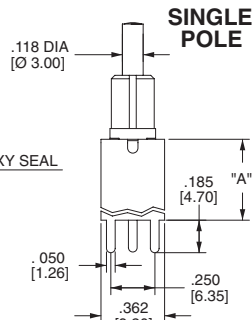


#### VS4-VS5

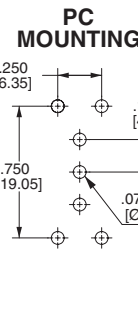
OPTION CODE	DIM. "A"
VS4	.460 [11.68]
VS5	.630 [16.00]



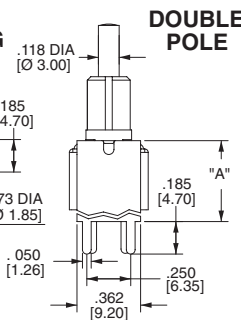
#### SINGLE POLE



#### PC MOUNTING



#### DOUBLE POLE



#### PC MOUNTING

