FOUNDED IN 1920

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

SWITCHES & CONTROLS
- Rocker
- Toggle
- Pushbutton
- Rotary

CIRCUIT PROTECTION
- Hydraulic-Magnetic
- Thermal
- GFCI / ELCI

CUSTOM SOLUTIONS
- PDU’s
- Keypads
- Control Modules

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

STRATEGIC MARKETS SERVED:
- On/Off Highway
- Marine
- Telecom/Datacom
- Military
- Renewable Energy

GLOBAL LOCATIONS:
- Carling Technologies
  World Headquarters
  Hamville, CT, USA
  ISO9001:2015
  IATF16949:2016

- Marettron
  Phoenix, AZ, USA

- Carling Technologies
  Brisbane, TX, USA
  ISO14001:2015
  ISO9001:2015
  IATF16949:2016

- Carling Technologies
  Mexico
  ISO14001:2015
  ISO9001:2015
  IATF16949:2016

- Carling Technologies
  Jupiter, FL, USA

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

COMPETITIVE ADVANTAGES
- Innovative & Eco-Friendly Products
- Excellent Quality & Customer Service
- Reliable & On-Time Delivery
- Vertical Integration

OTHER SERVED INDUSTRIES:
- Medical
- Industrial Control
- Audio / Visual
- Commercial Food
- HVAC
- Floor Care
- Generators
- Small Appliances
- Security Systems
- Test & Measurement

WORLDWIDE NUMBERS:
- 2400+ EMPLOYEES
- 150+ ENGINEERS
- 70+ DISTRIBUTORS
- 50+ REP FIRMS
Carling’s miniature and subminiature sealed & non-sealed switches come in 1-4 pole configurations with ratings from 0.4VA to 6 amps. The miniature and subminiature switch lines include rocker, paddle, toggle, push button, and slide switches with PC, PCB, snap-in, and surface mount options. Certifications include UL, CSA, and cUL.

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

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

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

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Sub-Miniature</th>
<th>Miniature</th>
<th>Sealed</th>
<th>Surface Mount</th>
<th>Approvals</th>
<th>IP Rating</th>
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<tbody>
<tr>
<td>1S1</td>
<td>✔</td>
<td>–</td>
<td>–</td>
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<tr>
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<td>✔</td>
<td>–</td>
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<td>IP67</td>
</tr>
<tr>
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<td>–</td>
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<td>✔</td>
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<td>IP67</td>
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<tr>
<td>1M1</td>
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<td>✔</td>
<td>–</td>
<td>–</td>
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<tr>
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<td>✔</td>
<td>IP67</td>
</tr>
<tr>
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<td>–</td>
<td>–</td>
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<td>N/A</td>
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<tr>
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<td>–</td>
<td>✔</td>
<td>–</td>
<td>N/A</td>
<td>IP67</td>
</tr>
<tr>
<td>2M1</td>
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<td>✔</td>
<td>–</td>
<td>–</td>
<td>✔</td>
<td>N/A</td>
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<tr>
<td>2M1H</td>
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<td>✔</td>
<td>✔</td>
<td>–</td>
<td>✔</td>
<td>IP67</td>
</tr>
<tr>
<td>2MS</td>
<td>–</td>
<td>✔</td>
<td>✔</td>
<td>–</td>
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<td>IP67</td>
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<tr>
<td>3S1</td>
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<td>–</td>
<td>–</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
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<td>–</td>
<td>✔</td>
<td>–</td>
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<td>IP67</td>
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<tr>
<td>3SM</td>
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<td>✔</td>
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<td>IP67</td>
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<td>IP68</td>
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<td>N/A</td>
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<tr>
<td>3MNH</td>
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<td>✔</td>
<td>✔</td>
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<td>IP67</td>
</tr>
<tr>
<td>4S1</td>
<td>✔</td>
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<td>–</td>
<td>–</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4M1</td>
<td>–</td>
<td>✔</td>
<td>–</td>
<td>–</td>
<td>✔</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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

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

**Product Highlights:**
- IP67 Sealing
- 5 Circuit Configurations
- 3 Rocker Styles to choose from
- Dry-Circuit thru 3A 125VAC Rating
- Snap-in, Solder Lug or PC Terminations

**Typical Applications:**
- Instrumentation
- Test Equipment
- Telecommunications
- Networking
- Handheld Appliances

**Resources:**
- Configure a Complete Part
- Download CAD & Sales Drawing
### 1S-Series - General Specifications, 1SS Ordering Scheme

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

#### Electrical

<table>
<thead>
<tr>
<th>Contact Rating</th>
<th>refer to ordering scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Life</td>
<td>1S1-Series: 30,000 make &amp; break cycles @ full load</td>
</tr>
<tr>
<td></td>
<td>1SS &amp; 1SM-Series: 50,000 make &amp; break cycles @ full load</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>20 mΩ max. initial @ 2-4 VDC</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1000 MΩ min.</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1500 Volts RMS @ sea level</td>
</tr>
</tbody>
</table>

#### Material

<table>
<thead>
<tr>
<th>Case</th>
<th>all UL94 V-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S1-Series</td>
<td>Dially phthalate (DAP)</td>
</tr>
<tr>
<td>1SS-Series</td>
<td>Glass filled nylon 6/6, flame retardant, heat stabilized</td>
</tr>
<tr>
<td>1SM-Series</td>
<td>Glass filled nylon 4/6, flame retardant, heat stabilized</td>
</tr>
<tr>
<td>1SS &amp; 1SM-Series</td>
<td>Nylon (UL 94V-0)</td>
</tr>
<tr>
<td>Rocker</td>
<td>internal o-ring sealed</td>
</tr>
<tr>
<td>Bushing</td>
<td>Brass, nickel plated</td>
</tr>
<tr>
<td>Housing</td>
<td>Glass filled nylon 6/6, flame retardant, heat stabilized</td>
</tr>
<tr>
<td>Switch Support</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Terminal Seal</td>
<td>Brass, tin plated Epoxy</td>
</tr>
</tbody>
</table>

#### Physical

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

#### Performance

<table>
<thead>
<tr>
<th>Case</th>
<th>1S1-Series: Dially phthalate (DAP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SS-Series</td>
<td>Glass filled nylon 6/6, flame retardant, heat stabilized</td>
</tr>
<tr>
<td>1SM-Series</td>
<td>Glass filled nylon 4/6, flame retardant, heat stabilized</td>
</tr>
<tr>
<td>1SS &amp; 1SM-Series</td>
<td>Nylon (UL 94V-0)</td>
</tr>
<tr>
<td>Rocker</td>
<td>internal o-ring sealed</td>
</tr>
<tr>
<td>Bushing</td>
<td>Brass, nickel plated</td>
</tr>
<tr>
<td>Housing</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Switch Support</td>
<td>Brass, tin plated Epoxy</td>
</tr>
</tbody>
</table>

#### Dimensions

<table>
<thead>
<tr>
<th>1S1-Series</th>
<th>1SS-Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Miniature Rocker Switch</td>
<td>Sealed Sub-Miniature Rocker Switch</td>
</tr>
</tbody>
</table>

#### Actuator Style

<table>
<thead>
<tr>
<th>1S1-Series</th>
<th>1SS-Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Rocker</td>
<td>Narrow Black Rocker</td>
</tr>
</tbody>
</table>

#### Actuator Color

<table>
<thead>
<tr>
<th>1S1-Series</th>
<th>1SS-Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Black</td>
</tr>
</tbody>
</table>

*Other colors available, consult factory.*

#### Ordering Scheme

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

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 SERIES</td>
</tr>
<tr>
<td>2</td>
<td>2 POLES</td>
</tr>
<tr>
<td>3</td>
<td>3 CIRCUIT</td>
</tr>
<tr>
<td>4</td>
<td>4 ACTUATOR STYLE</td>
</tr>
<tr>
<td>5</td>
<td>5 ACTUATOR COLOR</td>
</tr>
</tbody>
</table>

#### Terminal Plating

<table>
<thead>
<tr>
<th>Contact Material</th>
<th>Terminal Plating</th>
<th>Rating</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>gold over silver</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC</td>
<td>IP67</td>
</tr>
<tr>
<td>K</td>
<td>tin</td>
<td>0.4VA max 20V (AC/DC)</td>
<td>IP67</td>
</tr>
<tr>
<td>P</td>
<td>silver</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC</td>
<td>IP67</td>
</tr>
<tr>
<td>R</td>
<td>gold</td>
<td>0.4VA max 20V (AC/DC)</td>
<td>IP67</td>
</tr>
</tbody>
</table>

#### Epoxy Seal

<table>
<thead>
<tr>
<th>Epoxy Seal</th>
<th>Without Epoxy Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No without Epoxy Seal</td>
</tr>
</tbody>
</table>

*Manufacturer reserves the right to change product specification without prior notice.*
### 1S-Series Ordering Scheme

**1S1 - MSP**

1. **Series**
   - 1S1: Sub-Miniature Rocker Switch

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

3. **Circuit**
   - 2 Poles:
     - Position: 1-2-3
       - ON
       - NONE
       - OFF
     - Option: 2-1-5
       - ON
       - NONE
       - OFF

4. **Actuator Style**
   - R1: Small Rocker
   - R2: Narrow Black Rocker
   - R3: Medium Rocker

5. **Actuator Color**
   - White
   - Black
   - Red
   - Other colors available, consult factory.

6. **Actuator Color**
   - 1: White
   - 2: Black
   - 3: Red

7. **Termination**
   - M1: Solder Lug
   - M2: PCB
   - M6: PC Mount, 90° horizontal
   - M7: PC Mount, 90° vertical
   - VS2: PC Mount, U bracket
   - VS3: PC Mount, U bracket

8. **Packaging**
   - T/R: tape reel - 500 pieces per reel
   - Switches are bulk packed, unless T/R is specified at the end of the part number.

### 1SM-Series Ordering Scheme

**1SM - WMSP**

1. **Series**
   - 1SM: Sealed Surface Mount Sub-Miniature Rocker Switch

2. **Poles**
   - WMSP: Single pole - uses terminals 1, 2 & 3

3. **Circuit**
   - Position: 1-2-3
     - ON
     - NONE
     - OFF

4. **Actuator Style**
   - R2: Narrow Black Rocker

5. **Termination**
   - M5: Surface Mount, 90° flat - horizontal / side
   - S6: Surface Mount, 90° horizontal / back
   - S7: Surface Mount, 90° vertical

6. **Contacts**
   - Rating:
     - 3A 125VAC or 28VDC, 1.5A 250VAC
     - 0.4VA max 20V max (AC/DC)

7. **Seal**
   - E: Epoxy Seal
     - 0: without Epoxy Seal

8. **Packaging**
   - T/R: tape reel - 500 pieces per reel
     - Switches are bulk packed, unless T/R is specified at the end of the part number.

Note:
- Tin option not available with M1 termination.
- Terminal platings: silver over nickel alloy
**1SS-Series Dimensional Specifications: in. [mm]**

### Single Pole

<table>
<thead>
<tr>
<th>Actuator Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
</tr>
<tr>
<td>R2</td>
</tr>
</tbody>
</table>

### Double Pole

<table>
<thead>
<tr>
<th>Termination Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 STD. Solder Lug</td>
</tr>
<tr>
<td>M2 PC Thru-Hole</td>
</tr>
</tbody>
</table>

### Termination Options

<table>
<thead>
<tr>
<th>M6 Single Pole</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>M6 Double Pole</th>
</tr>
</thead>
</table>
1SS-Series Dimensional Specifications: in. [mm]

**Termination Options**

- **M7 Single Pole**
  - EPOXY SEAL
  - P.C.MOUNTING
  - VS2 Single Pole
  - P.C.MOUNTING
  - VS2 Double Pole
  - P.C.MOUNTING
  - M61
  - M71
  - VS21

* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.
1S1-Series Dimensional Specifications: in. [mm]

### Actuator Options

- **R1**
  - M1 STD. Solder Lug
  - M6 Single Pole
  - M6 Double Pole

- **R2**
  - M2 PC Thru-Hole
  - M6 Single Pole
  - M6 Double Pole

- **R3**
  - M6 Single Pole
  - M6 Double Pole

### Termination Options

- **M1 STD. Solder Lug**
  - Single Pole
  - Double Pole

- **M2 PC Thru-Hole**
  - Single Pole
  - Double Pole

- **M6 Single Pole**

- **M6 Double Pole**

- **P.C.MOUNTING**
1S1-Series Dimensional Specifications: in. [mm]

**Termination Options**

### M7 Single Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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<tbody>
<tr>
<td>P.C. MOUNTING</td>
<td>200 (5.08)</td>
</tr>
<tr>
<td>Width</td>
<td>0.030 (0.76)</td>
</tr>
<tr>
<td>Height</td>
<td>0.228 (5.80)</td>
</tr>
<tr>
<td>VS2-VS3</td>
<td>0.030 (0.76)</td>
</tr>
</tbody>
</table>

### M7 Double Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.C. MOUNTING</td>
<td>200 (5.08)</td>
</tr>
<tr>
<td>Width</td>
<td>0.030 (0.76)</td>
</tr>
<tr>
<td>Height</td>
<td>0.228 (5.80)</td>
</tr>
<tr>
<td>VS2-VS3</td>
<td>0.030 (0.76)</td>
</tr>
</tbody>
</table>

### VS2-VS3 Single Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.C. MOUNTING</td>
<td>200 (5.08)</td>
</tr>
<tr>
<td>Width</td>
<td>0.030 (0.76)</td>
</tr>
<tr>
<td>Height</td>
<td>0.228 (5.80)</td>
</tr>
<tr>
<td>VS2-VS3</td>
<td>0.030 (0.76)</td>
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</tbody>
</table>

### VS2-VS3 Double Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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<tbody>
<tr>
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<td>200 (5.08)</td>
</tr>
<tr>
<td>Width</td>
<td>0.030 (0.76)</td>
</tr>
<tr>
<td>Height</td>
<td>0.228 (5.80)</td>
</tr>
<tr>
<td>VS2-VS3</td>
<td>0.030 (0.76)</td>
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</table>

**Snap-In Termination Options**

### M61

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<th>Dimension</th>
<th>Value</th>
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<tr>
<td>Height</td>
<td>0.016 (0.40)</td>
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<tr>
<td>Width</td>
<td>0.030 (0.76)</td>
</tr>
</tbody>
</table>

### M71

<table>
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<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>0.016 (0.40)</td>
</tr>
<tr>
<td>Width</td>
<td>0.030 (0.76)</td>
</tr>
</tbody>
</table>

### VS21

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>0.016 (0.40)</td>
</tr>
<tr>
<td>Width</td>
<td>0.030 (0.76)</td>
</tr>
</tbody>
</table>

* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.
1S-Series - 1SM-Series Dimensional Specifications

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

Termination Options

M6 Single Pole

S6 Single Pole

S7 Single Pole

back to table of contents
The 1M family of miniature rocker & paddle switches is composed of two switch series; the 1M1-Series miniature rocker and paddle switch, and the 1MS-Series sealed miniature rocker and paddle switch. Both products feature PC mounting and offer a variety of ratings, circuits, contact materials, terminal platings, rocker and paddle actuator styles and colors.

