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

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Application Support: team2@carlingtech.com
Phone: 860.793.9281   Fax: 860.793.9231
### Electrical

<table>
<thead>
<tr>
<th>Specification</th>
<th>1MS-Series: 30,000 make &amp; break cycles @ full load</th>
<th>1M1-Series: 50,000 make &amp; break cycles @ full load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Rating</td>
<td>refer to ordering scheme</td>
<td></td>
</tr>
<tr>
<td>Electrical Life</td>
<td>10 mΩ max. initial @ 2-4 VDC</td>
<td></td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>1100 mA for both silver &amp; gold plated contacts</td>
<td></td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1000 MΩ min.</td>
<td></td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1500 Volts RMS @ sea level</td>
<td></td>
</tr>
</tbody>
</table>

### Physical

<table>
<thead>
<tr>
<th>Specification</th>
<th>1MS-Series: -30°C to +85°C</th>
<th>1M1-Series: IP67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>MIL-STD-202, Method 210 25°</td>
<td></td>
</tr>
<tr>
<td>Index of Protection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solder Heat Resistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actuator Travel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Material

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

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

Actuator Options for PC Mount
### 1MS-Series Dimensional Specifications: in. [mm]

#### R7

- **Termination Options**

<table>
<thead>
<tr>
<th>Termination Options</th>
<th>Option Code</th>
<th>Dim. A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 Standard Solder Lug</td>
<td>M1-1</td>
<td>0.711 [18.06]</td>
</tr>
<tr>
<td>M2 PC Thru-Hole</td>
<td>M2-1</td>
<td>0.711 [18.06]</td>
</tr>
<tr>
<td>M3 Quick Connect</td>
<td>M3-1</td>
<td>0.386 [9.80]</td>
</tr>
<tr>
<td>M5 Wire Wrap</td>
<td>M5-1</td>
<td>1.022 [25.97]</td>
</tr>
</tbody>
</table>

#### M6 Single Pole

- **Actuator Options for PC Mount**

#### M6 Double Pole

#### M6 Three Pole

#### M7 Single Pole
1MS-Series Dimensional Specifications: in. [mm]

**Termination Options**

### M7 Double Pole

- **EPOXY SEAL**
- **DIM.'A'**
  - OPTION CODE: VS2
  - DIM.'A': .461 [11.70]
  - OPTION CODE: VS3
  - DIM.'A': .630 [16.00]

### M7 Three Pole

- **EPOXY SEAL**
- **DIM.'A'**
  - OPTION CODE: VS2
  - DIM.'A': .461 [11.70]
  - OPTION CODE: VS3
  - DIM.'A': .630 [16.00]

### VS2-VS3 Single Pole

- **EPOXY SEAL**
- **DIM.'A'**
  - OPTION CODE: VS2
  - DIM.'A': .461 [11.70]
  - OPTION CODE: VS3
  - DIM.'A': .630 [16.00]

### VS2-VS3 Double Pole

- **EPOXY SEAL**
- **DIM.'A'**
  - OPTION CODE: VS2
  - DIM.'A': .461 [11.70]
  - OPTION CODE: VS3
  - DIM.'A': .630 [16.00]

### U2-VS3 Three Pole

- **EPOXY SEAL**
- **DIM.'A'**
  - OPTION CODE: U2
  - DIM.'A': .551 [14.00]
  - OPTION CODE: VS3
  - DIM.'A': .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</td>
</tr>
<tr>
<td>VS5</td>
<td>.630</td>
</tr>
</tbody>
</table>

**P.C.MOUNTING**

**VS4-VS5 Single Pole**

**Option Code**

<table>
<thead>
<tr>
<th>DIM.’A’</th>
</tr>
</thead>
<tbody>
<tr>
<td>.050</td>
</tr>
<tr>
<td>.050</td>
</tr>
<tr>
<td>.030</td>
</tr>
</tbody>
</table>

**Snap-In Termination Options**

<table>
<thead>
<tr>
<th>M61</th>
<th>VS21, VS31</th>
</tr>
</thead>
</table>

| VS41, VS51 | |

* 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**: 1.155 (29.30) × 0.374 (9.50)
- **R2**: 0.30 (7.62) × 0.185 (4.70)
- **R3**: 0.30 (7.62) × 0.185 (4.70)
- **R4**: 0.30 (7.62) × 0.185 (4.70)

Double Pole

- **R1**: 1.155 (29.30) × 0.374 (9.50)
- **R2**: 0.30 (7.62) × 0.185 (4.70)
- **R3**: 0.30 (7.62) × 0.185 (4.70)
- **R4**: 0.30 (7.62) × 0.185 (4.70)

Three Pole

- **R1**: 1.155 (29.30) × 0.374 (9.50)
- **R2**: 0.30 (7.62) × 0.185 (4.70)
- **R3**: 0.30 (7.62) × 0.185 (4.70)
- **R4**: 0.30 (7.62) × 0.185 (4.70)

Four Pole

- **R1**: 1.155 (29.30) × 0.374 (9.50)
- **R2**: 0.30 (7.62) × 0.185 (4.70)
- **R3**: 0.30 (7.62) × 0.185 (4.70)
- **R4**: 0.30 (7.62) × 0.185 (4.70)

Actuator Options for Panel Rear Mount

- **R1**: 0.95 (23.62) × 0.374 (9.50)
- **R2**: 0.95 (23.62) × 0.30 (7.62)
- **R3**: 1.634 (41.60) × 1.378 (35.00)
- **R4**: 1.634 (41.60) × 1.378 (35.00)
1M1-Series Dimensional Specifications: in. [mm]

Actuator Options for Panel Rear Mount

R5

Actuator Options for Snap-In Mount

R6

Actuator Options for PC Mount

R1

R2

R3

R4

Actuator Options for Panel Rear Mount

R6" WITHOUT FRAME

PANEL MOUNTING


R7

R7 WITHOUT FRAME

PANEL MOUNTING


PANEL THICKNESS

R5

R6

R7

R1

R2

R3

R4

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

#### Actuator Options for PC Mount

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5-1</td>
<td>.750 [19.05]</td>
</tr>
<tr>
<td>M5-2</td>
<td>.664 [17.39]</td>
</tr>
<tr>
<td>M5-3</td>
<td>.425 [10.80]</td>
</tr>
<tr>
<td>M5-4</td>
<td>1.062 [26.97]</td>
</tr>
</tbody>
</table>

#### Termination Options

**M1 Standard Solder Lug**
- THK .030 [0.75]

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

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

**M5 Wire Wrap**

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5-1</td>
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<tr>
<td>M5-3</td>
<td>.425 [10.80]</td>
</tr>
<tr>
<td>M5-4</td>
<td>1.062 [26.97]</td>
</tr>
</tbody>
</table>

**M6 Single Pole**

**M6 Double Pole**

**M7 Single Pole**

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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**

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**P.C.MOUNTING**

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

Termination Options

**VS4-VS5 Single Pole**

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

**VS4-VS5 Double Pole**

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

**U4-VS5 Three Pole**

<table>
<thead>
<tr>
<th>OPTION</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>

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.
Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit [www.carlingtech.com/findarep](http://www.carlingtech.com/findarep).

About Carling

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

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