



### ■ Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.25A 30V DC / 50 $\mu$ A 3V DC
Contact resistance (Initial / After operating life)		20m $\Omega$ max. / 60m $\Omega$ max.
Rotational torque	Shorting	80 $\pm$ 30mN·m
	Non-shorting	70 $\pm$ 30mN·m
Operating life	Without load	10,000 cycles
	With load	10,000 cycles (0.25A 30V DC)

### ■ Product Line

Poles	Positions	Changeover angle	Changeover timing	Actuator configuration	Actuator length (mm)	Minimum order unit (pcs.)		Product No.			
						Japan	Export				
1	12 Endless	30 $\pm$ 3°	Shorting	Round shaft with groove	15	60	240	<b>SRRM1C6200</b>			
					20			<b>SRRM1C5400</b>			
	5		Non shorting $\ast$ 1	Flat	15			<b>SRRM1C7800</b>			
	6		Shorting	Round shaft with groove	20			<b>SRRM254700</b>			
2	6				15			<b>SRRM262400</b>			
3					20			<b>SRRM264300</b>			
4	3			Flat	18-tooth serration			<b>SRRM342800</b>			
				Round shaft with groove				<b>SRRM433700</b>			

### Notes

- $\ast$ 1 Non-shorting type requires external wiring of common terminals.
- All the axis are die casting shafts.

### ■ Packing Specifications

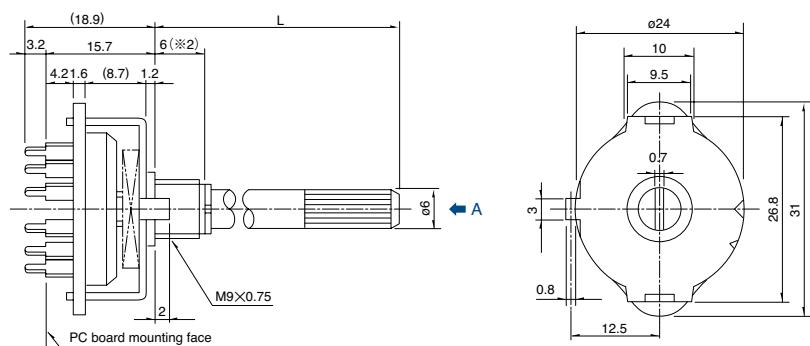
#### Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
60	240	400×270×270

### ■ Dimensions

Unit:mm

Style

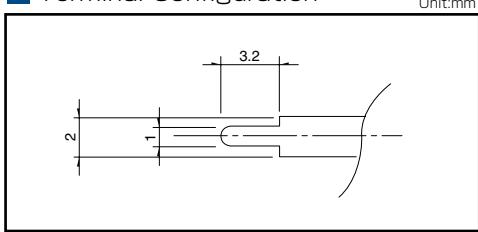


### Note

$\ast$ 2 Round-shaft with groove (shaft length 20mm) type are 8mm length.

Refer to P.144 for shaft configurations.  
Refer to P.148 for soldering conditions.

