3M-Serie
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

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### 2M-Series - General Specifications

<table>
<thead>
<tr>
<th><strong>Electrical</strong></th>
<th><strong>Material</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact Rating</strong></td>
<td>3MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL94V-0)</td>
</tr>
<tr>
<td><strong>Electrical Life</strong></td>
<td>3MN, 3MA &amp; 3MNH-Series: Dially phthalate (DAP) (UL 94V-0)</td>
</tr>
<tr>
<td><strong>Contact Resistance</strong></td>
<td>3MS &amp; 3MA-Series: Glass filled nylon or glass filled polyester (UL94V-0)</td>
</tr>
<tr>
<td>3MS-Series: 50 mΩ max. initial @ 2-4 VDC 100mA for both silver &amp; gold plated contacts. 3MN, 3MA &amp; 3MNH-Series: 10 mΩ max. initial @ 2-4 VDC 100mA for both silver &amp; gold plated contacts.</td>
<td>3MN-Series: Thermoplastic polyester, black</td>
</tr>
<tr>
<td><strong>Insulation Resistance</strong></td>
<td>3MNH-Series: Brass, black finish with o-ring seal</td>
</tr>
<tr>
<td>1000 MΩ min.</td>
<td></td>
</tr>
<tr>
<td><strong>Dielectric Strength</strong></td>
<td>3MN-Series: Brass, nickel plated</td>
</tr>
<tr>
<td>1500 Volts RMS @ sea level</td>
<td>3MA-Series: Zinc, nickel plated</td>
</tr>
<tr>
<td><strong>Case</strong></td>
<td>3MNH-Series: Brass, black finish with o-ring seal</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>3MN &amp; 3MA-Series: Stainless Steel</td>
</tr>
<tr>
<td>-30°C to +85°C</td>
<td>Terminal Seal Epoxy</td>
</tr>
<tr>
<td><strong>Index of Protection</strong></td>
<td><strong>Switch Support Retainer</strong> 3MS-Series: Stainless Steel</td>
</tr>
<tr>
<td>3MS-Series: IP68</td>
<td><strong>Cap Installation Support</strong> 3M-Series: 10 lbs. max.</td>
</tr>
<tr>
<td>3MNH-Series: IP67</td>
<td><strong>Solder Heat Resistance</strong> MIL-STD-202, Method 210</td>
</tr>
</tbody>
</table>

### Physical

| **Cap Installation Support** | 3M-Series: 10 lbs. max. |
| **Switch Support Retainer** 3MS-Series: Stainless Steel |
| **Solder Heat Resistance** | **Material** |
| MIL-STD-202, Method 210 | 3MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL94V-0) |
| 3MN, 3MA & 3MNH-Series: Dially phthalate (DAP) (UL 94V-0) | 3MS & 3MA-Series: Glass filled nylon or glass filled polyester (UL94V-0) |
| 3MN-Series: Thermoplastic polyester, black | 3MNH-Series: Brass, black finish with o-ring seal |
| 3MN-Series: Brass, nickel plated | 3MA-Series: Zinc, nickel plated |
| 3MNH-Series: Brass, black finish with o-ring seal | 3MN & 3MA-Series: Stainless Steel |
| **Housing** | Terminal Seal Epoxy |

*Manufacturers reserves the right to change product specification without prior notice.*
### 3M-Series - 3MNH Ordering Scheme, 3MS Ordering Scheme

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

**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. ON
    2. ON
    3. ON
    4. ON
    5. ON
    6. ON
    7. ON

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

**4 PLUNGER**
- PJ
  - .325 height [8.25 mm]
- PA
  - .157 height [4.00 mm]
- PB
  - .354 height [9.00 mm]

**5 BUSHING**
- BJ
  - Threaded 15/32, flat, .553 height [14.05 mm]
- BL
  - Threaded 15/32, flat, .295 height [7.49 mm]

**6 TERMINATION**
- M1: Solder Lug
- M2: PCB 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  6A@125VAC or 28VDC  IP67
  - Q silver 5  silver 5  6A@125VAC or 28VDC  IP67
  - R gold 6  gold 7  0.4VA max @ 20V max (AC/DC)  N/A

