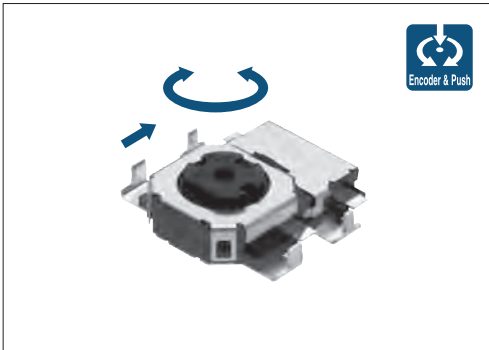


A compact multifunctional operating device that can be utilized on the side of the set device



■ Typical Specifications



Items		Specifications
Ratings (max.)/(min.) (Resistive load)		1mA 5V DC/50μA 3V DC
Output voltage	Jog portion	1V max. at 1mA 5V DC (Resistive load)
	Push portion	
Operating force (Push portion)		3.5±1.5N
Travel (Push operation)		0.2mm
Operating life	Jog portion	100,000 cycles
	Push portion	

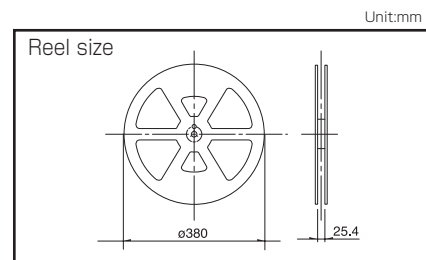
■ Product Line

Product No.	Number of detent	Number of pulse	Operating direction	Mounting method	Rotational torque (Jog portion)	Minimum order unit (pcs.)		Drawing No.
						Japan	Export	
<b>SRBE110301</b>	12	6	Horizontal	Standard	3±2mN·m	1,500	6,000	1
<b>SRBE210200</b>				Low-profile		1,300	5,200	2

■ Packing Specifications

Taping

Product No.	Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
	1 reel	1 case / Japan	1 case / export packing		
<b>SRBE110301</b>	1,500	3,000	6,000	24	428×413×172
<b>SRBE210200</b>	1,300	2,600	5,200		

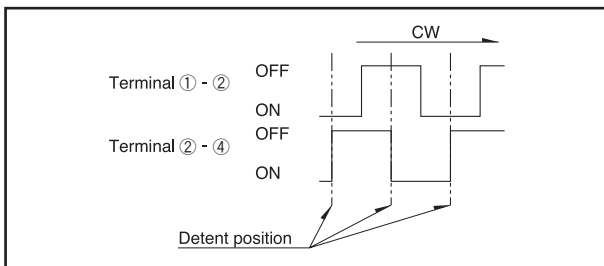


■ Dimensions

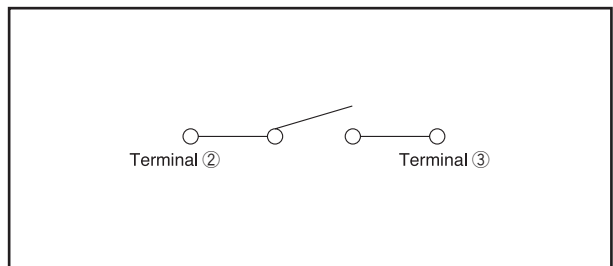
Unit:mm

No.	Style	PC board mounting hole dimensions (Viewed from direction A)
1	<p>Technical drawing of Style 1 switch. Top view shows a square body with a diameter of 7.4 mm and a width of 9.4 mm. It features a push stroke, a CW (clockwise) rotation arrow, and a push button. Terminals are labeled: Terminal No. ①, Ground terminal No. ⑥, Ground terminal No. ⑤, Terminal No. ④, Terminal No. ③, and Terminal No. ② (Common). A side view shows a height of 1.5 mm and a mounting hole diameter of 1.05 mm. A front view shows a width of 8.05 mm.</p>	<p>PC board mounting hole dimensions for Style 1, viewed from direction A. The mounting holes are arranged in a 2x2 grid. The distance between the centers of the holes is 7.2 mm horizontally and 10 mm vertically. The distance from the center of the grid to the center of each hole is 3.6 mm horizontally and 5.0 mm vertically. The hole diameter is 1.0 mm.</p>
2	<p>Technical drawing of Style 2 switch. Top view shows a square body with a diameter of 9 mm and a width of 10 mm. It features a push stroke, a CW (clockwise) rotation arrow, and a push button. Terminals are labeled: Terminal No. ①, Terminal No. ④, Terminal No. ③, and Terminal No. ② (Common). A side view shows a height of 1.05 mm and a mounting hole diameter of 1.05 mm. A front view shows a width of 11.6 mm and a height of 0.9 mm.</p>	<p>PC board mounting hole dimensions for Style 2, viewed from direction A. The mounting holes are arranged in a 2x2 grid. The distance between the centers of the holes is 8.8 mm horizontally and 10.6 mm vertically. The distance from the center of the grid to the center of each hole is 4.4 mm horizontally and 5.3 mm vertically. The hole diameter is 1.0 mm. A 4-Through hole is also shown with dimensions 1.35 mm and 2.05 mm.</p>