**Product Highlights:**
- IP67 Sealing
- 9 Circuit Options
- Over 20 Termination Styles
- UL, CSA & cUL Approvals

**Typical Applications:**
- Instrumentation
- Test Equipment
- Telecommunications
- Networking
- Handheld Appliance

**Resources:**
- Configure a Complete Part
- Download CAD & Sales Drawing
## 1M-Series - General Specifications

### Electrical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Rating</td>
<td>refer to ordering scheme</td>
</tr>
<tr>
<td><strong>1MS-Series</strong></td>
<td>30,000 make &amp; break cycles @ full load</td>
</tr>
<tr>
<td><strong>1M1-Series</strong></td>
<td>50,000 make &amp; break cycles @ full load</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>10 mΩ max. initial @ 2-4 VDC</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1000 MΩ min.</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1500 Volts RMS @ sea level</td>
</tr>
</tbody>
</table>

### Material

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case</strong></td>
<td>1MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)</td>
</tr>
<tr>
<td><strong>1M1-Series</strong></td>
<td>Dially phthalate (DAP) (UL 94V-0)</td>
</tr>
<tr>
<td>Rocker/Paddle</td>
<td>1MS-Series: Nylon, black standard, internal o-ring sealed</td>
</tr>
<tr>
<td><strong>1M1-Series</strong></td>
<td>Nylon (UL 94V-0)</td>
</tr>
<tr>
<td>Bushing</td>
<td>1MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)</td>
</tr>
<tr>
<td><strong>1M1-Series</strong></td>
<td>Brass, nickel plated</td>
</tr>
<tr>
<td>Housing</td>
<td>1MS-Series: Stainless Steel</td>
</tr>
<tr>
<td><strong>1M1-Series</strong></td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Actuator Pivot &amp; Mounting</td>
<td>1MS-Series: Nylon (UL 94V-0)</td>
</tr>
<tr>
<td>Bracket</td>
<td>1M1-Series: Stainless Steel</td>
</tr>
<tr>
<td>Actuator Pivot Retainer</td>
<td>Brass, tin plated</td>
</tr>
<tr>
<td>Switch Support</td>
<td>1MS-Series: Stainless Steel</td>
</tr>
<tr>
<td>Terminal Seal</td>
<td>Epoxy</td>
</tr>
</tbody>
</table>

### Physical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-30°C to +85°C</td>
</tr>
<tr>
<td>Index of Protection</td>
<td>1MS-Series: IP67</td>
</tr>
<tr>
<td>Solder Heat Resistance</td>
<td>MIL-STD-202, Method 210</td>
</tr>
<tr>
<td>Actuator Travel</td>
<td>25°</td>
</tr>
</tbody>
</table>

---

*Manufacturer reserves the right to change product specification without prior notice.*
1M-Series - 1MS Ordering Scheme, 1M1 Ordering Scheme

1MS - SP 1 - R6 / 2 M6 G E

1 SERIES
1MS Sealed Miniature Rocker Switch

2 POLES
SP Single pole - uses terminals 1, 2 & 3
DP Double pole uses terminals 1, 2, 3, 4, 5 & 6
3P Three pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9

3 CIRCUIT
( ) - momentary
Position: 1 2 3
1 2-3, 5-6, 8-9 Connected Terminals 2-1, 5-4, 8-7
2 ON NONE ON
3 ON OFF ON
4 (ON) OFF (ON)
5 ON OFF (ON)
6* ON ON ON
7* (ON) ON (ON)
8* ON ON (ON)
9* OFF OFF ON

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

4 ACTUATOR STYLE
R1 Standard Rocker
R2 Standard Paddle
R3 Medium Rocker
R4 Large Paddle
R5 Large Paddle
R6 Small Rocker
R7 Medium Paddle

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

6 TERMINATION
M1 Solder Lug
M2 PCB
M3 Quick Connect
M51 Wire Wrap
M52 Wire Wrap
M53 Wire Wrap
M54 Wire Wrap
M6 PC Mount, 90° horizontal
M7 PC Mount, 90° vertical

7 CONTACTS / TERMINALS
Contact Material Terminal Plating Rating Approvals
G silver 1 gold over silver 5A 125VAC or 28VAC, IP67
K gold 2.5,5 tin 4 0.4VA max 20V max (AC/DC) IP67
P silver 1.6,7 tin 4 5A 125VAC or 28VAC, IP67
R gold 2,5 gold 3 0.4VA max 20V max (AC/DC) IP67

8 EPOXY SEAL
E Epoxy Seal 0 without Epoxy Seal

9 EPOXY SEAL
E Epoxy Seal 0 without Epoxy Seal

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

1 SERIES
1M1 Miniature Rocker Switch

2 POLES
SP Single pole - uses terminals 1, 2 & 3
DP Double pole uses terminals 1, 2, 3, 4, 5 & 6
3P Three pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9
4P Four pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

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

4 ACTUATOR STYLE
R1 Standard Rocker
R2 Standard Paddle
R3 Medium Rocker
R4 Large Paddle
R5 Large Paddle
R6 Rocker & frame
R7 Paddle & frame
R8 Rocker without frame
R9 Paddle without frame

5 ACTUATOR COLOR / 6 FRAME COLOR
0 No Frame*
1 White
2 Black
3 Red
Black is standard. Other colors available, consult factory.

*Actuator style R8 or R9 only.

7 TERMINATION
M1 Solder Lug
M2 PCB
M3 Quick Connect
M51 Wire Wrap
M52 Wire Wrap
M53 Wire Wrap
M54 Wire Wrap
M6 PC Mount, 90° horizontal
M7 PC Mount, 90° vertical

8 CONTACTS / TERMINALS
Contact Material Terminal Plating Rating Approvals
G silver 3 gold over silver 5A 125VAC or 28VDC, IDN7
K gold 4,7,7 tin 6 0.4VA max 20V max (AC/DC) N/A
P silver 3,8,8 tin 6 5A 125VAC or 28VDC, IDN7
Q silver 3 silver 3 0.4VA max 20V max (AC/DC) N/A
R gold 4 gold 5 0.4VA max 20V max (AC/DC) N/A

9 EPOXY SEAL
E Epoxy Seal 0 without Epoxy Seal

Notes:
- Tin option not available with M1 and M3 terminals.
- Movable contact and terminal plateings: silver over copper alloy
- Movable contact plateings: gold over nickel over copper alloy
- Terminal plateings: gold over nickel over copper alloy
- Terminal plateings: tin over copper alloy
- Terminal contact plateings: silver over nickel alloy
- Terminal contact plateings: silver over nickel alloy

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

Black is standard. Other colors available, consult factory.

back to table of contents
1MS-Series Dimensional Specifications: in. [mm]

**Single Pole**

**Double Pole**

**Three Pole**

**Actuator Options for Panel Rear Mount**

R1

R2

R3
1MS-Series Dimensional Specifications: in. [mm]

Actuator Options for Panel Rear Mount

**R4**

**R5**

**R6**

**R7**

Actuator Options for PC Mount

**R1**

**R2**

**R3**

**R4**

**R5**

**R6**

back to table of contents
1MS-Series Dimensional Specifications: in. [mm]

Actuator Options for PC Mount

R7

Termination Options

M1 Standard Solder Lug

M2 PC Thru-Hole

M3 Quick Connect

M5 Wire Wrap

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. ’A’</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5-1</td>
<td>.711 [18.05]</td>
</tr>
<tr>
<td>M5-2</td>
<td>.924 [23.48]</td>
</tr>
<tr>
<td>M5-3</td>
<td>.386 [9.80]</td>
</tr>
<tr>
<td>M5-4</td>
<td>1.022 [26.97]</td>
</tr>
</tbody>
</table>

M6 Single Pole

M6 Double Pole

M6 Three Pole

M7 Single Pole

P.C. MOUNTING
**1MS-Series Dimensional Specifications: in. [mm]**

### M7 Double Pole

- **Option**: EPOXY SEAL
- **DIM.'A'**:
  - VS2: 0.461 (11.70)
  - VS3: 0.630 (16.00)

### M7 Three Pole

- **Option**: EPOXY SEAL
- **DIM.'A'**:
  - VS2: 0.461 (11.70)
  - VS3: 0.630 (16.00)

### VS2-VS3 Single Pole

- **Option**: EPOXY SEAL
- **DIM.'A'**:
  - VS2: 0.461 (11.70)
  - VS3: 0.630 (16.00)

### VS2-VS3 Double Pole

- **Option**: EPOXY SEAL
- **DIM.'A'**:
  - VS2: 0.461 (11.70)
  - VS3: 0.630 (16.00)

### U2-VS3 Three Pole

- **Option**: EPOXY SEAL
- **DIM.'A'**:
  - U2: 0.551 (14.00)
  - VS3: 0.630 (16.00)
### 1MS-Series Dimensional Specifications: in. [mm]

#### Termination Options

<table>
<thead>
<tr>
<th>Option Code</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461 [11.70]</td>
</tr>
<tr>
<td>VS5</td>
<td>.630 [16.00]</td>
</tr>
</tbody>
</table>

#### Snap-In Termination Options

<table>
<thead>
<tr>
<th>M61</th>
<th>VS21, VS31</th>
<th>VS41, VS51</th>
</tr>
</thead>
<tbody>
<tr>
<td>![M61 Diagram]</td>
<td>![VS21, VS31 Diagram]</td>
<td>![VS41, VS51 Diagram]</td>
</tr>
</tbody>
</table>

* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.
1M1-Series Dimensional Specifications: in. [mm]

**Single Pole**

- R1: 1.165 (29.60)
- R1A: 0.95 (19.05)
- R1B: 0.37 (9.40)
- R2: 0.937 (23.80)
- R2A: 0.37 (9.40)
- R3: 0.118 (3.00)
- R4: 0.110 (2.80)

**Double Pole**

- R1: 1.165 (29.60)
- R1A: 0.95 (19.05)
- R1B: 0.37 (9.40)
- R2: 0.937 (23.80)
- R2A: 0.37 (9.40)
- R3: 0.118 (3.00)
- R4: 0.110 (2.80)

**Three Pole**

- R1: 1.165 (29.60)
- R1A: 0.95 (19.05)
- R1B: 0.37 (9.40)
- R2: 0.937 (23.80)
- R2A: 0.37 (9.40)
- R3: 0.118 (3.00)
- R4: 0.110 (2.80)

**Four Pole**

- R1: 1.165 (29.60)
- R1A: 0.95 (19.05)
- R1B: 0.37 (9.40)
- R2: 0.937 (23.80)
- R2A: 0.37 (9.40)
- R3: 0.118 (3.00)
- R4: 0.110 (2.80)

**Actuator Options for Panel Rear Mount**

- R1: 1.165 (29.60)
- R1A: 0.95 (19.05)
- R1B: 0.37 (9.40)
- R2: 0.937 (23.80)
- R2A: 0.37 (9.40)
- R3: 0.118 (3.00)
- R4: 0.110 (2.80)
1M1-Series Dimensional Specifications: in. [mm]

**Actuator Options for Panel Rear Mount**

**R5**

*Increase this dimension to 0.620/0.625 (15.75/15.88) for 0.091/0.125 (2.31/3.18) thick panels.*

**Actuator Options for Snap-In Mount**

**R6**

**R6 WITHOUT FRAME**

**R7**

**R7 WITHOUT FRAME**

*Increase this dimension to 0.620/0.625 (15.75/15.88) for 0.091/0.125 (2.31/3.18) thick panels.*

**Actuator Options for PC Mount**

**R1**

**R2**

**R3**

**R4**
1M1-Series Dimensional Specifications: in. [mm]

**Actuator Options for PC Mount**

<table>
<thead>
<tr>
<th>R5</th>
<th>R6</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Actuator Options Diagram" /></td>
<td><img src="image2" alt="Actuator Options Diagram" /></td>
</tr>
</tbody>
</table>

**Termination Options**

<table>
<thead>
<tr>
<th>M1 Standard Solder Lug</th>
<th>M2 PC Thru-Hole</th>
<th>M3 Quick Connect</th>
<th>M5 Wire Wrap</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Termination Options Diagram" /></td>
<td><img src="image4" alt="Termination Options Diagram" /></td>
<td><img src="image5" alt="Termination Options Diagram" /></td>
<td><img src="image6" alt="Termination Options Diagram" /></td>
</tr>
</tbody>
</table>

**P.C. Mounting**

- M6 Single Pole
  - ![P.C. Mounting Diagram](image7)
- M6 Double Pole
  - ![P.C. Mounting Diagram](image8)
- M7 Single Pole
  - ![P.C. Mounting Diagram](image9)

**OPTION CODE**

- M5-1: .750 [19.05]
- M5-2: .964 [24.48]
- M5-3: .425 [10.80]
- M5-4: 1.062 [26.97]

**DIM. 'A'**

- THK .030 [0.75]
- .425 [10.80]
- .964 [24.48]
- .750 [19.05]
- 1.062 [26.97]

back to table of contents
1M1-Series Dimensional Specifications: in. [mm]

**Termination Options**

**M7 Double Pole**

**M7 Three Pole**

**M7 Four Pole**

**VS2-VS3 Single Pole**

**VS2-VS3 Double Pole**

**P.C. MOUNTING**

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM.'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td>.461 (11.70)</td>
</tr>
<tr>
<td>VS3</td>
<td>.630 (16.00)</td>
</tr>
</tbody>
</table>

**DIM.'A'**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td>.461 (11.70)</td>
</tr>
<tr>
<td>VS3</td>
<td>.630 (16.00)</td>
</tr>
</tbody>
</table>
1M-Series - 1M1-Series Dimensional Specifications

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>.461 [11.70]</td>
</tr>
<tr>
<td>VS5</td>
<td>.630 [16.00]</td>
</tr>
</tbody>
</table>

P.C. MOUNTING

VS4-VS5 Double Pole

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461 [11.70]</td>
</tr>
<tr>
<td>VS5</td>
<td>.630 [16.00]</td>
</tr>
</tbody>
</table>

P.C. MOUNTING

U4-VS5 Three Pole

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>U4</td>
<td>.551 [14.00]</td>
</tr>
<tr>
<td>VS5</td>
<td>.630 [16.00]</td>
</tr>
</tbody>
</table>

P.C. MOUNTING

Snap-In Termination Options

M61

VS21, VS31

VS41, VS51

* PC Mounting for M61, VS21, VS31, VS41, VS51 refer to M6, VS2, VS3, VS4, VS5 respectively.
The 2S family of sub-miniature toggle switches is composed of three switch series; the 2S1-Series toggle switch, the 2SS-Series sealed toggle switch, and the 2SM-Series surface mount sealed sub-miniature toggle switch. All of these series offer a variety of ratings, circuits, contact materials, terminal platings, and actuator types.

