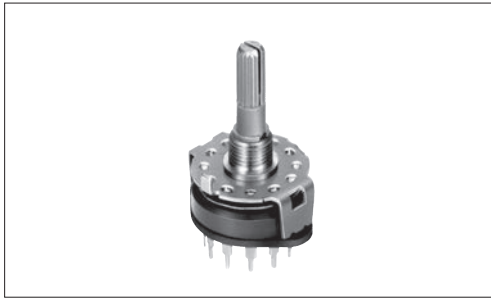


General-purpose type switch applicable to a wide range of electronic devices.



Typical Specifications

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

Detector

Slide

Push

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

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±3°	Shorting	Round shaft with groove	15	100	600	SRRM1C6200
					20			SRRM1C5400
Non shorting ※1			Flat					SRRM1C7800
2	5		Shorting	Round shaft with groove	15			SRRM254700
	6				20			SRRM262400
3	4		Flat					SRRM264300
4	3	Round shaft with groove			SRRM342800			
			18-tooth serration			SRRM433700		

Notes

1. Other varieties are also available. Please inquire.
2. ※ 1Non-shorting type requires external wiring of common terminals.
3. All the axis are die casting shafts.

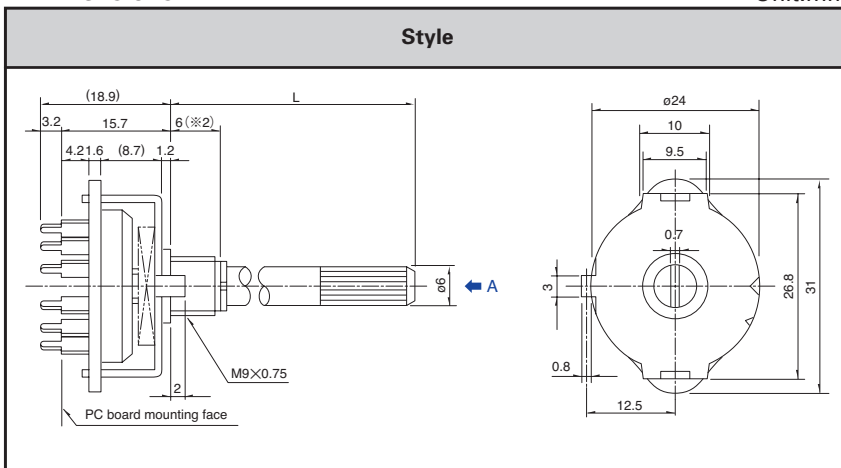
Packing Specifications

Bulk

Number of packages (pcs.)		Export package measurements (mm)
1 case / Japan	1 case/export packing	
100	600	369 × 349 × 367

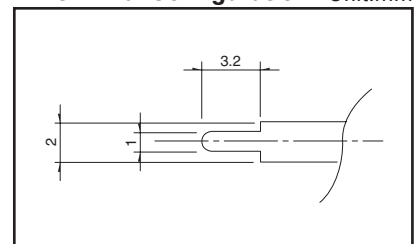
Dimensions

Unit:mm



Terminal Configuration

Unit:mm



Refer to P.150 for shaft configurations.
Refer to P.153 for soldering conditions.

Standard Circuit Diagram

Shorting Circuit Diagram

Unit:mm

	1-pole, 12-positions	2-poles, 5-positions	2-poles, 6-positions	3-poles, 4-positions	4-poles, 3-positions
Detector					
Slide					
Push					
Rotary					
Encoders					
Power					
Dual-in-line Package Type					
TACT Switch™					
PC board mounting hole dimensions (Viewed from the direction A)					