**8 EPOXY SEAL**
- E: Epoxy Seal

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

**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. ON
    2. 2-3, 5-6
    3. 2-1, 5-4
    4. ON
    5. ON
    6. ON
    7. 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**
- B1
  - Threaded, flatted, .350 height [8.89 mm]
- B4
  - Unthreaded, flatted, .250 height [6.35 mm]

**6 TERMINATION**
- M1: Solder Lug
- M2: PCB
- M6: PC Mount, 90° horizontal
- 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, .735” 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  3A@250VAC, .1A@120VAC or 28VDC  IP68
  - Q silver 3  silver 3  3A@250VAC, .1A@120VAC or 28VDC  IP68
  - R gold 2  gold 2  0.4VA max @ 20V max (AC/DC)  IP68

**8 EPOXY SEAL**
- E: Epoxy Seal

Notes:
1. Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
2. Movable contact & terminal platings: gold over nickel over copper alloy
3. Movable contact & terminal platings: silver over copper alloy
4. Movable contact & terminal platings: gold over nickel over copper alloy
5. Terminal platings: gold over nickel over copper alloy
6. Movable contact & terminal platings: silver over copper alloy
7. Movable contact & terminal platings: gold over nickel over copper alloy
8. Terminal platings: gold over nickel over copper alloy

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-0070 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 & terminal platings: gold over nickel over copper alloy
7. Terminal platings: gold over nickel over copper alloy

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3MN-Series with Square Actuator

**3MN - SP - 7 - AP2 / 3 2 - M6 Q E**

1. **Series**
2. **Poles**
3. **Circuit**
4. **Actuator**
5. **5A Actuator Color**
6. **5B Frame Color**
7. **Termination**
8. **Contacts**
9. **Seal**

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

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

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

**3MN-Series with Plunger Actuator**

**3MN - SP - 7 - P2 - B10 - B6 Q E**

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

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

**3 CIRCUIT**
( ) - momentary
Switching Position:
1. 1-2, 3-4
2. 2-3, 4-5
3. 5-6, 6-1
7. ON (ON)

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

**4 ACTUATOR**
Square Actuator (use with Color Options in Selection 5A & 5B)
AP1 - Square with no frame
AP2 - Square raised above frame
AP3 - Square flush with frame

Plunger Actuator (use with Bushing Options in Selection 5)
P0 - Flush Plunger
P1 - Standard Plunger
P2 - Short Plunger

**5A ACTUATOR COLOR & 5B FRAME COLOR**

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

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

**7 CONTACTS / TERMINALS**

<table>
<thead>
<tr>
<th>Material</th>
<th>Terminal Plating</th>
<th>Rating</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>silver gold over silver</td>
<td>1A 125VAC or 28VDC</td>
<td>N/A</td>
</tr>
<tr>
<td>Q</td>
<td>silver gold over silver</td>
<td>1A 125VAC or 28VDC</td>
<td>N/A</td>
</tr>
<tr>
<td>R</td>
<td>gold 6</td>
<td>0.4VA max 20V max (AC/DC)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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. Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 locking ring.
3. Selection 5B is blank if actuator style is AP1 (no frame).
4. Black, white and red are standard. Other colors available, consult factory for details.
5. Movable contact & terminal platings: silver over copper alloy.
6. Movable contact & terminal platings: gold over nickel over copper alloy.
### 3MA-Series with Square Actuator