Product Highlights:
- IP67 Sealing
- 6 Actuator Options
- Surface, Thru Hole or Snap-in Mounting
- Dry-Circuit thru 3A 125VAC Ratings
- UL, CSA Approvals

Typical Applications:
- Telecommunications
- Instrumentation
- Networking
- Medical Equipment

Resources:
Configure a Complete Part
Download CAD & Sales Drawing ➤
### Electrical
- **Contact Rating**: refer to ordering scheme
- **Electrical Life**: 30,000 make & break cycles @ full load
- **Contact Resistance**: 20 mΩ max. initial @ 2-4 VDC
- **Insulation Resistance**: 1000 MΩ min.
- **Dielectric Strength**: 1500 Volts RMS @ sea level

### Physical
- **Operating Temperature**: -30°C to +85°C
- **Index of Protection**: 2SS & 2SM-Series: IP67
- **Solder Heat Resistance**: MIL-STD-202, Method 210
- **Actuator Travel**: 25°

### Material
- **Case**: all UL94 V-0
  - **2S1-Series**: Dially phthalate (DAP)
  - **2SS-Series**: Glass filled nylon 6/6, flame retardant, heat stabilized
  - **2SM-Series**: Glass filled nylon 4/6, flame retardant, heat stabilized
- **Rocker**: Brass, chrome plated.
- **Bushing**: Brass, chrome plated or nylon, internal o-ring sealed
  - **2SS-Series**: Brass, nickel plated
  - **2SM-Series**: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)

### Sealed Sub-Miniature Toggle Switch

<table>
<thead>
<tr>
<th>2SS</th>
<th>MSP</th>
<th>T1</th>
<th>B4</th>
<th>M6</th>
<th>G</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>1 SERIES</strong></th>
<th>Sealed Sub-Miniature Toggle Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2 POLES</strong></td>
<td>MSP: Single pole - uses terminals 1, 2 &amp; 3</td>
</tr>
<tr>
<td></td>
<td>MDP: Double pole - uses terminals 1, 2, 3, 4, 5 &amp; 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>3 CIRCUIT</strong></th>
<th>( ) - momentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position:</td>
<td>1   2   3</td>
</tr>
<tr>
<td></td>
<td>2-3, 5-6 Connected Terminals 2-1, 5-4</td>
</tr>
<tr>
<td>1 ON</td>
<td>NONE ON</td>
</tr>
<tr>
<td>2 ON</td>
<td>OFF ON</td>
</tr>
<tr>
<td>3 ON</td>
<td>OFF ON</td>
</tr>
<tr>
<td>4 ON</td>
<td>OFF ON</td>
</tr>
<tr>
<td>5 ON</td>
<td>OFF ON</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>4 ACTUATOR STYLE / LENGTH</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 Round toggle .421&quot; [10.70 mm]</td>
</tr>
<tr>
<td>T2 Round toggle .240&quot; [6.10 mm]</td>
</tr>
<tr>
<td>T3 Round toggle .342&quot; [8.70 mm]</td>
</tr>
<tr>
<td>T4 Round toggle .551&quot; [14.00 mm]</td>
</tr>
<tr>
<td>P1 ESD resistant toggle .425&quot; [10.80 mm]</td>
</tr>
<tr>
<td>P2 ESD resistant toggle .266&quot; [6.80 mm]</td>
</tr>
<tr>
<td>P3 ESD resistant toggle .244&quot; [6.20 mm]</td>
</tr>
<tr>
<td>P4 ESD resistant toggle .291&quot; [7.40 mm]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>5 BUSHING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>B1 Threaded</td>
</tr>
<tr>
<td>B4 Unthreaded</td>
</tr>
</tbody>
</table>

*Manufacturer reserves the right to change product specification without prior notice.*
## 2S-Series - 2S1 Ordering Scheme

### 1 SERIES
- **2S1** Sub-Miniature Toggle Switch

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

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

### 4 ACTUATOR STYLE / LENGTH
- **T1** Round toggle .375" [9.50 mm]
- **T3** Round toggle .311" [7.90 mm]
- **T2** Round toggle .236" [6.00 mm]
- **T4** Round toggle .449" [11.40 mm]

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

### 6 TERMINATION
- **M1** Solder Lug
- **M71** Right Angle PC Thru Hole, vertical
- **M2** PCB
- **M6** PC Mount, 90° horizontal
- **M61** Snap-In, Right Angle
- **M7** PC Mount, 90° vertical

### 7 CONTACTS / TERMINALS
- **Contact Material**
- **Terminal Plating**
- **Rating**
- **Approvals**
- **Position:** 1 2 3
- **Connected Terminals:** 2-1, 5-4
- **Position:** 1 2 3
- **Connected Terminals:** 2-1, 5-4
- **Contact Material:** silver 2
gold over silver 3A 125VAC or 28VDC,
1.5A 250VAC
- **Terminal Plating:** gold over silver
- **Rating:** 3A 125VAC or 28VDC,
1.5A 250VAC
- **Approvals:**

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

### Notes:
- Tin option available with PC type terminations only.
- All Switches come with standard nut, washer and locking ring shipped bulk.
- B5 & B7 bushings styles use small locking ring.
- See page 29-30 for dimensional specifications.
- Lengths shown are with B1 - B4 bushings.
- For B5 & B6 subtract .108"; for B7 & B8 subtract .043"

---

## 2S-Series - 2SM Ordering Scheme

### 1 SERIES
- **2SM** Sealed Surface Mount Sub-Miniature Toggle Switch

### 2 POLES
- **MSP** Single pole - uses terminals 1, 2 & 3

### 3 CIRCUIT
- ( ) - momentary
- **Position:** 1 2 3
- **Connected Terminals:** 2-1
- 1 ON NONE ON
- 2 ON NONE (ON)
- 3 ON OFF ON
- 4 (ON) OFF (ON)
- 5 ON OFF (ON)

### 4 ACTUATOR STYLE / LENGTH
- **T1** Round toggle .425" [10.80 mm]
- **P1** ESD resistant plastic toggle .425" [10.80 mm]
- **P2** ESD resistant plastic toggle .268" [6.80 mm]
- **P3** ESD resistant plastic toggle .244" [6.20 mm]
- **P4** ESD resistant plastic toggle .231" [7.40 mm]

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

### 6 CONTACTS / TERMINALS
- **Contact Material**
- **Terminal Plating**
- **Rating**
- **Approvals**
- **Position:** 1 2 3
- **Connected Terminals:** 2-1
- **Position:** 1 2 3
- **Connected Terminals:** 2-1
- **Contact Material:** silver 2
gold over silver 3A 125VAC or 28VDC,
1.5A 250VAC
- **Terminal Plating:** gold over silver
- **Rating:** 3A 125VAC or 28VDC,
1.5A 250VAC
- **Approvals:**

### 7 EPOXY SEAL
- **E** Epoxy Seal
- 0 without Epoxy Seal

### 8 PACKAGING
- **T/R** tape reel - 500 pieces per reel

Switches are bulk packed, unless T/R is specified at the end of the part number.

---

Notes:
- Tin option available with PC type terminations only.
- All Switches come with standard nut, washer and locking ring shipped bulk.
- M1 & M7 bushing styles use small locking ring.
- Movable contact and terminal platings: gold over nickel over copper alloy
- Terminal platings: gold over nickel over copper alloy
- Not available with M1 terminal

---

26
2SS-Series Dimensional Specifications: in. [mm]

Single Pole

- **Actuator Options**
  - T1
  - T2
  - T3
  - T4

- **Termination Options**
  - P1 Plastic Toggle
  - P2 Plastic Toggle
  - P3 Plastic Toggle
  - P4 Plastic Toggle

- **Bushing Options**
  - B1
  - B4

- **Double Pole**

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

* Subtract 2.55mm from toggle length for B1 bushing.

---

**Back to table of contents**
# 2SS-Series Dimensional Specifications: in. [mm]

**M6 Double Pole**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
<td>0.277 (7.05)</td>
</tr>
<tr>
<td>Length</td>
<td>0.240 (6.10)</td>
</tr>
<tr>
<td>Width</td>
<td>0.161 (4.10)</td>
</tr>
<tr>
<td>EPOXY SEAL</td>
<td>0.034 (0.86)</td>
</tr>
<tr>
<td>P.C.MOUNTING</td>
<td>0.39</td>
</tr>
</tbody>
</table>

**M7 Single Pole**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
<td>0.277 (7.05)</td>
</tr>
<tr>
<td>Length</td>
<td>0.240 (6.10)</td>
</tr>
<tr>
<td>Width</td>
<td>0.161 (4.10)</td>
</tr>
<tr>
<td>EPOXY SEAL</td>
<td>0.034 (0.86)</td>
</tr>
<tr>
<td>P.C.MOUNTING</td>
<td>0.39</td>
</tr>
</tbody>
</table>

**M7 Double Pole**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
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<tr>
<td>Length</td>
<td>0.361 (9.20)</td>
</tr>
<tr>
<td>Width</td>
<td>0.161 (4.10)</td>
</tr>
<tr>
<td>EPOXY SEAL</td>
<td>0.034 (0.86)</td>
</tr>
<tr>
<td>P.C.MOUNTING</td>
<td>0.39</td>
</tr>
</tbody>
</table>

**VS2 Single Pole**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
<td>0.277 (7.05)</td>
</tr>
<tr>
<td>Length</td>
<td>0.366 (9.30)</td>
</tr>
<tr>
<td>Width</td>
<td>0.10 (2.54)</td>
</tr>
<tr>
<td>EPOXY SEAL</td>
<td>0.020 (0.50)</td>
</tr>
<tr>
<td>P.C.MOUNTING</td>
<td>0.500 (12.60)</td>
</tr>
</tbody>
</table>

**VS2 Double Pole**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
<td>0.277 (7.05)</td>
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<tr>
<td>Length</td>
<td>0.366 (9.30)</td>
</tr>
<tr>
<td>Width</td>
<td>0.10 (2.54)</td>
</tr>
<tr>
<td>EPOXY SEAL</td>
<td>0.020 (0.50)</td>
</tr>
<tr>
<td>P.C.MOUNTING</td>
<td>0.500 (12.60)</td>
</tr>
</tbody>
</table>

---

**Snap-In Termination Options**

**M61**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>DIA</td>
<td>0.051 (1.29)</td>
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**M71**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>DIA</td>
<td>0.051 (1.29)</td>
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</table>

**VS21**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA</td>
<td>0.051 (1.29)</td>
</tr>
</tbody>
</table>

* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.
2S1-Series Dimensional Specifications: in. [mm]

**Actuator Options**

- **T1**
  - B1 Threaded
  - B2 Non-Threaded
- **T2**
  - B3 Threaded
  - B4 Non-Threaded
- **T3**
  - B5 Threaded
  - B6 Non-Threaded
- **T4**
  - B7 Threaded
  - B8 Non-Threaded

**Bushing Options**

- **B1 Threaded**
  - B2 Non-Threaded
- **B5 Threaded**
  - B6 Non-Threaded

**Panel Mounting**

- **10-48 INCH BUSHING**
  - WITHOUT LOCKING RING
  - WITH STD. LOCKING RING

**Termination Options**

- **Single Pole**
  - M1 Standard Solder Lug
  - M2 PC Thru-Hole
  - THK .020 [0.50]
- **Double Pole**
  - M1 Standard Solder Lug
  - M2 PC Thru-Hole
  - THK .020 [0.50]

**M6 Single Pole**

- P.C. MOUNTING

---

back to table of contents
### 2S1-Series Dimensional Specifications: in. [mm]

#### Termination Options

<table>
<thead>
<tr>
<th>Series</th>
<th>Double Pole</th>
<th>Single Pole</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M6</strong></td>
<td><img src="image1" alt="M6 Diagram" /></td>
<td><img src="image2" alt="M6 Single Pole Diagram" /></td>
<td><img src="image3" alt="M6 P.C. Mounting Diagram" /></td>
</tr>
<tr>
<td><strong>M7</strong></td>
<td><img src="image4" alt="M7 Diagram" /></td>
<td><img src="image5" alt="M7 Single Pole Diagram" /></td>
<td><img src="image6" alt="M7 P.C. Mounting Diagram" /></td>
</tr>
<tr>
<td><strong>VS2-VS3</strong></td>
<td><img src="image7" alt="VS2-VS3 Single Pole Diagram" /></td>
<td><img src="image8" alt="VS2-VS3 Double Pole Diagram" /></td>
<td><img src="image9" alt="VS2-VS3 P.C. Mounting Diagram" /></td>
</tr>
</tbody>
</table>

*PC Mounting for M61, M71, VS21 refers to M6, M7, VS2 respectively.*
2SM-Series Dimensional Specifications: in. [mm]

**K6 Single Pole**

**L6 Single Pole**

**M6 Single Pole**

**M7 Single Pole**

**S6 Single Pole**

**Actuator Options**

- **T1**
  - Plastic Toggle
  - Available with L6, S6, K6, M7 terminals only.

- **T2**
  - Plastic Toggle

- **P1**
  - Plastic Toggle

- **P2**
  - Plastic Toggle

- **P3**
  - Plastic Toggle

- **P4**
  - Plastic Toggle

* back to table of contents
2M-Series
MINIATURE TOGGLES

The 2M family of miniature toggle switches is composed of three switch series; the 2M1-Series miniature toggle switch, the 2MS-Series sealed miniature toggle switch, and the 2M1H-Series premium sealed miniature toggle switch. These series all feature PC mounting and offer a variety of ratings, circuits, contact materials, terminal plateings, toggle styles and lengths, and optional color caps.