### ■ Terminal Configuration



### ■ Standard Circuit Diagram

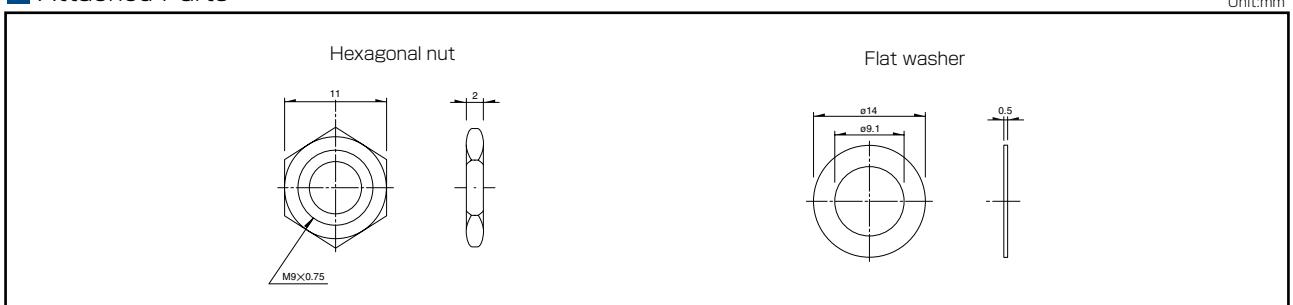
#### Shorting Circuit Diagram

	1-pole, 12-position	2-pole, 5-position	2-pole, 6-position	3-pole, 4-position	4-pole, 3-position
Circuit diagram					
PC board mounting hole dimensions (Viewed from the direction A)					

#### Non Shorting Circuit Diagram

	Circuit diagram	PC board mounting hole dimensions (Viewed from the direction A)
1-pole, 12-position		

### ■ Attached Parts



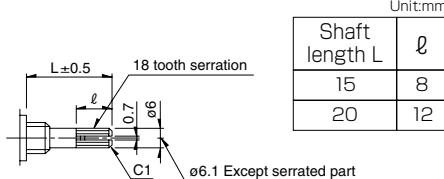
#### Notes

- The mark in the above table indicate a Lug position with the shaft turned fully counterclockwise when viewed from direction A of the diagrams.
- Note that the location of C terminal differs depending on the number of positions.
- External wiring is required if specified in the above diagrams.

### ■ 18-tooth Serration Shaft

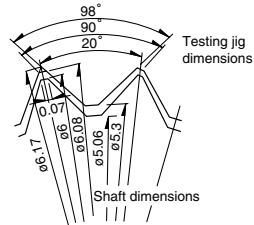
The shaft shows the position in which it is turned fully counterclockwise.

Die Casting Shaft



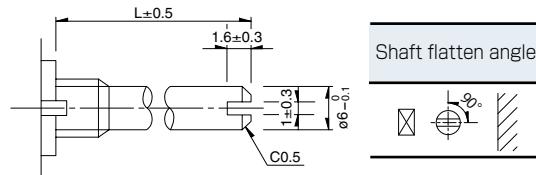
#### Details About Serration

- (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.



### ■ Round Shaft with Groove

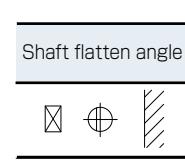
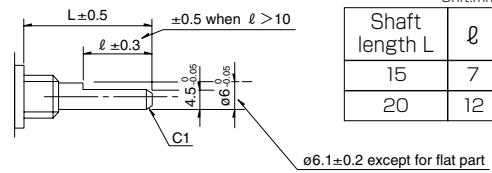
The shaft shows the position in which it is turned fully counterclockwise.



### ■ Flat Shaft

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

Die Casting Shaft



#### Note

SRRM Series are based on  (panel lug).

