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

### Electrical
- **Contact Rating**: refer to ordering scheme
- **Electrical Life**: 
  - **1S1-Series**: 30,000 make & break cycles @ full load
  - **1SS & 1SM-Series**: 50,000 make & break cycles @ full load
- **Contact Resistance**: 20 mΩ max. @ 2-4 VDC
- **Insulation Resistance**: 1000 MΩ min.
- **Dielectric Strength**: 1500 Volts RMS @ sea level
- **Actuator Travel**: 25°

### Material
- **Case**: all UL94 V-0
- **1S1-Series**: Dially phthalate (DAP)
- **1SS-Series**: Glass filled nylon 6/6, flame retardant, heat stabilized
- **1SM-Series**: Glass filled nylon 4/6, flame retardant, heat stabilized
- **1S1-Series**: Nylon (UL 94V-0)
- **1SS & 1SM-Series**: Nylon, black standard, internal o-ring sealed
- **1S1-Series**: Brass, nickel plated
- **1SS-Series**: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0)
- **1SM-Series**: Glass filled nylon 4/6, flame retardant, heat stabilized (UL 94V-0)
- **1S1-Series**: Stainless Steel
- **1S1 & 1SM-Series**: Brass, tin plated

### 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°

### 1S1-Series - General Specifications, 1SS Ordering Scheme

#### 1SS - WMSP 1 - R2 / M2 G E

<table>
<thead>
<tr>
<th>1 Series</th>
<th>2 Poles</th>
<th>3 Circuit</th>
<th>4 Actuator Style</th>
<th>5 Actuator Color</th>
<th>6 Contact</th>
<th>7 Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S1</td>
<td>WMSP</td>
<td>R2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Series</td>
<td>Poles</td>
<td>Circuit</td>
<td>Style</td>
<td>Color</td>
<td>Contacts</td>
<td>Seal</td>
</tr>
<tr>
<td>1</td>
<td>WMSP</td>
<td>R2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>SS</td>
<td>Single pole - uses terminals 1, 2, 3 &amp; 3</td>
<td>Double pole - uses terminals 1, 2, 3, 4, 5 &amp; 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 6 TERMINATION
- **M1**: Solder Lug
- **M2**: PCB
- **M6**: PC Mount, 90° horizontal
- **M7**: PC Mount, 90° vertical
- **VS2**: PC Mount, U bracket

See page 6-7 for dimensional specifications.

#### 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</td>
<td>gold over silver</td>
<td>3A 125VAC or 28VDC</td>
<td>IP67</td>
</tr>
<tr>
<td>K</td>
<td>0.4VA max</td>
<td>20V max (AC/DC)</td>
<td>IP67</td>
</tr>
<tr>
<td>P</td>
<td>tin 4</td>
<td>3A 125VAC or 28VDC</td>
<td>IP67</td>
</tr>
<tr>
<td>R</td>
<td>gold 2,3</td>
<td>0.4VA max</td>
<td>20V max (AC/DC)</td>
</tr>
</tbody>
</table>

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

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

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

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**Email**: sales@carlingtech.com  
**Application Support**: team2@carlingtech.com  
**Phone**: (860) 793-9281  
**Fax**: (860) 793-9231  
**www.carlingtech.com**
## 1S-Series - 1S1 Ordering Scheme, 1SM Ordering Scheme

<table>
<thead>
<tr>
<th>Series</th>
<th>Poles</th>
<th>Circuit</th>
<th>Actuator Style</th>
<th>Actuator Color</th>
<th>Termination</th>
<th>Contacts</th>
<th>Seal</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1S1</td>
<td>MSP</td>
<td>R2</td>
<td>M6</td>
<td>Q</td>
<td>M1 M2 M6 M7</td>
<td>1 2</td>
<td>6 7</td>
<td>8 9</td>
</tr>
</tbody>
</table>

### 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
- **( )** - momentary
- **Position:** 1-2-3, 5-6
- **Connected Terminals:** 2-1, 5-4
- **1 ON**: OFF (ON)
- **2 ON**: OFF (ON)
- **3 ON**: OFF (ON)
- **4 (ON)**: OFF (ON)
- **5 ON**: OFF (ON)

### 4 ACTUATOR STYLE
- **R1** Small Rocker
- **R2** Narrow Black Rocker
- **R3** Medium Rocker

### 5 ACTUATOR COLOR
- **1** White
- **2** Black
- **3** Red
- Other colors available, consult factory.

### 6 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

### 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 1</td>
<td>gold over silver</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC</td>
<td></td>
</tr>
<tr>
<td>K gold 2</td>
<td>tin 3</td>
<td>0.4VA max 20V max (AC/DC) N/A</td>
<td></td>
</tr>
<tr>
<td>P silver 1</td>
<td>tin 3</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC</td>
<td></td>
</tr>
<tr>
<td>Q silver 1</td>
<td>silver 1</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC</td>
<td></td>
</tr>
<tr>
<td>R gold 2</td>
<td>gold 2</td>
<td>0.4VA max 20V max (AC/DC) N/A</td>
<td></td>
</tr>
</tbody>
</table>

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

### Notes:
- Tin option available with M1 termination.
- Movable contact and terminal platings: silver over copper alloy
- Terminal platings: tin over nickel over copper alloy

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## 1SM-Series - WMSP Ordering Scheme

<table>
<thead>
<tr>
<th>Series</th>
<th>Poles</th>
<th>Circuit</th>
<th>Actuator Style</th>
<th>Termination</th>
<th>Contacts</th>
<th>Seal</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SM</td>
<td>WMSP</td>
<td>R2</td>
<td>M2 G E</td>
<td></td>
<td>1 2</td>
<td>6 7</td>
<td>8 9</td>
</tr>
</tbody>
</table>