**Product Highlights:**
- IP67 Sealing
- 8 Single and Double Pole Circuits
- Long, Short and Flatted Bushing Options
- Large Variety of Termination Options
- Available Gold, Silver and Tin Plateings
- UL Approved
- Sleek Black Finish

**Typical Applications:**
- Telecommunications
- Instrumentation
- Networking
- Medical Equipment
- Military Communications

**Resources:**
- Configure a Complete Part
- Download CAD & Sales Drawing
### Electrical
- **Contact Rating**: refer to ordering scheme
- **Electrical Life**: 50,000 make & break cycles @ full load
- **Contact Resistance**: 10 mΩ max. initial @ 2-4 VDC
- **Insulation Resistance**: 1000 MΩ min.
- **Dielectric Strength**: 1500 Volts RMS @ sea level

### Physical
- **Operating Temperature**: -30°C to +85°C
- **Index of Protection**: 2M1H-Series: IP67
- **Solder Heat Resistance**: MIL-STD-202, Method 210
- **Actuator Travel**: 25°
- **Contact Material / Terminal Plating / Rating / Approvals**:
  - **G**: silver 1 / gold over silver / 5A 125VAC or 28VDC, IP67
  - **K**: gold 2,5 / silver 1,6 / tin 4.5 / 120VAC or 28VDC, IP67
  - **Q**: silver 1 / tin 4.7 / 120VAC or 28VDC, IP67
  - **R**: gold 2 / gold 3 / 0.4VA max 20V max (AC/DC), IP67

### Material
- **Case**:
  - 2M1H-Series & 2M1-Series: Diallyl phthalate (DAP) (UL 94V-0)
  - 2MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)
- **Toggle**:
  - 2M1H-Series: Brass, black finish with o-ring seal
  - 2MS-Series: Brass, chrome plated, internal o-ring sealed
  - 2M1-Series: Brass, chrome plated
- **Bushing**:
  - 2M1H-Series: Brass, black finish with o-ring seal
  - 2MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)
  - 2M1-Series: Brass, chrome plated
- **Housing**:
  - 2M1H-Series: Brass, chrome plated
  - 2M1-Series: Stainless Steel
- **Bracket**:
  - 2MS-Series: Nylon (UL 94V-0)
  - 2M1-Series: Stainless Steel
- **Actuator Pivot Retainer**:
  - 2MS-Series: Stainless Steel
- **Switch Support**:
  - Brass, tin plated
- **Terminal Seal**:
  - Epoxy

### 2M-Series - General Specifications, 2M1H Ordering Scheme

---

*Manufacturer reserves the right to change product specification without prior notice.*
### 2M-Series - 2MS Ordering Scheme, 2M1 Ordering Scheme

#### 1 SERIES
**2MS** - Sealed Miniature Toggle Switch

#### 2 POLES
- **WSP** - Single pole - uses terminals 1, 2 & 3
- **WDP** - Double pole - uses terminals 1, 2, 3, 4, 5 & 6
- **W3P** - Three pole - uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9

#### 3 CIRCUIT
- **Position**:
  - 1: 2-3, 5-6, 8-9
  - 2: ON, NONE, ON
  - 3: NONE, OFF, ON
  - 4: OFF, OFF, (ON)
  - 5: OFF, OFF, (ON)

#### 4 ACTUATOR STYLE
- **T1** - Round Bat
- **T2** - Round Short Bat
- **T9** - Plastic Anti-Static .492" length
- **P1** - Plastic Anti-Static .496" length
- **P2** - Plastic Anti-Static .299" length
- **T6** - Long Black Plastic .492" length
- **T4** - Black Plastic .480" length
- **T5** - Rectangular .492" length
- **T3** - Long Paddle .495" length

#### 5 BUSHING
- **B1** - Threaded, Keyway
- **B4** - Unthreaded, Short, Keyway, Flat
- **B8** - Metric
- **B9** - Splashproof
- **B10** - 15/32" Threading (Standard for T7 & T8 actuator styles)
- **B4** - Stainless Steel
- **B5** - High Torque, 7.5mm, flat
- **B6** - High Torque, 8.0mm, keyway
- **B7** - Long threaded
- **B0** - Threaded, Locking

#### 6 TERMINATION
- **M1** - 2MS: Solder Lug
- **M2** - PCB
- **M3** - Quick Connect
- **M51** - Wire Wrap, .750" [19.05mm]
- **M52** - Wire Wrap, .964" [24.48mm]
- **M53** - Wire Wrap, .425" [10.80mm]
- **M54** - Wire Wrap, 1.062" [25.97mm]
- **M6** - Right Angle, PC Thru-Hole
- **M7** - Vertical, Right Angle, PC Thru-Hole
- **M71** - Vertical, Right Angle, Snap-In
- **M72** - Vertical, Snap-In, .461" [11.70mm]

#### 7 CONTACTS / TERMINALS
- **Contact Material Terminal Plating Rating Approvals**
  - **G** - silver 1 gold over silver 1 5A 125VAC or 28VDC, 6A 250VAC, IP67
  - **K** - gold 2 tin 3, 4 0.4VA max 20V max (AC/DC) IP67
  - **P** - silver 1 tin 3, 4 5A 125VAC or 28VDC, 6A 250VAC, IP67
  - **R** - gold 2 gold 2 0.4VA max 20V max (AC/DC) IP67

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

### 2M1-Series - 2M1 Ordering Scheme

#### 1 SERIES
**2M1** - Miniature Toggle Switch

#### 2 POLES
- **SP** - Single pole - uses terminals 1, 2 & 3
- **DP** - Double pole - uses terminals 1, 2, 3, 4, 5 & 6
- **3P** - Three pole - uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9
- **4P** - Four pole - uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12

#### 3 CIRCUIT
- **Position**:
  - 1: 2-3, 5-6, 8-9, 11-12
  - 2: ON, NONE, ON, ON
  - 3: OFF, OFF, OFF, ON
  - 4: ON, OFF, OFF, ON
  - 5: OFF, OFF, OFF, ON
  - 6*: OFF, OFF, OFF, ON
  - 7*: ON, ON, ON, ON
  - 8*: ON, OFF, OFF, ON

#### 4 ACTUATOR STYLE
- **T1** - Round Bat
- **T2** - Round Short Bat
- **T7** - Large Bat (B0 bushing)
- **T8** - X-Large Bat (B0 bushing)
- **T9** - Black Plastic
- **T0** - Rectangular
- **T6** - Flat (B1,B2,B5,BA,BB,BE)
- **T5** - Long Paddle
- **T4** - Medium Paddle
- **T3** - Paddle
- **TA** - Locking Lever
- **TL** - Locking Lever

#### 5 BUSHING
- **B1** - Threaded Standard, keyway
- **B2** - Non-Threaded Standard, keyway
- **B3** - Threaded Short, keyway
- **B4** - Non-Threaded Short, keyway
- **B5** - High Torque, 7.5mm, flat
- **B6** - High Torque, 8.0mm, keyway
- **B7** - Long threaded
- **B8** - Metric
- **B9** - Splashproof
- **B10** - 15/32" Threading (Standard for T7 & T8 actuator styles)
- **BA** - Stainless Steel
- **BB** - Non-Threaded for T6
- **BE** - Threaded Hi Torque for T6
- **BL** - Threaded, Locking

#### 6 TERMINATION
- **M1** - 2M1: Solder Lug
- **M2** - PCB
- **M3** - Quick Connect
- **M51** - Wire Wrap, .750" [19.05mm]
- **M52** - Wire Wrap, .964" [24.48mm]
- **M53** - Wire Wrap, .425" [10.80mm]
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- **M6** - Right Angle, PC Thru-Hole
- **M7** - Vertical, Right Angle, PC Thru-Hole
- **M71** - Vertical, Right Angle, Snap-In
- **M72** - Vertical, Snap-In, .461" [11.70mm]

#### 7 CONTACTS / TERMINALS
- **Contact Material Terminal Plating Rating Approvals**
  - **G** - silver 1 gold over silver 1 5A 125VAC or 28VDC, 6A 250VAC, IP67
  - **K** - gold 2 tin 3, 4 0.4VA max 20V max (AC/DC) IP67
  - **P** - silver 1 tin 3, 4 5A 125VAC or 28VDC, 6A 250VAC, IP67
  - **R** - gold 2 gold 2 0.4VA max 20V max (AC/DC) IP67

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

Notes:
- 1: Movable contact & terminal platings: silver over cooper alloy
- 2: Movable contact & terminal platings: gold over nickel over cooper alloy
- 3: Terminal platings: tin over nickel over cooper alloy
- 4: Tin option not available with M1 terminal

---

*Available with DP and 4P switches only. Center position connects 2-3, 5-4, 8-9, 11-10.*
2M-Series Accessories
To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word “assembled”. Ex: 2M1-SP1-T1B1-M1QE-T12 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 2M1-T12. See page 76 for dimensional specifications.

### Optional Toggle Cap

<table>
<thead>
<tr>
<th>Series</th>
<th>Toggle Cap Size</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>2M1</td>
<td>T1</td>
<td>2</td>
</tr>
<tr>
<td>1 SERIES</td>
<td>Fits 2M1H, 2MS or 2M1</td>
<td></td>
</tr>
</tbody>
</table>

#### 1 SERIES
- 2M1: Fits 2M1H, 2MS or 2M1

#### 2 TOGGLE CAP SIZE
- T1: 10.6 mm
- T2: 7.6 mm

#### 3 CAP COLOR
- 1: White
- 2: Black
- 3: Red
- 5: Yellow
- 6: Green
- 7: Blue

### Optional Dress and Knurled Nuts

<table>
<thead>
<tr>
<th>Series</th>
<th>Nut</th>
</tr>
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<tbody>
<tr>
<td>2M1</td>
<td>HDW3</td>
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</tbody>
</table>

#### 1 SERIES
- 2M1: Fits 2M1H, 2MS or 2M1

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

### Optional Rubber Seals

<table>
<thead>
<tr>
<th>Series</th>
<th>Rubber Boot Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2M1</td>
<td>E1A</td>
</tr>
</tbody>
</table>

#### 1 SERIES
- 2M1: Fits 2M1H, 2MS or 2M1

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

### 3MNH - WCP-0872

<table>
<thead>
<tr>
<th>Series</th>
<th>Rubber O-Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>3MNH</td>
<td>WCP-0872</td>
</tr>
</tbody>
</table>

#### 1 SERIES
- 3MNH: Fits 3MNH or 2M1H

#### 2 RUBBER O-RING
- WCP-0872: For 15/32 bushing option
2M1H-Series Dimensional Specifications: in. [mm]

### Single Pole

#### Termination Options
- M1 Standard Solder Lug
- M2 PC Thru-Hole
- M3 Quick Connect
- M5 Wire Wrap

#### Actuator Options
- FLAT THD.
- 15/32-32 UNS FLAT-CUT
- Epoxy Seal

#### Bushing Options & Mounting
- BKTJ
- TK

### Double Pole

#### Termination Options
- M1 Standard Solder Lug
- M2 PC Thru-Hole
- M3 Quick Connect
- M5 Wire Wrap

#### Actuator Options
- FLAT THD.
- 15/32-32 UNS FLAT-CUT
- Epoxy Seal

#### Bushing Options & Mounting
- BKTJ
- TK

### Termination Options

- **M1 Standard Solder Lug**
  - THK .030 [0.75]
  - .080 [.203]
  - .947 [2.40]

- **M2 PC Thru-Hole**
  - THK .030 [0.75]
  - .253 [6.40]

- **M3 Quick Connect**
  - THK .030 [0.75]
  - .262 [6.65]

- **M5 Wire Wrap**
  - THK .030 [0.75]
  - .262 [6.65]
2MS-Series Dimensional Specifications: in. [mm]

Single Pole

Double Pole

Three Pole

Actuator Options

T1

T2

T9 with Plastic Cap

P1 Plastic Toggle

P2 Plastic Toggle

* Shown with B4 bushing. Subtract .075" (1.90 mm) from actuator height for B1 bushing.
**2MS-Series Dimensional Specifications: in. [mm]**

### Termination Options

#### M1 Standard Solder Lug
- **Bushing Options**
- **B1**: 1/4-40 UNS
  - THK .030 [0.75]
- **B4**:
  - THK .030 [0.75]

#### M2 PC Thru-Hole
- **EPOXY SEAL**
- **DIM.'A'**
  - THK .030 [0.75]

#### M3 Quick Connect
- **EPOXY SEAL**
- **DIM.'A'**
  - THK .030 [0.75]

#### M4 Wire Wrap
- **EPOXY SEAL**
- **DIM.'A'**
  - THK .030 [0.75]

### Bushing Options

#### M6 Single Pole
- **DIM.'A'**
  - THK .030 [0.75]
  - EPOXY SEAL
  - P.C. MOUNTING

#### M6 Double Pole
- **DIM.'A'**
  - THK .030 [0.75]
  - EPOXY SEAL
  - P.C. MOUNTING

#### M6 Three Pole
- **DIM.'A'**
  - THK .030 [0.75]
  - EPOXY SEAL
  - P.C. MOUNTING

#### M7 Single Pole
- **DIM.'A'**
  - THK .030 [0.75]
  - EPOXY SEAL
  - P.C. MOUNTING
2MS-Series Dimensional Specifications: in. [mm]

Termination Options

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
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</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

P.C. MOUNTING

U4-VS5 Three Pole

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>U4</td>
<td>.551</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

EPOXY SEAL

M61

<table>
<thead>
<tr>
<th>CODE</th>
<th>OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS5</td>
<td>VS4</td>
</tr>
</tbody>
</table>

M71

<table>
<thead>
<tr>
<th>CODE</th>
<th>OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>VS5</td>
</tr>
</tbody>
</table>

VS4-VS5 Single Pole

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

P.C. MOUNTING

U4-VS5 Three Pole

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>U4</td>
<td>.551</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

EPOXY SEAL

M61

<table>
<thead>
<tr>
<th>CODE</th>
<th>OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS5</td>
<td>VS4</td>
</tr>
</tbody>
</table>

M71

<table>
<thead>
<tr>
<th>CODE</th>
<th>OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>VS5</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>.461</td>
</tr>
<tr>
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<td>.630</td>
</tr>
</tbody>
</table>

P.C. MOUNTING

U4-VS5 Three Pole

<table>
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<td>.630</td>
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</tbody>
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EPOXY SEAL

M61

<table>
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<tr>
<th>CODE</th>
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</thead>
<tbody>
<tr>
<td>VS5</td>
<td>VS4</td>
</tr>
</tbody>
</table>

M71

<table>
<thead>
<tr>
<th>CODE</th>
<th>OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>VS5</td>
</tr>
</tbody>
</table>

Snap-In Termination Options

* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.
2M1-Series Dimensional Specifications: in. [mm]