# Rotary Switches

## List of Varieties

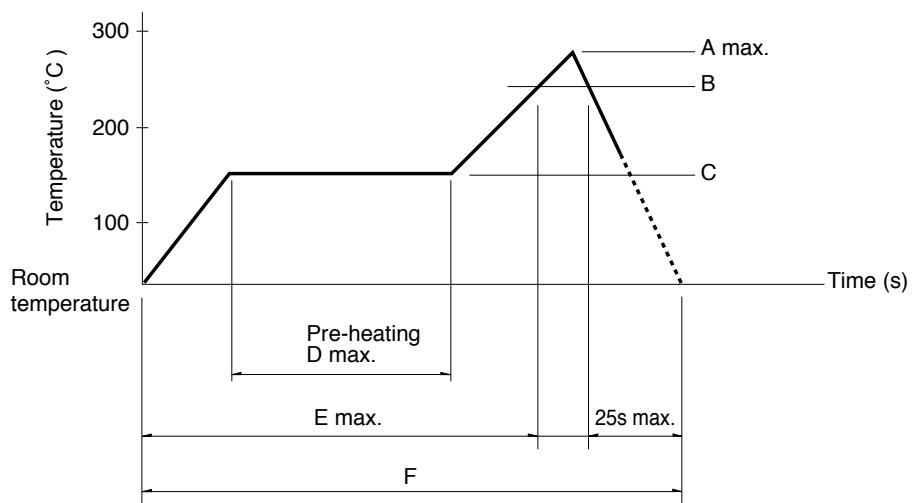
Detector	Slide	Push	Rotary	Power	Dual-in-line Package Type	Series		SRBD	SRBQ		SRBM		SRBV	SRRM	SRRN																																				
						Insertion	Reflow type		Rotary	Pulse																																									
Photo																																																			
Angle of throw		36°		40±3°		30±3°		18±3°				30±3°																																							
Number of poles		1				1, 2				1		1, 2, 3, 4		2, 3, 4																																					
Rotational torque		13±5mN·m		6±3mN·m 13±5mN·m		40±20mN·m 15±7mN·m		30±15mN·m		80±30mN·m (Shorting) 70±30mN·m (Non shorting)		70±30mN·m																																							
Dimensions (mm)	W	10	11.4		10		16.2				—	—																																							
	D		12.4		12.5		18.5																																												
	H	1.7	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		-30°C to +65°C																																							
Automotive use		—		—		—		—		—		—																																							
Life cycle																																																			
Rating (max.)/(min.) (Resistive load)		1mA 5V DC 50μA 3V DC				0.1A 16V DC 50μA 3V DC		0.3A 16V DC 50μA 3V DC		0.25A 30V DC 50μA 3V DC		0.15A 12V DC 50μA 3V DC																																							
Durability	Operating life without load	10,000 cycles 250mΩ max.		10,000 cycles 100mΩ max.		30,000 cycles 100mΩ max.		10,000 cycles 100mΩ max.		10,000 cycles 40mΩ max.		10,000 cycles 70mΩ max.																																							
	Operating life with load Load: as rating	10,000 cycles 250mΩ max.		10,000 cycles 100mΩ max.		10,000 cycles 150mΩ max.		10,000 cycles 60mΩ max.		10,000 cycles 100mΩ max.																																									
Electrical performance	Initial contact resistance	200mΩ max.				50mΩ max.				20mΩ max.		50mΩ max.																																							
	Insulation resistance					100MΩ min. 100V DC						100MΩ min. 500V DC																																							
	Voltage proof					100V AC for 1minute						500V AC for 1minute																																							
Mechanical performance	Terminal strength	3N for 1minute				5N for 1minute				10N for 1minute		5N for 1minute																																							
	Actuator strength	Operating direction	—		—		0.5N·m		—		0.6N·m				1N·m																																				
		Pulling direction	50N		20N				100N																																										
	Wobble of actuator		Load at the tip of shaft SRRM, SRBM, SRRN:5N, SRBQ, SRBV:1N		The below table shows for SRRM, SRBM, SRRN		The below table shows for SRBQ		The below table shows for SRBV																																										
			<table border="1"> <thead> <tr> <th>Measuring position from mounting surface</th> <th>Shaft wobble (max. value)</th> <th>Applicable mounting dimension</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>0.17</td> <td>15</td> </tr> <tr> <td>15</td> <td>0.25</td> <td>20</td> </tr> <tr> <td>20</td> <td>0.35</td> <td>25</td> </tr> <tr> <td>25</td> <td>0.42</td> <td>30</td> </tr> <tr> <td>30</td> <td>0.5</td> <td>above 35</td> </tr> </tbody> </table>		Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension	10	0.17	15	15	0.25	20	20	0.35	25	25	0.42	30	30	0.5	above 35	<table border="1"> <thead> <tr> <th>Distance from mounting surface to the tip of shaft</th> <th>Shaft wobble (max. value)</th> </tr> </thead> <tbody> <tr> <td>below 5</td> <td>0.5</td> </tr> <tr> <td>above 5 and below 10</td> <td>0.9</td> </tr> <tr> <td>above 10 and below 15</td> <td>1.2</td> </tr> </tbody> </table>		Distance from mounting surface to the tip of shaft	Shaft wobble (max. value)	below 5	0.5	above 5 and below 10	0.9	above 10 and below 15	1.2	<table border="1"> <thead> <tr> <th>Measuring position from mounting surface</th> <th>Shaft wobble (max. value)</th> <th>Applicable mounting dimension</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>0.2</td> <td>15</td> </tr> <tr> <td>15</td> <td>0.3</td> <td>20</td> </tr> <tr> <td>20</td> <td>0.4</td> <td>25</td> </tr> </tbody> </table>		Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension	10	0.2	15	15	0.3	20	20	0.4	25					
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												Unit:mm																																							
Environmental performance	Cold	-40°C 500h		-20°C 96h		-40°C 96h				-20°C 96h				-40°C 96h																																					
	Dry heat	85°C 500h								85°C 96h																																									
	Damp heat	60°C, 90 to 95%RH 500h						40°C, 90 to 95%RH 96h																																											
Page		133		135		137		140		142		145																																							