#### 3MA - SP - 1 - AP2 / 3 - M6 - Q - E

1. **Series**: 3MA - Alternate Action Miniature Pushbutton Switch
2. **Poles**: Single pole - uses terminals 1, 2 & 3
3. **Circuit**: 3MA - 5 poles - uses terminals 1, 2, 3, 4, 5 & 6
4. **Bushing**: 4P - Four pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
5. **Actuator Color**: 5A - Silver
6. **Frame Color**: 5B - Gold
7. **Termination**: 6 - PC Mount, 90° horizontal
8. **Contacts**: 2 - M6 - 2 poles
9. **Seal**: 8 - Epoxy seal

### 3MA-Series with Plunger Actuator

#### 3MA - SP - 1 - PD - BD - M6 - Q - E

1. **Series**: 3MA - Alternate Action Miniature Pushbutton Switch
2. **Poles**: Single pole - uses terminals 1, 2 & 3
3. **Circuit**: 3MA - 5 poles - uses terminals 1, 2, 3, 4, 5 & 6
4. **Bushing**: 4P - Four pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
5. **Actuator**: 5 - Standard Plunger
6. **Frame Color**: 5B - Brass Chrome Plated
7. **Termination**: 6 - PCB
8. **Contacts**: 7 - M6 - 2 poles
9. **Seal**: 8 - Epoxy seal

### 3M-Series Accessories

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

### Optional Cap

#### 3MN - C1 - 3

1. **Series**: 3MN - Fits 3MN, 3MS or 3MA
2. **Toggle Cap Size**: Round 9.70 mm diameter
3. **Color**: Red

### 3C1 - 3

1. **Series**: 3C1 - Fits 3MN, 3MS or 3MA
2. **Toggle Cap Size**: Round 15 mm diameter
3. **Color**: Blue

### Notes:
- Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW12 washer, and (1) 2M1-HDW17 locking ring
- Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
- Tin option available with PC-type terminations only.
- Available with circuit 1 only.
- Black, white and red are standard. Other colors available, consult factory for details.
- Selection 5B is blank if actuator style is AP1 (no frame).
3MNH-Series Dimensional Specifications: in. [mm]

**Single Pole Maintained Circuit**
- Internal O-ring sealed
- **DIM "A"**
- FLAT THD.
- option code: PA

**Single Pole Momentary Circuit**
- Internal O-ring sealed
- **DIM "A"**
- FLAT THD.
- option code: PA

**Double Pole Maintained Circuit**
- Internal O-ring sealed
- **DIM "A"**
- FLAT THD.
- option code: PA

**Double Pole Momentary Circuit**
- Internal O-ring sealed
- **DIM "A"**
- FLAT THD.
- option code: PA

**Panel Mounting**
- 15/32-32 UNS FLAT-CUT THREADED BUSHING

**Termination Options**
- **M1 Standard Solder Lug**
- **M2 PC Thru-Hole**
- **M5 Wire Wrap**

**Options and Codes**
- **MODEL**
- **DIM "A"**
- option code: PB

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

**Single Pole**

- M6 Single Pole
- P.C.MOUNTING

**Double Pole**

- M6 Double Pole
- P.C.MOUNTING

**Plunger Options**

For B1 Bushing

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>.181</td>
</tr>
<tr>
<td>P2</td>
<td>.228</td>
</tr>
<tr>
<td>P3</td>
<td>.087</td>
</tr>
</tbody>
</table>

For B4 Bushing

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>.276</td>
</tr>
<tr>
<td>P2</td>
<td>.323</td>
</tr>
<tr>
<td>P3</td>
<td>.181</td>
</tr>
</tbody>
</table>

**Bushing Options**

B1

- 1/4-40 UNS
- .350 (8.90)

B4

- .250 (6.35)
3MS-Series Dimensional Specifications: in. [mm]