### Single Pole

<table>
<thead>
<tr>
<th>Keyway</th>
<th>Actuator Options for Panel Rear Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>T1</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T2</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T3</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T4</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T5</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T6</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T7</strong> Anti-Rotation</td>
</tr>
<tr>
<td></td>
<td><strong>T8</strong> Anti-Rotation</td>
</tr>
<tr>
<td></td>
<td><strong>T9</strong> Plastic</td>
</tr>
<tr>
<td></td>
<td><strong>T0</strong></td>
</tr>
</tbody>
</table>

### Double Pole

<table>
<thead>
<tr>
<th>Keyway</th>
<th>Actuator Options for Panel Rear Mount</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>T1</strong></td>
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<td><strong>T2</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T3</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T4</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T5</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T6</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T7</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T8</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T9</strong> Plastic</td>
</tr>
<tr>
<td></td>
<td><strong>T0</strong></td>
</tr>
</tbody>
</table>

---

### Actuator Options for Panel Rear Mount

**T1**

- .118 Dia (3.00)
- 409 (.1640)
- 394 (.1550)
- 347 (.1362)
- .030 (.75)
- 156 (.395)

**T2**

- .118 Dia (3.00)
- 409 (.1640)
- 394 (.1550)
- 347 (.1362)
- .030 (.75)
- 156 (.395)

**T3**

- .234 Dia (5.90)
- 349 (.1420)
- 236 (.600)
- 156 (.395)
- 156 (.395)

**T4**

- .220 Dia (5.60)
- 650 (16.51)

**T5**

- .220 Dia (5.60)
- 650 (16.51)

**T6**

- .197 Dia (5.00)
- 476 (12.13)
- 376 (9.55)

**T7** Anti-Rotation

- .236 Dia (6.00)
- 156 (.395)

**T8** Anti-Rotation

- .236 Dia (6.00)
- 156 (.395)

**T9** Plastic

- .067 Dia (1.70)
- 669 (17.10)

**T0**

- .398 Dia (10.05)

---

### Bushing Options

**B1** Threaded

- .293 Dia (7.45)
- 254 (.640)
- 254 (.640)

**B3** Threaded

- .391 Dia (10.00)
- 244 (.800)
- 244 (.800)

**B5** High Torque

- .393 Dia (10.00)
- 244 (.800)

**B6** High Torque

- .394 Dia (10.00)
- 244 (.800)

---

* T6 actuator is available with B1, B2, B5, B6, BA, BB & BE bushing. Actuator length shown for T1 – T5, T9 and T0 is with B1 bushing. T7, P7, T8 & P8 does not require a bushing code.
2M1-Series Dimensional Specifications: in. [mm]

**Termination Options**

- **M1 Standard Solder Lug**
- **M2 PC Thru-Hole**
- **M3 Quick Connect**
- **M5 Wire Wrap**

**M6 Single Pole**

**M6 Double Pole**

**Bushing Options**

- **BA Threaded for T6**
- **BB Non-Threaded for T6**
- **BB High Torque for T6**

**Panel Mounting**

- **1/4 INCH BUSHING**
- **15/32 INCH BUSHING**

**BL Locking Lever**

- **ON-ON model**
- **ON-OFF-ON & ON-ON-ON model**

**Bushing Options**

- **B7 Long**
- **B8 Metric**
- **B9 Splash-Proof**

**Termination Options**

- **OPTION CODE**
- **DIM.’A’**
- **THK .030 [0.75]**
- **.425 [10.80]**
- **.964 [24.48]**
- **.750 [19.05]**
- **1.062 [26.97]**

**Panel Mounting**

- **THK .030 [0.75]**
- **.47 [1.20]**
- **.25 [0.63]**
- **.53 [1.35]**
- **.25 [0.63]**
- **.25 [0.63]**
- **.25 [0.63]**
- **.25 [0.63]**

**Back to table of contents**
2M1-Series Dimensional Specifications: in. [mm]
2M1-Series Dimensional Specifications: in. [mm]

Termination Options

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td>.461 [11.70]</td>
</tr>
<tr>
<td>VS3</td>
<td>.630 [16.00]</td>
</tr>
</tbody>
</table>

**P.C. MOUNTING**

VS2-VS3 Double Pole

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461 [11.70]</td>
</tr>
<tr>
<td>VS5</td>
<td>.630 [16.00]</td>
</tr>
</tbody>
</table>

**P.C. MOUNTING**

VS4-VS5 Single Pole

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. 'A'</th>
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</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461 [11.70]</td>
</tr>
<tr>
<td>VS5</td>
<td>.630 [16.00]</td>
</tr>
</tbody>
</table>

**P.C. MOUNTING**

VS4-VS5 Double Pole

**Snap-In Termination Options**

M61 (available with SP & DP)

VS21, VS31

M71 (available with SP & DP)

VS41, VS51

* PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.
3S-Series
SUB-MINIATURE PUSHBUTTONS

The 3S family of sub-miniature pushbutton switches is composed of three switch series; the 3S1-Series sub-miniature pushbutton switch, the 3SS-Series sealed sub-miniature pushbutton switch, and the 3SM-Series surface mount sealed sub-miniature pushbutton switch. All switches are available with a variety of rating, termination and actuator choices, and will withstand temperatures from -30°C to +85°C.

Product Highlights:
• IP67 Sealing
• AC or Low Voltage DC Rated
• Snap-in, PC or Surface Mounting
• Bulk Packed or Tape Reel

Typical Applications:
• Telecommunications
• Performance Audio
• Networking
• Computers
• Instrumentation
• Low Power On/Off Designs

Resources:
Configure a Complete Part
Download CAD & Sales Drawing
3S-Series - General Specifications, 3SS Ordering Scheme

**Electrical**
- Contact Rating refer to ordering scheme
- Electrical Life 50,000 make & break cycles @ full load
- Contact Resistance 20 mΩ max. initial @ 2-4 VDC
- Insulation Resistance 1000 MΩ min.
- Dielectric Strength 1500 Volts RMS @ sea level

**Physical**
- Operating Temperature -30°C to +85°C
- Index of Protection 3SS & 3SM-Series: IP67
- Solder Heat Resistance MIL-STD-202, Method 210

**Material**
- Case all UL94 V-0
- 3S1-Series: Dially phthalate (DAP)
- 3SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized
- 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
- Plunger 3S1-Series: Thermoplastic polyester, black
- 3SS-Series: Thermoplastic polyester (UL 94V-0), with internal o-ring
- 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized
- Bushing 3S1-Series: Brass, nickel plated
- 3SS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)
- 3SM-Series: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0)
- Housing Stainless Steel
- Switch Support Brass, tin plated
- Terminal Seal Epoxy

---

3S - WSP 9 - M6 R E

1 SERIES 3S Sealed Sub-Miniature Pushbutton Switch

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

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

4 ACTUATOR STYLE
- M2 PCB
- M6 PC Mount, 90° horizontal
- M61 Snap-In, 90° horizontal
- M7 PC Mount, 90° vertical
- M71 Snap-In, 90° vertical
- VS2 PC Mount, U bracket
- VS21 Snap-In, U bracket

5 CONTACTS / TERMINALS
- Contact Material Terminal Plating Rating Approvals
  - G silver 1 gold over silver 1A 125VAC or 28VDC IP67
  - K gold 2 0.4VA max 20V max (AC/DC) IP67
  - P silver 1 tin 3 4 1A 125VAC or 28VDC IP67
  - R gold 2 0.4VA max 20V max (AC/DC) IP67

6 EPOXY SEAL
- E Epoxy Seal 0 without Epoxy Seal

Notes:
1. Movable contact & terminal platings: silver over copper alloy
2. Movable contact & terminal platings: gold over nickel over copper alloy
3. Terminal platings: In over nickel over copper alloy
4. Tin option available with PC terminations only.

*Manufacturer reserves the right to change product specification without prior notice.*
### 3S-Series Accessories

To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word “assembled”. Ex: 3S1-SP9-B6-M7-RE-C23 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 3S1-C13.

#### Optional Cap

<table>
<thead>
<tr>
<th>3S1 - C1 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Series</td>
</tr>
<tr>
<td>3S1</td>
</tr>
<tr>
<td>2 Toggle Cap Size</td>
</tr>
<tr>
<td>C1 .158&quot; [4.01 mm] height</td>
</tr>
<tr>
<td>3 CAP COLOR</td>
</tr>
<tr>
<td>1 White</td>
</tr>
<tr>
<td>2 Black</td>
</tr>
<tr>
<td>3 Red</td>
</tr>
<tr>
<td>4 Orange</td>
</tr>
<tr>
<td>5 Yellow</td>
</tr>
<tr>
<td>6 Green</td>
</tr>
<tr>
<td>7 Blue</td>
</tr>
</tbody>
</table>

#### 3S-Series - 3S1 Ordering Scheme

<table>
<thead>
<tr>
<th>3S1 - SP 9 - B6 - M7 - RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Series</td>
</tr>
<tr>
<td>2 Poles</td>
</tr>
<tr>
<td>3 Circuit</td>
</tr>
<tr>
<td>4 Bushing</td>
</tr>
<tr>
<td>5 Termination</td>
</tr>
<tr>
<td>6 Contacts</td>
</tr>
<tr>
<td>7 Seal</td>
</tr>
</tbody>
</table>

#### 3S1 Sub-Miniature Pushbutton Switch

2 POLES

- SP Single pole - uses terminals 1, 2 & 3

3 CIRCUIT

- ( ) - momentary

<table>
<thead>
<tr>
<th>Switching Position</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-3, 5-6</td>
<td>2-1, 5-4</td>
</tr>
</tbody>
</table>

8 ON (ON)
9 OFF (ON)

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

4 BUSHING

<table>
<thead>
<tr>
<th>B5</th>
<th>10-48 Threaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>B6</td>
<td>Unthreaded “D”</td>
</tr>
<tr>
<td>B7</td>
<td>Unthreaded</td>
</tr>
</tbody>
</table>

Note: Hardware includes (2) 2M1-HDW21 nuts, and (1) 2M1-HDW22 washer

3 EPOXY SEAL

<table>
<thead>
<tr>
<th>E</th>
<th>Epoxy Seal</th>
</tr>
</thead>
</table>

Note: Epoxy Seal: .362" [9.20 mm] height

### 3SM-Series - 3SM Ordering Scheme

<table>
<thead>
<tr>
<th>3SM - SP 9 - M6 - RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Series</td>
</tr>
<tr>
<td>2 Poles</td>
</tr>
<tr>
<td>3 Circuit</td>
</tr>
<tr>
<td>4 Termination</td>
</tr>
<tr>
<td>5 Contacts</td>
</tr>
<tr>
<td>6 Seal</td>
</tr>
<tr>
<td>7 Packaging</td>
</tr>
</tbody>
</table>

#### 3SM Sealed Surface Mount Sub-Miniature Pushbutton Switch

2 POLES

- SP Single - uses terminals 1, 2 & 3

3 CIRCUIT

- ( ) - momentary

<table>
<thead>
<tr>
<th>Switching Position</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-3</td>
<td>2-1</td>
</tr>
</tbody>
</table>

8 ON (ON)
9 OFF (ON)

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

4 TERMINATION

<table>
<thead>
<tr>
<th>K6</th>
<th>Surface Mount, horizontal .433 [11.00 mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6</td>
<td>Surface Mount, 90° flat .286 [7.26 mm]</td>
</tr>
<tr>
<td>M7</td>
<td>Surface Mount, 90° right angle</td>
</tr>
<tr>
<td>S6</td>
<td>Surface Mount, 90° horizontal .353 [8.97 mm]</td>
</tr>
</tbody>
</table>

#### 6 CONTACTS / TERMINALS

<table>
<thead>
<tr>
<th>Contact Material</th>
<th>Terminal Plating</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>silver 3</td>
<td>gold over silver</td>
</tr>
<tr>
<td>K</td>
<td>gold 4,7</td>
<td>tin 6</td>
</tr>
<tr>
<td>P</td>
<td>silver 3,2</td>
<td>tin 4</td>
</tr>
<tr>
<td>Q</td>
<td>silver 3</td>
<td>silver 3</td>
</tr>
<tr>
<td>R</td>
<td>gold 4</td>
<td>gold 5</td>
</tr>
</tbody>
</table>

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

### 6 EPOXY SEAL

<table>
<thead>
<tr>
<th>E</th>
<th>Epoxy Seal</th>
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</thead>
</table>

Note: Epoxy Seal: .362" [9.20 mm] height

#### 6 PACKAGING

<table>
<thead>
<tr>
<th>T/R</th>
<th>tape reel - 500 pieces per reel</th>
</tr>
</thead>
</table>

Notes:

1. Movable contact and terminals platings: silver over copper alloy
2. Movable contact platings: gold over nickel over copper alloy
3. Terminal platings: gold over nickel over copper alloy
4. Terminal contact platings: silver over nickel alloy

#### 7 PACKAGING

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2. Movable contact platings: gold over nickel over copper alloy
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### 3S-Series Accessories

To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word “assembled”. Ex: 3S1-SP9-B6-M7-RE-C23 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 3S1-C13.

#### Optional Cap

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<td>7 Blue</td>
</tr>
</tbody>
</table>

#### Notes:

1. Hardware includes (2) 2M1-HDW21 nuts, and (1) 2M1-HDW22 washer
2. Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 locking ring
3. Movable contact and terminal platings: silver over copper alloy
4. Movable contact and terminal platings: gold over nickel over copper alloy
5. Terminal platings: gold over nickel over copper alloy
6. Terminal contact platings: silver over nickel alloy

#### 3S-Series - 3S1 Ordering Scheme

<table>
<thead>
<tr>
<th>3S1 - SP 9 - B6 - M7 - RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Series</td>
</tr>
<tr>
<td>2 Poles</td>
</tr>
<tr>
<td>3 Circuit</td>
</tr>
<tr>
<td>4 Bushing</td>
</tr>
<tr>
<td>5 Termination</td>
</tr>
<tr>
<td>6 Contacts</td>
</tr>
<tr>
<td>7 Seal</td>
</tr>
</tbody>
</table>

#### 3S1 Sub-Miniature Pushbutton Switch

2 POLES

- SP Single pole - uses terminals 1, 2 & 3

3 CIRCUIT

- ( ) - momentary

<table>
<thead>
<tr>
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<th>2</th>
</tr>
</thead>
<tbody>
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8 ON (ON)
9 OFF (ON)

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<tbody>
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Note: Epoxy Seal: .362" [9.20 mm] height

#### 7 PACKAGING

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</table>

Notes:

1. Movable contact and terminals platings: silver over copper alloy
2. Movable contact platings: gold over nickel over copper alloy
3. Terminal platings: gold over nickel over copper alloy
4. Terminal contact platings: silver over nickel alloy

### 3S-Series Accessories

To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word “assembled”. Ex: 3S1-SP9-B6-M7-RE-C23 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 3S1-C13.