Rotary Switches Soldering Conditions ······ 148  
Rotary Switches Cautions ······ 149

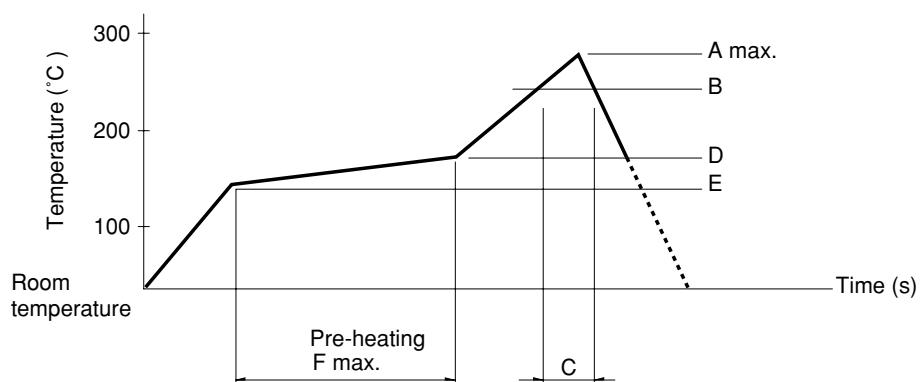
# Rotary Switches / Soldering Conditions

## ■ Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple  $\phi 0.1$  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



Series (Reflow type)	A (°C) 3s max.	B (°C)	C (°C)	D (s)	E (s)	F (s)
<b>SRBQ</b>	250	200	150±5	80 to 100	—	—



Series (Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
<b>SRBD</b>	260	230	40	180	150	120

**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

Series	Soldering temperature	Soldering time
<b>SRBQ, SRBM, SRBV, SRRM, SRRN</b>	$350\pm10^\circ\text{C}$	$3+1/0\text{s}$
<b>SRBQ (Reflow type)</b>	$350\pm5^\circ\text{C}$	3s max.

## ■ Reference for Dip Soldering

(For PC board terminal types)

Series	Items		Dip soldering	
	Preheating temperature	Preheating time	Soldering temperature	Duration of immersion
<b>SRBM</b>	100°C max.	60s max.	$260\pm5^\circ\text{C}$	5s max.
<b>SRBV, SRRM, SRRN</b>	—	—	$260\pm5^\circ\text{C}$	$10\pm1\text{s}$
<b>SRBQ</b>	—	—	$260\pm5^\circ\text{C}$	$5\pm1\text{s}$

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[SRRM254700](#)