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

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

### 3 CIRCUIT
- **( )** - momentary
- **Position:** 1-2-3
- **Connected Terminals:** 2-1
- **1 ON**: OFF (ON)
- **2 ON**: OFF (ON)
- **3 ON**: OFF (ON)
- **4 (ON)**: OFF (ON)
- **5 ON**: OFF (ON)

### 4 ACTUATOR STYLE
- **R2** Narrow Black Rocker

### 5 TERMINATION
- **M6** Surface Mount, 90° flat - horizontal / side
- **S6** Surface Mount, 90° horizontal / back
- **S7** Surface Mount, 90° vertical

### 6 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 1</td>
<td>gold over silver</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC</td>
<td></td>
</tr>
<tr>
<td>K gold 2.5</td>
<td>tin 4</td>
<td>0.4VA max 20V max (AC/DC) IP67</td>
<td></td>
</tr>
<tr>
<td>P silver 1.6</td>
<td>tin 4</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC IP67</td>
<td></td>
</tr>
<tr>
<td>Q silver 1</td>
<td>silver 1</td>
<td>3A 125VAC or 28VDC, 1.5A 250VAC IP67</td>
<td></td>
</tr>
<tr>
<td>R gold 2</td>
<td>gold 3</td>
<td>0.4VA max 20V max (AC/DC) IP67</td>
<td></td>
</tr>
</tbody>
</table>

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

### Notes:
- Tin option not available with M1 termination.
- Movable contact and terminal platings: silver over copper alloy
- Movable contact platings: gold over nickel over copper alloy
- Terminal platings: tin over copper alloy

### 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 not available with M1 termination.
- Movable contact and terminal platings: silver over copper alloy
- Movable contact platings: gold over nickel over copper alloy
- Terminal platings: tin over nickel over copper alloy
- Terminal contact platings: silver over nickel alloy

---

Email: sales@carlingtech.com  Application Support: team2@carlingtech.com  
Phone: (860) 793–9281  Fax: (860) 793–9231  www.carlingtech.com
1SS-Series Dimensional Specifications: in. [mm]

### Single Pole

- **Actuator Options**
  - **R1**
    - THK .020 [0.50]

- **Termination Options**
  - **M1**
    - STD. Solder Lug
    - THK .020 [0.50]
  - **M2**
    - PC Thru-Hole

### Double Pole

- **Actuator Options**
  - **R2**
    - THK .020 [0.50]

- **Termination Options**
  - **M6**
    - Single Pole
    - Double Pole
    - P.C. MOUNTING

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

**Termination Options**

**M7 Single Pole**
- EPOXY SEAL
- P.C.MOUNTING

**M7 Double Pole**
- EPOXY SEAL
- P.C.MOUNTING

**VS2 Single Pole**
- EPOXY SEAL
- P.C.MOUNTING

**VS2 Double Pole**
- EPOXY SEAL
- P.C.MOUNTING

**Snap-In Termination Options**

**M61**
- EPOXY SEAL

**M71**
- EPOXY SEAL

**VS21**
- EPOXY SEAL

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

### Single Pole

<table>
<thead>
<tr>
<th>Actuator Options</th>
<th>Termination Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>M1 STD. Solder Lug</td>
</tr>
<tr>
<td></td>
<td>Double Pole</td>
</tr>
<tr>
<td></td>
<td>M2 PC Thru-Hole</td>
</tr>
<tr>
<td></td>
<td>M6 Single Pole</td>
</tr>
<tr>
<td></td>
<td>M6 Double Pole</td>
</tr>
<tr>
<td></td>
<td>P.C.MOUNTING</td>
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</tbody>
</table>

### Double Pole

#### 1S1-Series Dimensional Specifications: in. [mm]
1S1-Series Dimensional Specifications: in. [mm]

Termination Options

M7 Single Pole

M7 Double Pole

VS2-VS3 Single Pole

VS2-VS3 Double Pole

Snap-In Termination Options

* PC Mounting for M61, M71, VS21 refer to M6, M7, VS2 respectively.
1SM-Series Dimensional Specifications: in. [mm]
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Worldwide Headquarters
Carling Technologies, Inc.
60 Johnson Avenue, Plainville, CT 06062
Phone: 860.793.9281  Fax: 860.793.9231
Email: sales@carlingtech.com

Northern Region Sales Office: nrsm@carlingtech.com
Southeast Region Sales Office: sersm@carlingtech.com
Midwest Region Sales Office: mrsm@carlingtech.com
West Region Sales Office: wrsm@carlingtech.com
Latin America Sales Office: larqm@carlingtech.com

Asia-Pacific Headquarters
Carling Technologies, Asia-Pacific Ltd.,
Suite 1607, 16/F Tower 2, The Gateway,
Harbour City, 25 Canton Road,
Tsimshatsui, Kowloon, Hong Kong
Phone: Int + 852-2737-2277  Fax: Int + 852-2736-9332
Email: sales@carlingtech.com.hk

Shenzhen, China: shenzhen@carlingtech.com
Shanghai, China: shanghai@carlingtech.com
Pune, India: india@carlingtech.com
Kaohsiung, Taiwan: taiwan@carlingtech.com
Yokohama, Japan: japan@carlingtech.com

Europe | Middle East | Africa Headquarters
Carling Technologies LTD
4 Airport Business Park, Exeter Airport,
Clyst Honiton, Exeter, Devon, EX5 2UL, UK
Phone: Int + 44 1392.364422  Fax: Int + 44 1392.364477
Email: ltd.sales@carlingtech.com

Germany: gmbh@carlingtech.com
France: sas@carlingtech.com

Carling Technologies®