### Termination Options

#### M1
- THK .030 [0.75]
- EPOXY SEAL

#### M2
- THK .030 [0.75]
- EPOXY SEAL

#### M7 Single Pole
- THK [1.96]
- .000 (0.00)
- .078 (1.98)
- .080 (2.03)
- .047 (1.20)
- .047 (1.20)

#### M7 Double Pole
- THK [1.96]
- .000 (0.00)
- .078 (1.98)
- .080 (2.03)
- .047 (1.20)
- .047 (1.20)

#### VS2-VS3 Single Pole
- THK [1.96]
- .000 (0.00)
- .078 (1.98)
- .080 (2.03)
- .047 (1.20)
- .047 (1.20)

#### VS2-VS3 Double Pole
- THK [1.96]
- .000 (0.00)
- .078 (1.98)
- .080 (2.03)
- .047 (1.20)
- .047 (1.20)

### Dimensional Specifications

#### Code
- Option
- DIM. 'A'

<table>
<thead>
<tr>
<th>VS2</th>
<th>.461</th>
<th>[11.70]</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS3</td>
<td>.630</td>
<td>[16.00]</td>
</tr>
</tbody>
</table>

#### P.C. MOUNTING
- THK [1.96]
- .000 (0.00)
- .078 (1.98)
- .080 (2.03)
- .047 (1.20)
- .047 (1.20)

- THK [1.96]
- .000 (0.00)
- .078 (1.98)
- .080 (2.03)
- .047 (1.20)
- .047 (1.20)
3MS-Series Dimensional Specifications: in. [mm]

Termination Options

VS4-VS5 Single Pole

VS4-VS5 Double Pole

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]

#### Single Pole

<table>
<thead>
<tr>
<th>Option Code</th>
<th>DIM. “A”</th>
<th>Option Code</th>
<th>DIM. “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>.213</td>
<td>B2</td>
<td>.185</td>
</tr>
<tr>
<td></td>
<td>[5.40]</td>
<td></td>
<td>[4.70]</td>
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</table>

#### Double Pole

<table>
<thead>
<tr>
<th>Option Code</th>
<th>DIM. “A”</th>
<th>Option Code</th>
<th>DIM. “A”</th>
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<tbody>
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<td>1.18</td>
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<td>1.19</td>
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<tr>
<td></td>
<td>[2.99]</td>
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<td>[2.99]</td>
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</table>

#### Actuator Options for Snap-In Front Mount

**AP1**

<table>
<thead>
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<th>DIM. “A”</th>
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<td>P0</td>
<td>.200</td>
</tr>
<tr>
<td>P1</td>
<td>.193</td>
</tr>
<tr>
<td>P2</td>
<td>.192</td>
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</tbody>
</table>

**AP2 with Frame**

<table>
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<tr>
<th>Option Code</th>
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<tbody>
<tr>
<td></td>
<td>.230</td>
</tr>
</tbody>
</table>

**AP3 Flush CAP**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>DIM. “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.230</td>
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</tbody>
</table>

#### Plunger Options

**For B1, B2, B3, B4 Bushing**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>OPTION CODE</th>
<th>DIM. “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>P0</td>
<td>.200</td>
</tr>
<tr>
<td>B2</td>
<td>P1</td>
<td>.193</td>
</tr>
<tr>
<td>B3</td>
<td>P2</td>
<td>.192</td>
</tr>
</tbody>
</table>

**For B6 Bushing**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>OPTION CODE</th>
<th>DIM. “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>.187</td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>.186</td>
</tr>
</tbody>
</table>

### DIM. “A” Values

- B1: .213 [5.40]
- B2: .185 [4.70]
- B3: .294 [7.40]
- B4: .268 [6.80]
- B6: .453 [11.50]

**PANEL MOUNTING**

- For .091/.125 [2.31/3.18] thick panels:
  - R.O.D.: .620 [15.75]
  - MAX. TYP.: 1.25 [.50]
- For .091/.125 [2.31/3.18] thick panels:
  - R.O.D.: .620 [15.75]
  - MAX. TYP.: 1.25 [.50]