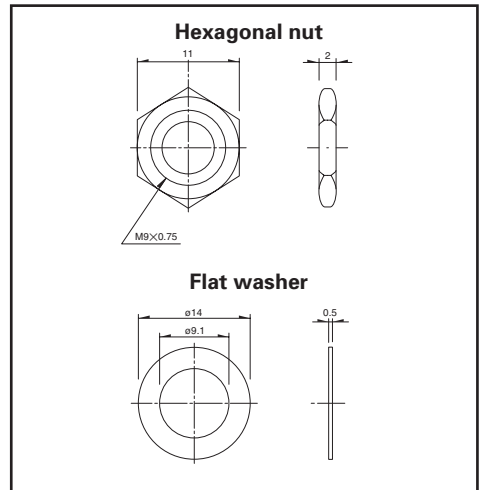
Non Shorting Circuit Diagram

Unit:mm

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

Attached Parts

Unit:mm

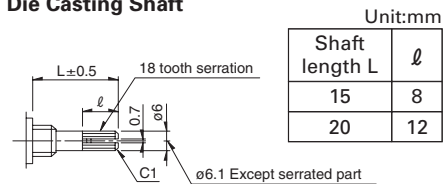


- Notes**
- The mark in the above table indicate a Lug position with the shaft turned fully counterclockwise when viewed from direction A of the diagrams.
 - Note that the location of C terminal differs depending on the number of positions.
 - External wiring is required if specified in the above diagrams.

18-tooth Serration Shaft

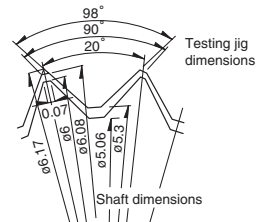
The shaft shows the position in which it is turned fully counterclockwise.

Die Casting Shaft



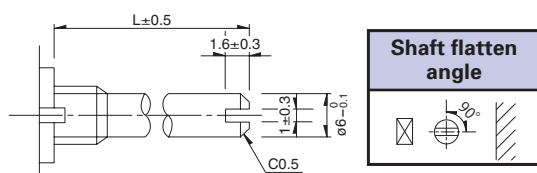
Details About Serration

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



Round Shaft with Groove

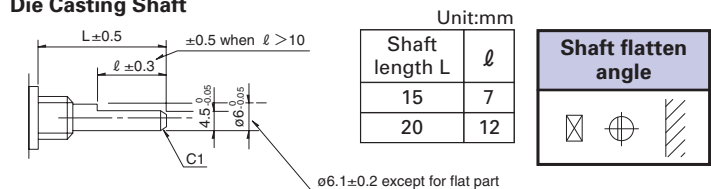
The shaft shows the position in which it is turned fully counterclockwise.



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

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 (Shoting) 70±30mN·m (Non shorting)																																							
Dimensions (mm)	W	10	11.4		10		16.2	—																																							
	D		12.4		12.5		18.5																																								
	H		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 50 μA 3V DC	0.1A 16V DC 50 μA 3V DC				0.3A 16V DC 50 μA 3V DC	0.25A 30V DC 50 μA 3V DC	0.15A 12V DC 50 μA 3V DC																																						
Durability	Operating life without load	10,000cycles 250mΩ max.	10,000cycles 100mΩ max.		30,000 cycles 100mΩ max.		10,000cycles 100mΩ max.	10,000cycles 40mΩ max.	10,000cycles 70mΩ max.																																						
	Operating life with load Load as rating	10,000cycles 250mΩ max.	10,000cycles 100mΩ max.		10,000cycles 150mΩ max.		10,000cycles 60mΩ max.	10,000cycles 100mΩ max.	10,000cycles 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	<p>Load at the tip of shaft SRRM, SRBM, SRRN: 5N, SRBQ, SRBV: 1N</p> <p>The below table shows for SRRM, SRBM, SRRN (Unit: mm)</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <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> <p>The below table shows for SRBQ (Unit: mm)</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <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> <p>The below table shows for SRBV (Unit: mm)</p> <table border="1" style="display: inline-table;"> <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	0.17	15	15	0.25	20	20	0.35	25	25	0.42	30	30	0.5	above 35	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	Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension	10	0.2	15	15	0.3	20	20	0.4
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																																													
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																																														
Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension																																													
10	0.2	15																																													
15	0.3	20																																													
20	0.4	25																																													
Environmental performance	Cold	-40±2°C for 500h	-20±2°C for 96h		-40±2°C for 96h		-20±2°C for 96h		-40±2°C for 96h																																						
	Dry heat	85±2°C for 500h	85±2°C for 96h																																												
	Damp heat	60±2°C, 90 to 95%RH for 500h	40±2°C, 90 to 95%RH for 96h																																												
Page		140	142		144		147	149	151																																						