■ Output Signal (Encoder)





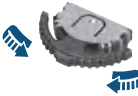





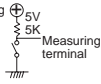
■ Circuit Diagram



Multi Control Devices  
Variable Resistor Type  
Switch Type

# Multi Control Devices

## List of Varieties

Type		Switch type					
Series		SKRH		SRBE	SLLB5 Compact type	SLLB	
		SKRHAA/AB	SKRHAC/AD				
Photo							
Dimensions (mm)	W	7.35/7.45		—	9.5	11.8	
	D	7.5		—	8.8	11.4	
	H	5		—	2.2	3	
Shaft material		Resin					
Directional resolution		4-direction		—	2-direction		
Directional operating feeling (tactile feeling)		With			Without		
Lever return mechanism		With		Without	With		
Center-push switch		With					
Encoder		Without		With	Without		
Operating temperature range		-40°C to +85°C		-10°C to +60°C		-40°C to +85°C	
Operating life	Without load	—		100,000 cycles			
	With load(10mA 5V DC)	—		100,000 cycles			
	With load(5mA 5V DC)	200,000 cycles for each direction	1,000,000 cycles for each direction	—	—	—	
Automotive use		—		—	—	—	
Life cycle (availability)							
Rating (max.) (Resistive load)		50mA 12V DC		1mA 5V DC	10mA 5V DC		
Electrical performance	Output voltage	—		1V max. at 1mA 5V DC (Resistive load)	—	1V max. at 1mA 5V DC (Resistive load) 	
	Encoder resolution	—		6 pluses/360°	—		
	Insulation resistance	100MΩ min. 100V DC		10MΩ min. 50V DC	100MΩ min. 100V DC		
	Voltage proof	100V AC for 1min.		50V AC for 1min.	100V AC for 1min.		
Mechanical performance	Directional operating force	1.23±0.69N	1.2±0.69N	—	0.65±0.3N		
	Push operating force	2.35±0.69N		3.5±1.5N	2.5±1N	2±1N	
	Encoder detent torque	—		3±2mN·m	—	—	
	Terminal strength	—				3N for 1min.	
	Actuator strength	—	—	—	50N		
Environmental performance	Cold	-40°C 96h		-30°C 96h	-20°C 96h	-40°C 96h	
	Dry heat	90°C 96h		85°C 96h			
	Damp heat	60°C, 90 to 95%RH 96h		40°C, 90 to 95%RH 96h			
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# Switch Type Multi Control Devices / Soldering Conditions

## Reference for Manual Soldering

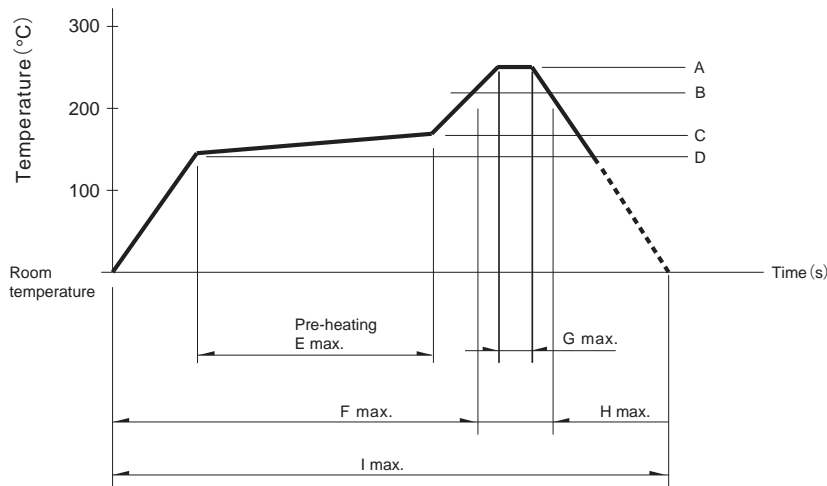
Series	Tip temperature	Soldering time	No. of solders
<b>RKJXT1F, RKJXM, RKJXL, SLLB, SLLB5, SRBE, SKRH</b>	350±5°C	3s max.	1 time

## Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
<b>RKJXT1F, RKJXM</b>	100°C max.	2 min. max.	260±5°C	5±1s	2 time max.
<b>RKJXL</b>	120°C max.	70s max.	260°C max.	6s max.	2 time max.

## 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	A	B	C	D	E	F	G	H	I	No. of reflows
<b>SLLB5</b>	250°C	230°C	150°C	150°C	—	2 min.	—	30s	—	1 time
<b>SLLB, SRBE</b>	260°C	230°C	180°C	150°C	2 min.	—	—	40s	—	1 time
<b>SKRH</b>	260°C	230°C	180°C	150°C	2 min.	—	3s	40s	3-4 min.	2 times

## Notes

1. The above temperature shall be measured 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 material, size thickness of PC boards and others. 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.

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