**PANEL THICKNESS TO PANEL MOUNTING MAX. TYP.**


**PANEL THICKNESS TO PANEL MOUNTING MAX. TYP.**


**PANEL THICKNESS TO PANEL MOUNTING MAX. TYP.**

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

**Termination Options**

<table>
<thead>
<tr>
<th>OPTION</th>
<th>DIM. &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5-1</td>
<td>.750 [19.05]</td>
</tr>
<tr>
<td>M5-2</td>
<td>.964 [24.48]</td>
</tr>
<tr>
<td>M5-3</td>
<td>.426 [10.80]</td>
</tr>
</tbody>
</table>

**M1 Standard Solder Lug**

**M2 PC Thru-Hole**

**M5 Wire Wrap**

**M6 Single Pole**

**M6 Double Pole**

**M7 Single Pole**

**M7 Double Pole**

**VS2-VS3 Single Pole**

**P.C. MOUNTING**

[Diagram and specifications for each termination option are shown.]
3MN-Series Dimensional Specifications: in. [mm]

Termination Options

VS2-VS3 Double Pole

Option Code | DIM 'A'
--|---
VS2 | .461 [11.70]
VS3 | .630 [16.00]

VS4-VS5 Single Pole

Option Code | DIM 'A'
--|---
VS4 | .461 [11.70]
VS5 | .630 [16.00]

VS4-VS5 Double Pole

Option Code | DIM 'A'
--|---
VS4 | .461 [11.70]
VS5 | .630 [16.00]

VS6-VS7 Single Pole

(FOR B6 BUSHING ONLY)

Option Code | DIM 'A'
--|---
VS6 | .461 [11.70]
VS7 | .630 [16.00]
3MN-Series Dimensional Specifications: in. [mm]

Termination Options

VS6-VS7 Double Pole
(FOR B6 BUSHING ONLY)

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM.'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS6</td>
<td>.461   [11.70]</td>
</tr>
<tr>
<td>VS7</td>
<td>.630   [16.00]</td>
</tr>
</tbody>
</table>

P.C.MOUNTING

VS8-VS9 Single Pole
(FOR B6 BUSHING ONLY)

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM.'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS8</td>
<td>.461   [11.70]</td>
</tr>
<tr>
<td>VS9</td>
<td>.630   [16.00]</td>
</tr>
</tbody>
</table>

P.C.MOUNTING

VS8-VS9 Double Pole
(FOR B6 BUSHING ONLY)

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM.'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS8</td>
<td>.461   [11.70]</td>
</tr>
<tr>
<td>VS9</td>
<td>.630   [16.00]</td>
</tr>
</tbody>
</table>

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]

**Single Pole**
- PLPA
- PI
- PC
- PD

**Three Pole**
- PLPA
- PI
- PC
- PD

**Four Pole**
- PLPA
- PI
- PC
- PD

**Actuator Options for Snap-In Front Mount**
- AP1
- AP2 with Frame

**Panel Mounting**
- R: 2.05
- MAX. TYP.
- PANEL THICKNESS

**Plunger Options**
- PA, PI
- PL
- PC
- PD

* Plunger material: Brass Nickel Plated
* PC, PD must configure with BD bushing

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Phone: (860) 793–9281  Fax: (860) 793–9231  www.carlingtech.com
3MA-Series Dimensional Specifications: in. [mm]

**B10 Threaded Standard**

**B20 Non-Threaded**

**B21 Non-Threaded**

**BD Threaded Standard**

**Bushing Options**

**Termination Options**

**M1 Standard Solder Lug**

**M2 PC Thru-Hole**

**M5 Wire Wrap**

**M6 Single Pole**

**M6 Double Pole**

**M7 Single Pole**

**P.C. MOUNTING**

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

#### Termination Options

<table>
<thead>
<tr>
<th>Dim. 'A'</th>
<th>299</th>
<th>303</th>
<th>EPOXY SEAL</th>
<th>449</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>7.60</td>
<td>7.70</td>
<td></td>
<td>14.00</td>
</tr>
<tr>
<td>Units</td>
<td>[19.30]</td>
<td>[19.50]</td>
<td></td>
<td>[35.60]</td>
</tr>
</tbody>
</table>