- Rotary Switches Soldering Conditions 153
- Rotary Switches Cautions 154

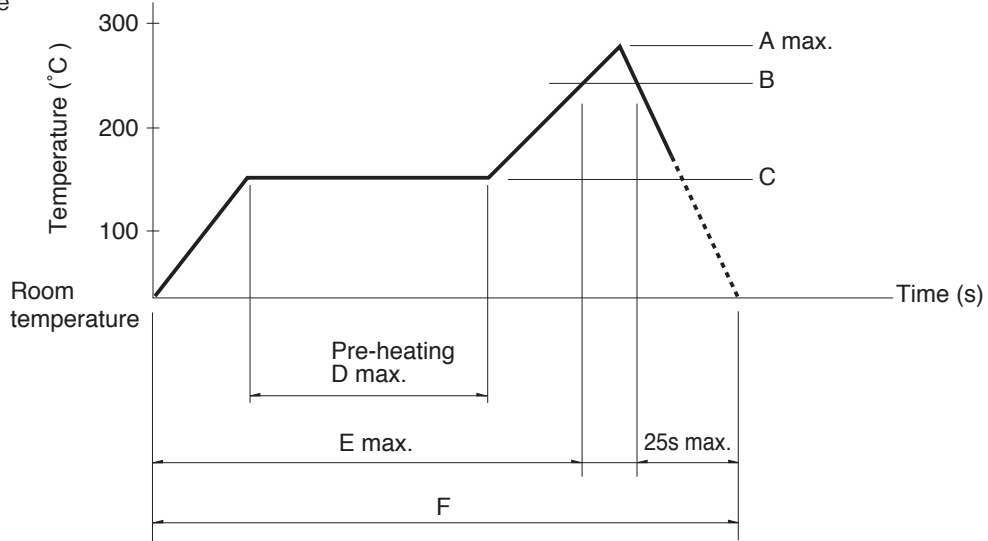
Note ● indicates applicability to all products in the series.

Detector
Slide
Push
Rotary
Encoders
Power
Dual-in-line Package Type
TACT Switch™

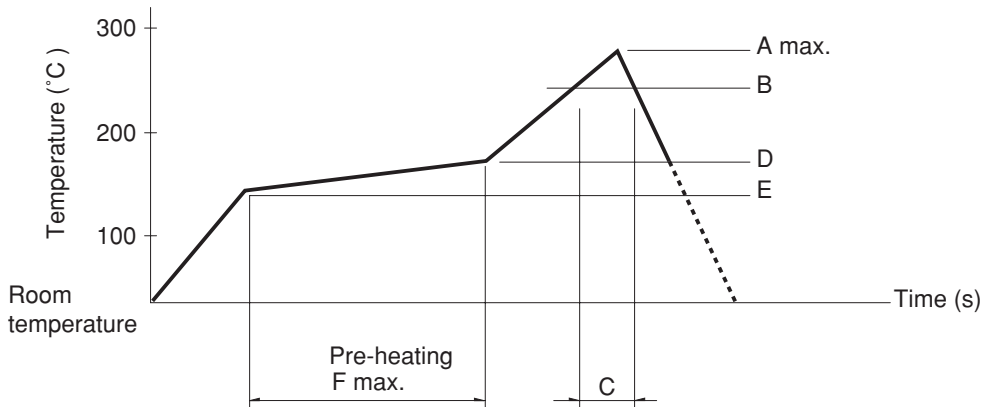
Rotary Switches Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 φ 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)
SRBQ	250	200	150±5	80 to 100	—	—



Series (Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
SRBD	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
SRBQ, SRBM, SRBV, SRRM, SRRN	350±10°C	3+1/0s
SRBQ (Reflow type)	350±10°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
SRBM	100°C max.	60s max.	260±5°C	5s max.
SRBV, SRRM, SRRN	—	—	260±5°C	10±1s
SRBQ	—	—	260±5°C	5±1s