#### Optional Cap

<table>
<thead>
<tr>
<th>3S1 - C1 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Series</td>
</tr>
<tr>
<td>2 Toggle Cap Size</td>
</tr>
<tr>
<td>C1 .158&quot; [4.01 mm] height</td>
</tr>
<tr>
<td>3 CAP COLOR</td>
</tr>
<tr>
<td>1 White</td>
</tr>
<tr>
<td>2 Black</td>
</tr>
<tr>
<td>3 Red</td>
</tr>
<tr>
<td>4 Orange</td>
</tr>
<tr>
<td>5 Yellow</td>
</tr>
<tr>
<td>6 Green</td>
</tr>
<tr>
<td>7 Blue</td>
</tr>
</tbody>
</table>
## 3SS-Series Dimensional Specifications: in. [mm]

<table>
<thead>
<tr>
<th>Terminals</th>
<th>Single Pole</th>
<th>Double Pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6</td>
<td><img src="image1" alt="M6 Single Pole Diagram" /></td>
<td><img src="image2" alt="M6 Double Pole Diagram" /></td>
</tr>
<tr>
<td>M7</td>
<td><img src="image3" alt="M7 Single Pole Diagram" /></td>
<td><img src="image4" alt="M7 Double Pole Diagram" /></td>
</tr>
</tbody>
</table>

### Termination Options

- **EPOXY SEAL**
- **P.C. MOUNTING**

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

### P.C. MOUNTING

- **P.C. MOUNTING** [image5]

* Double Throw shown. Single Throw uses two outer terminals only.
3SS-Series Dimensional Specifications: in. [mm]

Termination Options

**VS2 Single Pole**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>vs.</th>
<th>3SS-Series Dimensional Specifications: in. [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.177 DIA</td>
<td>4.50</td>
<td></td>
</tr>
<tr>
<td>.366 [9.30]</td>
<td>.30</td>
<td></td>
</tr>
<tr>
<td>.020 [.76]</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>.091 [2.30]</td>
<td>.10</td>
<td></td>
</tr>
</tbody>
</table>

**VS2 Double Pole**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>vs.</th>
<th>3SS-Series Dimensional Specifications: in. [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.237 DIA</td>
<td>6.00</td>
<td></td>
</tr>
<tr>
<td>.366 [9.30]</td>
<td>.30</td>
<td></td>
</tr>
<tr>
<td>.030 [0.76]</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>.091 [2.30]</td>
<td>.10</td>
<td></td>
</tr>
</tbody>
</table>

**P.C.MOUNTING**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>vs.</th>
<th>3SS-Series Dimensional Specifications: in. [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.100 DIA</td>
<td>2.54</td>
<td></td>
</tr>
<tr>
<td>.043 DIA</td>
<td>1.09</td>
<td></td>
</tr>
</tbody>
</table>

**Snap-In Termination Options**

**M61**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>vs.</th>
<th>3SS-Series Dimensional Specifications: in. [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.016 [0.40]</td>
<td>.019 [0.49]</td>
<td></td>
</tr>
</tbody>
</table>

**M71**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>vs.</th>
<th>3SS-Series Dimensional Specifications: in. [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.016 [0.40]</td>
<td>.019 [0.49]</td>
<td></td>
</tr>
</tbody>
</table>

**VS21**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>vs.</th>
<th>3SS-Series Dimensional Specifications: in. [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>.020 [0.51]</td>
<td>.016 [0.40]</td>
<td>.039 [1.00]</td>
</tr>
</tbody>
</table>

* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.
### 3S1-Series Dimensional Specifications: in. [mm]

#### Single Pole

<table>
<thead>
<tr>
<th>Actuator Options for Snap-In Front Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actuator Options for Snap-In Front Mount</strong></td>
</tr>
<tr>
<td><strong>OP1</strong></td>
</tr>
<tr>
<td><strong>OP1 Without Frame</strong></td>
</tr>
<tr>
<td><strong>B5</strong></td>
</tr>
<tr>
<td><strong>B6</strong></td>
</tr>
<tr>
<td><strong>B7</strong></td>
</tr>
<tr>
<td><strong>B8</strong></td>
</tr>
<tr>
<td><strong>B9</strong></td>
</tr>
<tr>
<td><strong>B0</strong></td>
</tr>
<tr>
<td><strong>M1</strong></td>
</tr>
<tr>
<td><strong>M2</strong></td>
</tr>
</tbody>
</table>

#### Panel Mounting


---

* Double Throw shown. Single Throw uses two outer terminals only.
### 3S1-Series Dimensional Specifications: in. [mm]

#### Termination Options

**M6 Single Pole**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.13</td>
<td>28.7</td>
</tr>
<tr>
<td>0.35</td>
<td>8.9</td>
</tr>
<tr>
<td>0.20</td>
<td>5.1</td>
</tr>
</tbody>
</table>

**M7 Single Pole**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.73</td>
<td>44.0</td>
</tr>
<tr>
<td>0.33</td>
<td>8.4</td>
</tr>
<tr>
<td>0.16</td>
<td>4.1</td>
</tr>
</tbody>
</table>

**VS2 Single Pole**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.19</td>
<td>4.9</td>
</tr>
<tr>
<td>0.30</td>
<td>7.6</td>
</tr>
<tr>
<td>0.20</td>
<td>5.1</td>
</tr>
</tbody>
</table>

**P.C. MOUNTING**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.42</td>
<td>10.7</td>
</tr>
<tr>
<td>0.20</td>
<td>5.1</td>
</tr>
<tr>
<td>0.30</td>
<td>7.6</td>
</tr>
</tbody>
</table>

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

### Snap-In Termination Options

**M61**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.16</td>
<td>4.1</td>
</tr>
<tr>
<td>0.39</td>
<td>9.9</td>
</tr>
</tbody>
</table>

**M71**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.16</td>
<td>4.1</td>
</tr>
<tr>
<td>0.39</td>
<td>9.9</td>
</tr>
</tbody>
</table>

**VS21**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.38</td>
<td>9.7</td>
</tr>
<tr>
<td>0.39</td>
<td>9.9</td>
</tr>
</tbody>
</table>

* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.
3SM-Series Dimensional Specifications: in. [mm]

**K6 Single Pole**

- DIA: 1.77 in. (4.50 mm)
- EPOXY SEAL: 0.30 in. (7.62 mm)
- Plunger Caps: 0.26 in. (6.60 mm)

**M6 Single Pole**

- DIA: 1.77 in. (4.50 mm)
- EPOXY SEAL: 0.30 in. (7.62 mm)
- Plunger Caps: 0.26 in. (6.60 mm)

**M7 Single Pole**

- DIA: 1.77 in. (4.50 mm)
- EPOXY SEAL: 0.30 in. (7.62 mm)
- Plunger Caps: 0.26 in. (6.60 mm)

**S6 Single Pole**

- DIA: 1.77 in. (4.50 mm)
- EPOXY SEAL: 0.30 in. (7.62 mm)
- Plunger Caps: 0.26 in. (6.60 mm)

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

**C1**

- MATERIAL: ABS.

**C2**

- MATERIAL: ABS.

**CAP COLORS**

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

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

**Physical**

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

**Material**

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

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

#### 1 SERIES

**3MNH**  
Premium Sealed Miniature Pushbutton Switch

#### 2 POLES

- **SP**  
  Single pole - uses terminals 1, 2, & 3  
  1 Pole - uses terminals 1, 2, 3, 4, 5 & 6

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

#### 3 CIRCUIT

<table>
<thead>
<tr>
<th>() - momentary</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching Position</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>1</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>7</td>
<td>(ON)</td>
<td>(ON)</td>
</tr>
</tbody>
</table>

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** .364 height [9.00 mm]

#### 5 BUSHING 2

- **BJ** .325 height [8.25 mm]
- **BL** .345 height [9.00 mm]

#### 6 TERMINATION

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

#### 7 CONTACTS / TERMINALS

<table>
<thead>
<tr>
<th>Contact Material</th>
<th>Terminal Plating</th>
<th>Rating</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>G silver</td>
<td>5</td>
<td>gold over silver</td>
<td>6A@125VAC or 28VDC</td>
</tr>
<tr>
<td>Q silver</td>
<td>5</td>
<td>silver</td>
<td>1A@120VAC or 38VDC</td>
</tr>
<tr>
<td>R gold</td>
<td>6</td>
<td>gold</td>
<td>0.4VA max @ 20V max (AC/DC)</td>
</tr>
</tbody>
</table>

#### 8 EPOXY SEAL

| E | Epoxy Seal |

### 3MS-Series - 3MS Ordering Scheme

#### 1 SERIES

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

#### 2 POLES

- **WSP**  
  Single pole - uses terminals 1, 2 & 3  
  1 Pole - uses terminals 1, 2, 3, 4, 5 & 6

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

#### 3 CIRCUIT

<table>
<thead>
<tr>
<th>() - momentary</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching Position</td>
<td>3-5, 6-2</td>
<td>2-6, 5-2</td>
</tr>
<tr>
<td>7</td>
<td>2-1, 5-4</td>
<td></td>
</tr>
</tbody>
</table>

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** .325 height [8.25 mm]
- **B4** .350 height [8.35 mm]

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

#### 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 |
| V32 | Snap-In, U bracket, .620" mounting x .461" height |
| V33 | PC Mount, U bracket, .620" mounting x .630" height |
| V34 | Snap-In, vertical, .461 height |
| V35 | PC Mount, U bracket, .750" mounting x .630" height |
| V351 | Snap-In, vertical, .630" height |

#### 7 CONTACTS / TERMINALS

<table>
<thead>
<tr>
<th>Contact Material</th>
<th>Terminal Plating</th>
<th>Rating</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>G silver</td>
<td>3</td>
<td>gold over silver</td>
<td>1A 120VAC or 38VDC</td>
</tr>
<tr>
<td>Q silver</td>
<td>3</td>
<td>silver</td>
<td>1A 120VAC or 38VDC</td>
</tr>
<tr>
<td>R gold</td>
<td>2</td>
<td>gold</td>
<td>0.4VA max 20V max (AC/DC)</td>
</tr>
</tbody>
</table>

#### 8 EPOXY SEAL

| E | Epoxy Seal |

[back to table of contents]
### 3MN-Series with Square Actuator

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

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

**Notes:**
1. Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 locking ring.

### 3MN-Series with Plunger Actuator

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

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-HDW16 locking ring.

### Technical Specifications

**Contact Material** | **Terminal Plating** | **Rating** | **Approvals**
--- | --- | --- | ---
G | silver | gold over silver | 1A 125VAC or 28VDC
Q | silver 5 | silver 5 | 1A 125VAC or 28VDC
R | gold 6 | gold 6 | 0.4VA max 20V max (AC/DC) | N/A

**Epoxy Seal**
- **E** Epoxy Seal: 0 without Epoxy Seal

**Back to Table of Contents**

---

**Notes:**
1. Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW16 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: gold over nickel over copper alloy.
6. Movable contact & terminal platings: gold over nickel over copper alloy.

---

**Back to Table of Contents**
3MA-Series with Square Actuator

3MA - SP - 1 - AP2 / 3 2 - M6 Q E

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

1 SERIES
3MA Alternate Action Miniature Pushbutton Switch

2 POLES
SP Single pole - uses terminals 1, 2 & 3
DP Double pole uses terminals 1, 2, 3, 4 & 5 & 6
3P 1 Three pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9
4P 1 Four pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

3 CIRCUIT
1 ( ) - momentary
Switching
1 ON
2 ON
Position: 2-3, 5-6, 8-9, 11-12
2 Connected Terminals
3 ON
4 NONE
5 ON
6 (ON)

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

Plunger Actuator (use with Bushing Options in Selection 5)
PA Standard Plunger
PI Medium Plunger
PL Brass Chrome Plunger
PC Brass Chrome Plated Plunger with Cap (for BD bushing only)

5A ACTUATOR COLOR & 5B FRAME COLOR
1 White
2 Black
3 Red
4 Orange
5 Green
6 Blue
7 Silver
8 Gold

OR

5 BUSHING
BD 1 Big bushing for PC, PD actuator 15/32”
B10 2 Threaded 1/4 - 40
B20 Unthreaded
B21 Unthreaded with flat

6 TERMINATION
M1 Solder Lug
M2 PCB
M51 Wire Wrap .750
M52 Wire Wrap .964
M53 Wire Wrap .425
M54 Wire Wrap 1.062
M6 PC Mount, 90° horizontal
M7 PC Mount, 90° vertical
VS2 PC Mount, U bracket, .620” mounting x .461” height
VS3 PC Mount, U bracket, .620” mounting x .630” height
VS4 PC Mount, U bracket, .750” mounting x .461” height
VS5 PC Mount, U bracket, .750” mounting x .630” height

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

8 EPOXY SEAL
E Epoxy Seal 0 without Epoxy Seal

Notes:
1 Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW12 washer, and (1) 2M1-HDW17 locking ring
2 Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
3 Tin option available with PC type terminations only.
4 Available with circuit 1 only.
5 Black, white and red are standard. Other colors available, consult factory for details.
6 Selection 5B is blank if actuator style is AP1 (no frame)
7 Movable contact & terminal platings: gold over nickel over copper alloy
8 Movable contact & terminal platings: gold over nickel over copper alloy, available for PC mount terminations only

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

3 CIRCUIT
( ) - momentary
Switching
1 ON
2 ON
Position: 2-3, 5-6, 8-9, 11-12
2 Connected Terminals
3 ON
4 NONE
5 ON
6 (ON)

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

Plunger Actuator (use with Bushing Options in Selection 5)
PA Standard Plunger
PI Medium Plunger
PL Brass Chrome Plunger
PC Brass Chrome Plated Plunger with Cap (for BD bushing only)

5A ACTUATOR COLOR & 5B FRAME COLOR
1 White
2 Black
3 Red

OR

5 BUSHING
BD 1 Big bushing for PC, PD actuator 15/32”
B10 2 Threaded 1/4 - 40
B20 Unthreaded
B21 Unthreaded with flat

6 TERMINATION
M1 Solder Lug
M2 PCB
M51 Wire Wrap .750
M52 Wire Wrap .964
M53 Wire Wrap .425
M54 Wire Wrap 1.062
M6 PC Mount, 90° horizontal
M7 PC Mount, 90° vertical
VS2 PC Mount, U bracket, .620” mounting x .461” height
VS3 PC Mount, U bracket, .620” mounting x .630” height
VS4 PC Mount, U bracket, .750” mounting x .461” height
VS5 PC Mount, U bracket, .750” mounting x .630” height