#### M7 Double Pole

<table>
<thead>
<tr>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2-VS3</td>
</tr>
<tr>
<td>Option Code</td>
</tr>
<tr>
<td>VS2</td>
</tr>
<tr>
<td>VS3</td>
</tr>
<tr>
<td>Value</td>
</tr>
<tr>
<td>Units</td>
</tr>
</tbody>
</table>

#### M7 Three Pole

<table>
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<tbody>
<tr>
<td>VS2-VS3</td>
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<td>Option Code</td>
</tr>
<tr>
<td>VS2</td>
</tr>
<tr>
<td>VS3</td>
</tr>
<tr>
<td>Value</td>
</tr>
<tr>
<td>Units</td>
</tr>
</tbody>
</table>

#### M7 Four Pole

<table>
<thead>
<tr>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2-VS3</td>
</tr>
<tr>
<td>Option Code</td>
</tr>
<tr>
<td>VS2</td>
</tr>
<tr>
<td>VS3</td>
</tr>
<tr>
<td>Value</td>
</tr>
<tr>
<td>Units</td>
</tr>
</tbody>
</table>

#### VS2-VS3 Single Pole

<table>
<thead>
<tr>
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<tr>
<td>VS2-VS3</td>
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<td>Option Code</td>
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</tr>
<tr>
<td>VS3</td>
</tr>
<tr>
<td>Value</td>
</tr>
<tr>
<td>Units</td>
</tr>
</tbody>
</table>

#### VS2-VS3 Double Pole

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</tr>
<tr>
<td>VS3</td>
</tr>
<tr>
<td>Value</td>
</tr>
<tr>
<td>Units</td>
</tr>
</tbody>
</table>
### 3MA-Series Dimensional Specifications: in. [mm]

#### Termination Options

**VS4-VS5 Single Pole**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Dim.'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>0.461</td>
</tr>
<tr>
<td>VS5</td>
<td>0.630</td>
</tr>
</tbody>
</table>

**VS4-VS5 Double Pole**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Dim.'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>0.461</td>
</tr>
<tr>
<td>VS5</td>
<td>0.630</td>
</tr>
</tbody>
</table>

#### Panel Mounting

**1/4 INCH BUSHING**

- **B10**: 
  - DIM.'A': 0.333 [8.50]
  - EPOXY SEAL: 0.250 [6.35]

- **B20**: 
  - DIM.'A': 0.234 [5.90]
  - EPOXY SEAL: 0.250 [6.35]

- **B21**: 
  - DIM.'A': 0.242 [6.15]
  - EPOXY SEAL: 0.250 [6.35]

**15/32 INCH BUSHING**

- **BD**: 
  - DIM.'A': 0.469 [11.91]
  - EPOXY SEAL: 0.150 [3.81]

#### Plunger Caps

**C1**: 

- DIM.'A': 0.299 [7.60]
- EPOXY SEAL: 0.335 [8.50]

**C2**: 

- DIM.'A': 0.366 [9.30]
- EPOXY SEAL: 0.374 [9.60]

**C3**: 

- DIM.'A': 0.461 [11.70]
- EPOXY SEAL: 0.134 [3.40]

**C5**: 

- DIM.'A': 0.371 [9.45]
- EPOXY SEAL: 0.394 [10.00]

**C6**: 

- DIM.'A': 0.315 [8.00]
- EPOXY SEAL: 0.315 [8.00]

**C7**: 

- DIM.'A': 0.594 [15.10]

#### CAP AND FRAME COLORS

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

**MATERIAL**: ABS for C1–C5, C7

**MATERIAL**: Chrome plated brass for C6
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