6-position Horizontal Type

Pulse switching (20 pulses) model available in same shape

**Typical Specifications**

<table>
<thead>
<tr>
<th>Items</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotary switch (Resistive load)</td>
<td>0.1A 16V DC / 50μA 3V DC</td>
</tr>
<tr>
<td>Contact resistance</td>
<td>50mΩ max. / 150mΩ max.</td>
</tr>
<tr>
<td>Rotational torque</td>
<td>40±20 mN m / 15±7 mN m</td>
</tr>
<tr>
<td>Operating life</td>
<td>Without load 10,000 cycles / With load 10,000 cycles (0.1A 16V DC)</td>
</tr>
</tbody>
</table>

**Product Line**

<table>
<thead>
<tr>
<th>Number of wafers</th>
<th>Poles</th>
<th>Positions</th>
<th>Changeover angle</th>
<th>Changeover timing</th>
<th>Actuator configuration</th>
<th>Actuator length (mm)</th>
<th>Minimum order unit (pcs.)</th>
<th>Product No.</th>
<th>Drawing No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>30±3°</td>
<td>Flat</td>
<td>18-tooth serration</td>
<td>L=15</td>
<td>360</td>
<td>SRBM120700</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>30±3°</td>
<td>Flat</td>
<td>18-tooth serration</td>
<td>L=20</td>
<td>210</td>
<td>SRBM121300</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>30±3°</td>
<td>Flat</td>
<td>18-tooth serration</td>
<td>L=15</td>
<td>360</td>
<td>SRBM131300</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>Non shorting</td>
<td>Flat</td>
<td>18-tooth serration</td>
<td>L=20</td>
<td>210</td>
<td>SRBM140700</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>18±3°</td>
<td>Flat</td>
<td>18-tooth serration</td>
<td>L=15</td>
<td>360</td>
<td>SRBM149501</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>20 pulses</td>
<td>6</td>
<td>18±3°</td>
<td>Flat</td>
<td>18-tooth serration</td>
<td>L=15</td>
<td>360</td>
<td>SRBM149501</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note**

All the axis are die casting shafts.

**Packing Specifications**

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Number of packages (pcs.)</th>
<th>Export package measurements (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRBM120700</td>
<td>360</td>
<td>400×270×290</td>
</tr>
<tr>
<td>SRBM121300</td>
<td>360</td>
<td>1,800</td>
</tr>
<tr>
<td>SRBM131300</td>
<td>360</td>
<td>1,800</td>
</tr>
<tr>
<td>SRBM140700</td>
<td>360</td>
<td>1,800</td>
</tr>
<tr>
<td>SRBM150500</td>
<td>210</td>
<td>1,050</td>
</tr>
<tr>
<td>SRBM154002</td>
<td>210</td>
<td>1,050</td>
</tr>
<tr>
<td>SRBM160700</td>
<td>210</td>
<td>1,050</td>
</tr>
<tr>
<td>SRBM1L0800</td>
<td>210</td>
<td>1,050</td>
</tr>
<tr>
<td>SRBM1L1400</td>
<td>210</td>
<td>1,050</td>
</tr>
</tbody>
</table>

Refer to P.139 for shaft configurations.

Refer to P.145 for soldering conditions.
**Dimensions**

**Single-shaft Type**

<table>
<thead>
<tr>
<th>No.</th>
<th>Style</th>
<th>PC board mounting hole dimensions (Viewed from direction A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rotary switch</td>
<td><img src="image1" alt="Rotary switch diagram" /></td>
</tr>
<tr>
<td>2</td>
<td>Pulse switch</td>
<td><img src="image2" alt="Pulse switch diagram" /></td>
</tr>
</tbody>
</table>

**Notes**

1. For position 2 to 4, 1 section consists of 2-pole.
2. For position 5 and 6, 1 section consists of 1-pole.

※ 1: Circuit steps are position 2 to 5 at front and position 1 to 4 at rear. (External wiring to common terminal is required.)

※ 2: Circuit steps are position 3 to 6 at front and position 1 to 4 at rear. (External wiring to common terminal is required.)

---

**Pulse Switch Circuit Diagram**

C.W.: 1: ON during changeover only
C.W.: 2: ON during changeover only

**Rotary Switch Circuit Diagram**

(Viewed from Direction A of Below Diagram)

Rear (Rear circuit viewed from shaft direction)
Front (Front circuit viewed from shaft direction)
Dummy Terminals

<table>
<thead>
<tr>
<th>Number of positions</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>6</td>
<td>③</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Rear</td>
<td>③</td>
<td>④</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

18-tooth Serration Shaft
The shaft shows the position in which it is turned fully counterclockwise.