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

8 EPOXY SEAL
E Epoxy Seal 0 without Epoxy Seal

Notes:
1 Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW12 washer, and (1) 2M1-HDW17 locking ring
2 Hardware includes (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer, and (1) 2M1-HDW15 locking ring
3 Tin option available with PC type terminations only.
4 Available with circuit 1 only.
5 Black, white and red are standard. Other colors available, consult factory for details.
6 Selection 5B is blank if actuator style is AP1 (no frame)
7 Movable contact & terminal platings: gold over nickel over copper alloy
8 Movable contact & terminal platings: gold over nickel over copper alloy, available for PC mount terminations only

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

Optional Cap

3MN - C1 3

1 SERIES
3MN Fits 3MN, 3MS or 3MA

2 PUSHBUTTON CAP SIZE
C1 Round 8 mm diameter
C2 Round 9.70 mm diameter
C3 Square 11.7 x 11.7 mm
C4 Round 5 mm diameter

3 CAP COLOR
1 White
2 Black
3 Red

Notes:
1 For 3MA with PL Bushing
2 For 3MA with PD Bushing

back to table of contents
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

Termination Options

M1 Standard Solder Lug

M2 PC Thru-Hole

M5 Wire Wrap
### 3MS-Series Dimensional Specifications: in. [mm]

#### Single Pole

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Option</th>
<th>DIM &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>.181</td>
<td>[4.60]</td>
</tr>
<tr>
<td>P2</td>
<td>.228</td>
<td>[5.80]</td>
</tr>
<tr>
<td>P3</td>
<td>.387</td>
<td>[9.80]</td>
</tr>
</tbody>
</table>

#### Double Pole

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Option</th>
<th>DIM &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>.181</td>
<td>[4.60]</td>
</tr>
<tr>
<td>P2</td>
<td>.228</td>
<td>[5.80]</td>
</tr>
<tr>
<td>P3</td>
<td>.387</td>
<td>[9.80]</td>
</tr>
</tbody>
</table>

#### Bushing Options

- **B1**: 1/4-40 UNS, .250 [10.00]

- **B4**: .250 [6.35]
3MS-Series Dimensional Specifications: in. [mm]

### Termination Options

#### M1
- Single Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3
- Double Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3

#### M2
- Single Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3
- Double Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3

#### M7
- Single Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3
- Double Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3

#### VS2-VS3
- Single Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3
- Double Pole
  - THK: .030 [0.75]
  - Option: VS2, VS3
3MS-Series Dimensional Specifications: in. [mm]

**Termination Options**

### VS4-VS5 Single Pole

**DIMENSIONS**

<table>
<thead>
<tr>
<th>OPTION</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

**DIM. 'A'**

<table>
<thead>
<tr>
<th>OPTION</th>
<th>DIM 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.276</td>
</tr>
<tr>
<td>VS5</td>
<td>.290</td>
</tr>
</tbody>
</table>

**PC MOUNTING**

- **EPOXY SEAL**
  - VS4: .030 [.75]
  - VS5: .030 [.75]

### VS4-VS5 Double Pole

**DIMENSIONS**

<table>
<thead>
<tr>
<th>OPTION</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

**DIM. 'A'**

<table>
<thead>
<tr>
<th>OPTION</th>
<th>DIM 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.266</td>
</tr>
<tr>
<td>VS5</td>
<td>.280</td>
</tr>
</tbody>
</table>

**PC MOUNTING**

- **EPOXY SEAL**
  - VS4: .030 [.75]
  - VS5: .030 [.75]

### Snap-In Termination Options

#### M61

- **DIMENSIONS**
  - .059 [.15]
  - .362 [.92]

#### VS21, VS31

- **DIMENSIONS**
  - .020 [.50]
  - .020 [.50]

#### M71

- **DIMENSIONS**
  - .250 [.64]
  - .070 [.18]

#### VS41, VS51

- **DIMENSIONS**
  - .050 [.13]
  - .020 [.50]

* 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></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>0.00 (0.0)</td>
<td>0.00 (0.0)</td>
</tr>
<tr>
<td>P1</td>
<td>0.06 (1.6)</td>
<td>0.06 (1.6)</td>
</tr>
<tr>
<td>P2</td>
<td>0.106 (2.70)</td>
<td>0.106 (2.70)</td>
</tr>
</tbody>
</table>

### Double Pole

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P3</td>
<td>0.016 (0.41)</td>
<td>0.016 (0.41)</td>
</tr>
<tr>
<td>P4</td>
<td>0.01 (0.25)</td>
<td>0.01 (0.25)</td>
</tr>
</tbody>
</table>

### Actuator Options for Snap-In Front Mount

**AP1**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.47 (12.0)</td>
<td>0.47 (12.0)</td>
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</tbody>
</table>

**AP2 with Frame**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.79 (20.0)</td>
<td>0.79 (20.0)</td>
</tr>
</tbody>
</table>

**AP3 Flush CAP**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.79 (20.0)</td>
<td>0.79 (20.0)</td>
</tr>
</tbody>
</table>

### Bushing Options

**B1 Threaded Standard**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.28 (7.12)</td>
<td>0.28 (7.12)</td>
</tr>
</tbody>
</table>

**B2 Non-Threaded**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25 (6.35)</td>
<td>0.25 (6.35)</td>
</tr>
</tbody>
</table>

**B3 Threaded Standard**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.253 (6.45)</td>
<td>0.253 (6.45)</td>
</tr>
</tbody>
</table>

**B4 Non-Threaded**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.253 (6.45)</td>
<td>0.253 (6.45)</td>
</tr>
</tbody>
</table>

**B6 Non-Threaded**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.177 (4.50)</td>
<td>0.177 (4.50)</td>
</tr>
</tbody>
</table>

*Increase this dimension to 0.620/0.625 (15.75/15.88) for 0.091/0.125 (2.31/3.18) thk. panels.*

For B1, B2, B3, B4 Bushing

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>0.00 (0.0)</td>
<td>0.00 (0.0)</td>
</tr>
<tr>
<td>P1</td>
<td>0.06 (1.6)</td>
<td>0.06 (1.6)</td>
</tr>
<tr>
<td>P2</td>
<td>0.106 (2.70)</td>
<td>0.106 (2.70)</td>
</tr>
</tbody>
</table>

For B6 Bushing

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>0.157 (4.00)</td>
<td>0.157 (4.00)</td>
</tr>
<tr>
<td>P2</td>
<td>0.106 (2.70)</td>
<td>0.106 (2.70)</td>
</tr>
</tbody>
</table>
3MN-Series Dimensional Specifications: in. [mm]

Termination Options

<table>
<thead>
<tr>
<th>Termination</th>
<th>Option Code</th>
<th>DIM. &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 Standard Solder Lug</td>
<td>.750 [19.05]</td>
<td></td>
</tr>
<tr>
<td>M2 PC Thru-Hole</td>
<td>.964 [24.48]</td>
<td></td>
</tr>
<tr>
<td>M5 Wire Wrape</td>
<td>.426 [10.85]</td>
<td></td>
</tr>
</tbody>
</table>

M6 Single Pole

<table>
<thead>
<tr>
<th>Option Code</th>
<th>DIM. &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>.700 [18.29]</td>
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</tbody>
</table>

M6 Double Pole

<table>
<thead>
<tr>
<th>Option Code</th>
<th>DIM. &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>.600 [15.24]</td>
<td></td>
</tr>
</tbody>
</table>

M7 Single Pole

<table>
<thead>
<tr>
<th>COMM. N.O. N.C.</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS3 .630 [16.00]</td>
<td></td>
</tr>
</tbody>
</table>

M7 Double Pole

<table>
<thead>
<tr>
<th>COMM. N.O. N.C.</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS3 .630 [16.00]</td>
<td></td>
</tr>
</tbody>
</table>

VS2-VS3 Single Pole

<table>
<thead>
<tr>
<th>COMM. N.O. N.C.</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2 .461 [11.70]</td>
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</tr>
</tbody>
</table>

back to table of contents
3MN-Series Dimensional Specifications: in. [mm]

**VS2-VS3 Double Pole**

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM.’A’</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td>.461</td>
</tr>
<tr>
<td>VS3</td>
<td>.630</td>
</tr>
</tbody>
</table>

**VS4-VS5 Single Pole**

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM.’A’</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS4</td>
<td>.461</td>
</tr>
<tr>
<td>VS5</td>
<td>.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>.461</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

**VS6-VS7 Single 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</td>
</tr>
<tr>
<td>VS7</td>
<td>.630</td>
</tr>
</tbody>
</table>

Termination Options

**P.C. MOUNTING**
3M-Series - 3MN-Series Dimensional Specifications

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

Termination Options

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM.'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS6</td>
<td>.461</td>
</tr>
<tr>
<td>VS7</td>
<td>.630</td>
</tr>
<tr>
<td>VS8</td>
<td>.461</td>
</tr>
<tr>
<td>VS9</td>
<td>.630</td>
</tr>
</tbody>
</table>

P.C.MOUNTING

VS6-VS7 Double Pole
(FOR B6 BUSHING ONLY)

VS8-VS9 Single Pole
(FOR B6 BUSHING ONLY)

VS8-VS9 Double Pole
(FOR B6 BUSHING ONLY)

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**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Dim &quot;A&quot;</th>
<th>Dim &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>.299 [7.60]</td>
<td>.299 [7.60]</td>
</tr>
<tr>
<td>PI</td>
<td>.244 [6.20]</td>
<td>.244 [6.20]</td>
</tr>
</tbody>
</table>

* Plunger material: Brass Nickel Plated

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

**PANEL MOUNTING**

- AP1
  - PANEL THICKNESS
  - MAX. TYP.
  - .500 [12.70]
  - .600 [15.24]

- AP2 with Frame
  - PANEL THICKNESS
  - MAX. TYP.
  - .500 [12.70]
  - .600 [15.24]

**Plunger Options**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Dim &quot;A&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL</td>
<td>.114 [2.90]</td>
</tr>
<tr>
<td>PC</td>
<td>.315 [8.00]</td>
</tr>
<tr>
<td>PD</td>
<td>.242 [6.15]</td>
</tr>
</tbody>
</table>

* Plunger material: Brass Chrome Plated
* PC, PD must configure with BD bushing
3MA-Series Dimensional Specifications: in. [mm]

**Bushing Options**

- **B10** Threaded Standard
- **B20** Non-Threaded
- **B21** Non-Threaded
- **BD** Threaded Standard

**Termination Options**

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

**M6** Single Pole

**M6** Double Pole

**M7** Single Pole

- **EPOXY SEAL**
- **THK .030 [0.75]**
- **DIM.'A'**
- **OPTION CODE**
- **DIM.'A'**
- **DIM.'A'**
- **DIM.'A'**

**P.C.MOUNTING**
3MA-Series Dimensional Specifications: in. [mm]

### M7 Double Pole

#### Termination Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Option</th>
<th>DIM. 'A'</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td></td>
<td>0.461 [11.70]</td>
<td></td>
</tr>
<tr>
<td>VS3</td>
<td></td>
<td>0.630 [16.00]</td>
<td></td>
</tr>
</tbody>
</table>

### M7 Three Pole

#### Termination Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Option</th>
<th>DIM. 'A'</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td></td>
<td>0.461 [11.70]</td>
<td></td>
</tr>
<tr>
<td>VS3</td>
<td></td>
<td>0.630 [16.00]</td>
<td></td>
</tr>
</tbody>
</table>

### M7 Four Pole

#### Termination Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Option</th>
<th>DIM. 'A'</th>
<th>P.C. MOUNTING</th>
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</thead>
<tbody>
<tr>
<td>VS2</td>
<td></td>
<td>0.461 [11.70]</td>
<td></td>
</tr>
<tr>
<td>VS3</td>
<td></td>
<td>0.630 [16.00]</td>
<td></td>
</tr>
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### VS2-VS3 Single Pole

#### Termination Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Option</th>
<th>DIM. 'A'</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td></td>
<td>0.461 [11.70]</td>
<td></td>
</tr>
<tr>
<td>VS3</td>
<td></td>
<td>0.630 [16.00]</td>
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</tr>
</tbody>
</table>

### VS2-VS3 Double Pole

#### Termination Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Option</th>
<th>DIM. 'A'</th>
<th>P.C. MOUNTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS2</td>
<td></td>
<td>0.461 [11.70]</td>
<td></td>
</tr>
<tr>
<td>VS3</td>
<td></td>
<td>0.630 [16.00]</td>
<td></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>.461</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

**P.C.MOUNTING**

<table>
<thead>
<tr>
<th>VS4</th>
<th>.461</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

**Option Code**

- VS4
- VS5

**Panel Mounting**

**B10**

1/4 INCH BUSHING

**B20**

1/4 INCH BUSHING

**B21**

1/4 INCH BUSHING

**BD**

15/32 INCH BUSHING

**Plunger Caps**

**C1**

For PL plunger only

**C2**

For PD plunger only

**C3**

For PL plunger only

**C5**

For PL plunger only

**C6**

For PD plunger only

**C7**

For PL plunger only

**MATERIAL:**

- ABS for C1~C5, C7
- Chrome plated brass for C6

**CAP AND FRAME COLORS**

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

back to table of contents
4S-Series
SUBMINIATURE SLIDE SWITCHES

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

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

Typical Applications:
- Consumer Electronics
- Instrumentation
- Computer Servers / Peripherals
- Test / Measurement

Resources:
Configure a Complete Part
Download CAD & Sales Drawing

back to table of contents
**Electrical**

<table>
<thead>
<tr>
<th>Contact Rating</th>
<th>refer to ordering scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Life</td>
<td>30,000 make &amp; break cycles @ full load</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>10 mΩ max. initial @ 2-4 VDC</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1000 MΩ min.</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1500 Volts RMS @ sea level</td>
</tr>
</tbody>
</table>

**Physical**

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>-30°C to +85°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solder Heat Resistance</td>
<td>MIL-STD-202, Method 210</td>
</tr>
</tbody>
</table>

**Material**

<table>
<thead>
<tr>
<th>Case</th>
<th>Slide Handle</th>
<th>Housing</th>
<th>Terminal Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dially phthalate (DAP) (UL 94V-0)</td>
<td>Nylon</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Epoxy</td>
</tr>
</tbody>
</table>

---

**4S1 - FSP 1 - M6 Q E**

<table>
<thead>
<tr>
<th>Series</th>
<th>Pole</th>
<th>Circuit</th>
<th>Termination</th>
<th>Contacts</th>
<th>Seal</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>4S1</td>
<td>FSP 1</td>
<td>M6 Q E</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**5 CONTACTS / TERMINALS**

<table>
<thead>
<tr>
<th>Contact Material</th>
<th>Terminal Plating</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>silver 1</td>
<td>gold over silver</td>
</tr>
<tr>
<td>K</td>
<td>gold 2</td>
<td>3A</td>
</tr>
<tr>
<td>P</td>
<td>silver 1,6</td>
<td>0.4VA max 20V max (AC/DC)</td>
</tr>
<tr>
<td>Q</td>
<td>silver 1</td>
<td>1.5A</td>
</tr>
<tr>
<td>R</td>
<td>gold 2</td>
<td>1.5A</td>
</tr>
</tbody>
</table>

**6 EPOXY SEAL**

<table>
<thead>
<tr>
<th>Epoxy Seal</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>0</td>
</tr>
</tbody>
</table>

**7 PACKAGING**

<table>
<thead>
<tr>
<th>Packaging</th>
<th>500 pieces per reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>T/R</td>
<td>Tape reel - 500 pieces per reel</td>
</tr>
</tbody>
</table>

Switches are bulk packed, unless T/R is specified at the end of the part number.