Details About Serration
(1) The mold dimensions of standard serration and the dimensions of test jigs are as shown in the figure at left.
(2) Position of the serration bottom
When the shaft is turned fully counterclockwise, the position of the serration bottom is on the AA line.
(3) Slitting angle
The slitting angle (position) is not specified.

Flat Shaft
The shaft shows the position in which it is turned fully counterclockwise.

Attached Parts

<table>
<thead>
<tr>
<th>Unit:mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal nut</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>a7.1</td>
</tr>
</tbody>
</table>

Note
Please be aware that shaft flatten angle is based on (PCB terminal direction)
## List of Varieties

<table>
<thead>
<tr>
<th>Series</th>
<th>SRBD</th>
<th>SRBQ</th>
<th>SRBM</th>
<th>SRBV</th>
<th>SRRM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insert</td>
<td>Reflow type</td>
<td>Rotary</td>
<td>Pulse</td>
<td></td>
</tr>
<tr>
<td>Photo</td>
<td><img src="image1" alt="Photo" /></td>
<td><img src="image2" alt="Photo" /></td>
<td><img src="image3" alt="Photo" /></td>
<td><img src="image4" alt="Photo" /></td>
<td><img src="image5" alt="Photo" /></td>
</tr>
</tbody>
</table>

### Angle of throw
- 36°
- 40°±3°
- 30°±3°
- 18°±3°
- 30°±3°

### Number of poles
- 1
- 1, 2
- 1
- 1, 2, 3, 4

### Rotational torque
- W: 13±5mN・m
- D: 6±3mN・m
- H: 12±5mN・m
- 40±20mN・m
- 15±7mN・m
- 13±5mN・m
- 80±30mN・m (Shorting)
- 70±30mN・m (Non shorting)

### Dimensions (mm)
- W: 10, 11.4, 10, 16.2
- D: 12.4, 12.5, 18.5
- H: 3.5, 3.5, 11, 7.5

### Operating temperature range
- −25°C to +85°C
- −10°C to +60°C
- −30°C to +85°C
- −10°C to +85°C
- −10°C to +60°C

### Automotive use
- —
- —
- —
- —

### Life cycle
- Rating (max./min.) (Resistive load)
  - 1mA 5V DC: 50μA 3V DC
  - 0.1A 18V DC: 50μA 3V DC
  - 0.3A 18V DC: 50μA 3V DC
  - 0.25A 30V DC: 50μA 3V DC

### Electrical performance
- Initial contact resistance
  - Operating life without load: 200mΩ max.
  - Operating life with load: 50mΩ max.
- Insulation resistance
  - 100MO min. 100V DC
  - 100MO min. 500V DC
- Voltage proof
  - 100V AC for 1 minute
  - 500V AC for 1 minute

### Mechanical performance
- Terminal strength
  - 3N for 1 minute
  - 5N for 1 minute
  - 10N for 1 minute
- Actuator strength
  - 50N
  - 20N
  - 100N
- Wobble of actuator
  - SRRM, SRBM, SRBQ, SRBV: 1N
  - The below table shows for SRRM, SRBM
  - The below table shows for SRBQ, SRBV
  - The below table shows for SRBM

### Environmental performance
- Cold
- −40°C 500h
- −20°C 96h
- −40°C 96h
- −20°C 96h
- Dry heat
- 85°C 500h
- Damp heat
- 60°C, 90 to 95%RH: 500h

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Rotary Switches / Soldering Conditions

**Example of Reflow Soldering Condition**

2. Temperature measurement: Thermocouple φ0.1 to 0.2 CA (K) or CC (T) at soldering portion (copper foil surface).
   A heat resisting tape should be used for fixed measurement.
3. Temperature profile

![Temperature profile diagram]

**Notes**

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc.
   The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

**Reference for Hand Soldering**

<table>
<thead>
<tr>
<th>Series (Reflow type)</th>
<th>Soldering temperature</th>
<th>Soldering time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRBQ, SRBM, SRBV, SRRM</td>
<td>350±10℃</td>
<td>3±1/0s</td>
</tr>
<tr>
<td>SRBQ (Reflow type)</td>
<td>350±5℃</td>
<td>3s max.</td>
</tr>
</tbody>
</table>

**Reference for Dip Soldering**

(For PC board terminal types)

<table>
<thead>
<tr>
<th>Series</th>
<th>Preheating temperature</th>
<th>Preheating time</th>
<th>Soldering temperature</th>
<th>Duration of immersion</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRBM</td>
<td>100℃ max.</td>
<td>60s max.</td>
<td>260±5℃</td>
<td>5s max.</td>
</tr>
<tr>
<td>SRBV, SRRM</td>
<td>—</td>
<td>260±5℃</td>
<td>10±1s</td>
<td></td>
</tr>
<tr>
<td>SRBQ</td>
<td>—</td>
<td>260±5℃</td>
<td>5±1s</td>
<td></td>
</tr>
</tbody>
</table>