**Notes:**

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

---

*Manufacturer reserves the right to change product specification without prior notice.*
### 4S1-Series Dimensional Specifications: in. [mm]

#### M2 Single Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>.492</td>
<td>(12.52)</td>
<td>.328</td>
<td>(8.35)</td>
</tr>
<tr>
<td>.968</td>
<td>(24.63)</td>
<td>.098</td>
<td>(2.50)</td>
</tr>
<tr>
<td>.319</td>
<td>(8.09)</td>
<td>.160</td>
<td>(4.06)</td>
</tr>
<tr>
<td>.056</td>
<td>(1.42)</td>
<td>.100</td>
<td>(2.54)</td>
</tr>
</tbody>
</table>

#### M6 Single Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>.502</td>
<td>(12.79)</td>
<td>.330</td>
<td>(8.41)</td>
</tr>
<tr>
<td>.978</td>
<td>(24.88)</td>
<td>.098</td>
<td>(2.50)</td>
</tr>
<tr>
<td>.319</td>
<td>(8.09)</td>
<td>.160</td>
<td>(4.06)</td>
</tr>
<tr>
<td>.056</td>
<td>(1.42)</td>
<td>.100</td>
<td>(2.54)</td>
</tr>
</tbody>
</table>

#### M7 Single Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>.510</td>
<td>(12.95)</td>
<td>.330</td>
<td>(8.41)</td>
</tr>
<tr>
<td>.998</td>
<td>(25.32)</td>
<td>.098</td>
<td>(2.50)</td>
</tr>
<tr>
<td>.319</td>
<td>(8.09)</td>
<td>.160</td>
<td>(4.06)</td>
</tr>
<tr>
<td>.056</td>
<td>(1.42)</td>
<td>.100</td>
<td>(2.54)</td>
</tr>
</tbody>
</table>

#### M71 Snap-In Termination Single Pole

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>.510</td>
<td>(12.95)</td>
<td>4.07</td>
<td>(10.34)</td>
</tr>
<tr>
<td>.998</td>
<td>(25.32)</td>
<td>.098</td>
<td>(2.50)</td>
</tr>
<tr>
<td>.319</td>
<td>(8.09)</td>
<td>.160</td>
<td>(4.06)</td>
</tr>
<tr>
<td>.056</td>
<td>(1.42)</td>
<td>.100</td>
<td>(2.54)</td>
</tr>
</tbody>
</table>

#### P.C. MOUNTING

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>.043</td>
<td>(1.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.010</td>
<td>(0.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.100</td>
<td>(2.54)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

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

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

**Typical Applications:**
- Consumer Electronics
- Instrumentation
- Computer Servers / Peripherals
- Test / Measurement

**Resources:**
- [Configure a Complete Part](#)
- [Download CAD & Sales Drawing](#)
### Electrical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Rating</td>
<td>refer to ordering scheme</td>
</tr>
<tr>
<td>Electrical Life</td>
<td>30,000 make &amp; break cycles @ full load</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>10 mΩ max. initial @ 2-4 VDC</td>
</tr>
<tr>
<td></td>
<td>100mA for both silver &amp; gold plated</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>contacts</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1000 MΩ min.</td>
</tr>
<tr>
<td></td>
<td>1500 Volts RMS @ sea level</td>
</tr>
</tbody>
</table>

### Physical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-30°C to +85°C</td>
</tr>
<tr>
<td>Solder Heat Resistance</td>
<td>MIL-STD-202, Method 210</td>
</tr>
</tbody>
</table>

### Material

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case</td>
<td>Dially phthalate (DAP) (UL 94V-0)</td>
</tr>
<tr>
<td>Slide Handle</td>
<td>Nylon</td>
</tr>
<tr>
<td>Housing</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Terminal Seal</td>
<td>Epoxy</td>
</tr>
</tbody>
</table>

### 4M1 Ordering Scheme

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SERIES (4M1) - Miniature Slide Switch</td>
</tr>
<tr>
<td>2</td>
<td>POLES (SSP) - Single Pole, SDP - Double Pole</td>
</tr>
<tr>
<td>3</td>
<td>CIRCUIT (1, 2, 3)</td>
</tr>
<tr>
<td>4</td>
<td>ACTUATOR (S1, S2, S3, S4)</td>
</tr>
<tr>
<td>5</td>
<td>ACTUATOR COLORS (1, 2, 3, 4, 5)</td>
</tr>
<tr>
<td>6</td>
<td>TERMINATION (M1, M2, M3, M4, M5, M6)</td>
</tr>
<tr>
<td>7</td>
<td>CONTACTS (S1, S2, S3, S4)</td>
</tr>
<tr>
<td>8</td>
<td>EPOXY SEAL (E)</td>
</tr>
</tbody>
</table>

### Contact Material and Terminal Plating

<table>
<thead>
<tr>
<th>Contact Material</th>
<th>Terminal Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>gold over silver</td>
</tr>
<tr>
<td>K</td>
<td>gold over nickel</td>
</tr>
<tr>
<td>P</td>
<td>silver over silver</td>
</tr>
<tr>
<td>Q</td>
<td>silver over nickel</td>
</tr>
<tr>
<td>R</td>
<td>gold over gold</td>
</tr>
</tbody>
</table>

### Approvals

- MIL-STD-202, Method 210
- 125VAC or 28VDC
- 0.4VAC max 20V max (AC/DC)
- N/A

### Notes:

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

*Manufacturer reserves the right to change product specification without prior notice.*
### 4M1-Series Dimensional Specifications: in. [mm]

#### Single Pole

<table>
<thead>
<tr>
<th>Actuator Options</th>
<th>Dimension 1</th>
<th>Dimension 2</th>
<th>Dimension 3</th>
<th>Dimension 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>0.201</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
<tr>
<td>S2</td>
<td>0.301</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
<tr>
<td>S3</td>
<td>0.370</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
<tr>
<td>S4</td>
<td>0.140</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
</tbody>
</table>

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

#### Double Pole

<table>
<thead>
<tr>
<th>Actuator Options</th>
<th>Dimension 1</th>
<th>Dimension 2</th>
<th>Dimension 3</th>
<th>Dimension 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>0.201</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
<tr>
<td>S2</td>
<td>0.301</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
<tr>
<td>S3</td>
<td>0.370</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
<tr>
<td>S4</td>
<td>0.140</td>
<td>0.150</td>
<td>0.953</td>
<td>0.243</td>
</tr>
</tbody>
</table>

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

---

back to table of contents
### 4M1-Series Dimensional Specifications: in. [mm]

#### Termination Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>Standard Solder Lug</td>
<td>THK .030 [0.75]</td>
</tr>
<tr>
<td>M2</td>
<td>PC Thru-Hole</td>
<td>M1-1 750 [19.05]</td>
</tr>
<tr>
<td>M3</td>
<td>Quick Connect</td>
<td>M1-2 964 [24.48]</td>
</tr>
<tr>
<td>M5</td>
<td>Wire Wrap</td>
<td>M1-3 425 [10.80]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M1-4 1062 [26.97]</td>
</tr>
</tbody>
</table>

#### Termination Options without Mounting Tabs

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>Single Pole</td>
<td>THK .030 [0.75]</td>
</tr>
<tr>
<td>N1</td>
<td>Double Pole</td>
<td>THK .030 [0.75]</td>
</tr>
<tr>
<td>M6</td>
<td>Single Pole</td>
<td>THK .030 [0.75]</td>
</tr>
<tr>
<td>M6</td>
<td>Double Pole</td>
<td>THK .030 [0.75]</td>
</tr>
<tr>
<td>M7</td>
<td>Single Pole</td>
<td>THK .030 [0.75]</td>
</tr>
</tbody>
</table>

* Standard with Mounting Tabs.

back to table of contents
### 4M1-Series Dimensional Specifications: in. [mm]

<table>
<thead>
<tr>
<th>Termination Options</th>
<th>VS2 Single Pole</th>
<th>VS2 Double Pole</th>
<th>VS3 Single Pole</th>
<th>VS3 Double Pole</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M7 Double Pole</strong></td>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>VS2 Single Pole</strong></td>
<td><img src="image5" alt="Diagram" /></td>
<td><img src="image6" alt="Diagram" /></td>
<td><img src="image7" alt="Diagram" /></td>
<td><img src="image8" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>VS2 Double Pole</strong></td>
<td><img src="image9" alt="Diagram" /></td>
<td><img src="image10" alt="Diagram" /></td>
<td><img src="image11" alt="Diagram" /></td>
<td><img src="image12" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>VS3 Single Pole</strong></td>
<td><img src="image13" alt="Diagram" /></td>
<td><img src="image14" alt="Diagram" /></td>
<td><img src="image15" alt="Diagram" /></td>
<td><img src="image16" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>VS3 Double Pole</strong></td>
<td><img src="image17" alt="Diagram" /></td>
<td><img src="image18" alt="Diagram" /></td>
<td><img src="image19" alt="Diagram" /></td>
<td><img src="image20" alt="Diagram" /></td>
</tr>
</tbody>
</table>

### P.C.MOUNTING

- VS2 Single Pole: 
  - ![Diagram](image21)
  - ![Diagram](image22)

- VS2 Double Pole: 
  - ![Diagram](image23)
  - ![Diagram](image24)

- VS3 Single Pole: 
  - ![Diagram](image25)
  - ![Diagram](image26)

- VS3 Double Pole: 
  - ![Diagram](image27)
  - ![Diagram](image28)
Dimensions: in. [mm]

1/4 Bushing

Panel Mounting

15/32 Bushing

NUTS

STANDARD .100

STANDARD .200

DRESS NUT

STANDARD FOR T7,T8

KNURLED NUT

FOR 2M-Series (HDW2)

FOR 2S-Series (HDW21)

FOR 2M-Series (HDW3)

FOR 2M-Series (HDW4)

FOR 2M-Series (HDW9)

Locking Rings

FOR T7,T8

FOR T7,T8

STANDARD .100

STANDARD .200

FOR T7,T8

FOR T7,T8

For 2M-Series (HDW11)

For 2S-Series (HDW12)

For 2M-Series (HDW21)

For 2M-Series (HDW22)

T1 Actuator Cap

T2 Actuator Cap

T9 Actuator Gloss Plastic

Toggle Caps

* MATERIAL: PVC

* MATERIAL: PVC

* MATERIAL: ABS

Plunger Caps

C1

C2

C3

C4

For PL plunger only

For PD plunger only

For PL plunger only

C5

C6

C7

CAP AND FRAME COLORS

1. White 6. Green
2. Black 7. Blue
4. Orange 9. Gray
5. Yellow

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

Dimensions: in. [mm]

2M1-E1A Rubber Boot

2M1-YE1A06 Rubber Boot

* FOR 2M1-SERIES, T8 ACTUATOR ONLY (not available with B0 bushing)

2M1-YE1E06 Rubber Boot

2M1-YE1D06 Rubber Boot

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

Accessory Photos:

E1A

YE1A06

T9

T1

T2

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

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

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

back to table of contents
<table>
<thead>
<tr>
<th>Series</th>
<th>Bushing</th>
<th>Nut</th>
<th>Washer</th>
<th>Locking Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S1</td>
<td>Rocker</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>1SS</td>
<td>Rocker</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>1SM</td>
<td>Rocker</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>1M1</td>
<td>Rocker</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>1MS</td>
<td>Rocker</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>2S1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B1</td>
<td>2M1-HDW21 *2 pieces</td>
<td>2M1-HDW22 *1 piece</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>B2, B4, B6, B8</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>B3</td>
<td>2M1-HDW21 *2 pieces</td>
<td>2M1-HDW22 *1 piece</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>B5</td>
<td>2M1-HDW2 *2 pieces</td>
<td>2M1-HDW11 *1 piece</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>B7</td>
<td>2M1-HDW2 *2 pieces</td>
<td>2M1-HDW11 *1 piece</td>
<td>none</td>
</tr>
<tr>
<td>2SM</td>
<td>N/A</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>2SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B4</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>2M2/2MS</td>
<td>B4</td>
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<td>2M1-HDW15 *1 piece</td>
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<td>2M1</td>
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<td>B2, B4</td>
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</tr>
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</tr>
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<td>B5</td>
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<td>2M1-HDW11 *1 piece</td>
<td>2M1-HDW16 *1 piece</td>
</tr>
<tr>
<td></td>
<td>B6</td>
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<td>2M1-HDW11 *1 piece</td>
<td>2M1-HDW15 *1 piece</td>
</tr>
<tr>
<td></td>
<td>B7</td>
<td>2M1-HDW2 *2 pieces</td>
<td>2M1-HDW11 *1 piece</td>
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<tr>
<td></td>
<td>B8</td>
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<td>2M1-HDW14 *1 piece</td>
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<td>B9</td>
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<td>2M1-HDW11 *1 piece</td>
<td>2M1-HDW16 *1 piece</td>
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<td>B0</td>
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<td>BJ, BK</td>
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<td>3MNH-WCP WCP-0872 (O-Ring) *1 piece</td>
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Product Selector, Resources, Configurit, Find Rep, Product Materials and Videos.

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

catalog

**MINI & SUB-MINI SWITCHES**
Sealed and non-sealed rocker, toggle, pushbutton and slide options.

catalog

**HYDRAULIC-MAGNETIC CIRCUIT PROTECTION**
1-6 poles from .02 to 700A with CSA, VDE, TUV, UL489, UL489A, UL1500 approvals.

catalog

**THERMAL CIRCUIT PROTECTION**
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catalog

**GFCI/ELCI CIRCUIT PROTECTION**
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catalog
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COTS Switches and Circuits Breakers

**TELECOM/DATACOM**
Hydraulic-Magnetic Circuit Breakers

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