

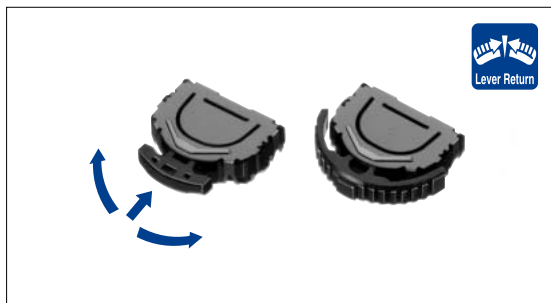
# Multi Control Devices Lever and Push Operation Type Switch

SLLB Series



Compact and low-profile horizontal type for various applications.

Multi Control  
Devices



## Typical Specifications

Items		Specifications
Rating( max. )( min. )( Resistive load )		10mA 5V DC/50 $\mu$ A 3V DC
Output voltage		1V max. at 1mA 5V DC ( Resistive load )
Operating force	Lever portion	0.65 $\pm$ 0.3N
	Push portion	2 $\pm$ 1N
Travel ( Push operation )		Refer to the dimensions.
Operating life	Without load	100,000cycles
	With load	100,000cycles( 10mA 5V DC )

## Product Line

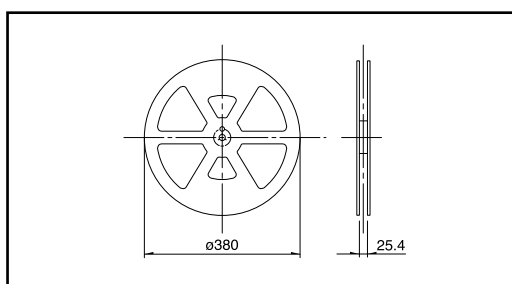
Actuator configuration	Push-on switch	Actuator color	Location lug	Minimum order unit( pcs. )	Product No.	Drawing No.
Standard type Mounting knob	With	Black only	With	5,400	SLLB120100	1
Standard type Mounting knob integrated		Gray			SLLB120200	
		Black			SLLB120300	
Bar type knob	Without	Black only			SLLB220900	2

Variable  
Resistor Type

Switch  
Type

## Taping Specification (Taping Packaging)

Reel Size Unit:mm



Number of packages( pcs. )			Tape width ( mm )
1 reel	1 case / Japan	1 case / export packing	
1,350	2,700	5,400	24

## Notes

1. Products other than those listed in the above chart are also available. Please contact us for details.
2. Please contact us for automotive use products.
3. Please place purchase orders per minimum order unit (integer).

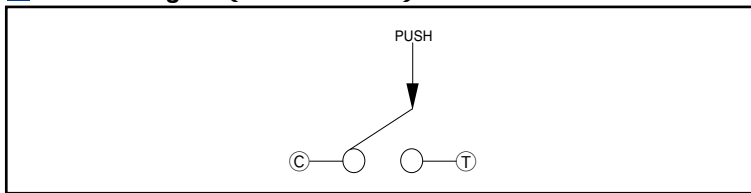
**Dimensions**

Unit:mm

No.	Style	PC board mounting hole and land dimensions (Viewed from mounting face)
1	<b>Mounting knob</b> <b>With push-on switch</b> 	
	<b>Mounting knob integrated</b> <b>With push-on switch</b> 	
2	<b>Bar type knob</b> 	

Variable Resistor Type  
**Switch Type**

**Circuit Diagram (Push Portion)**



**Code Table**

Code table (■ = ON)









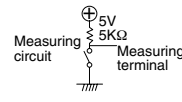
Standard type	Bar type knob
<b>Lever circuit</b> 	<b>Lever circuit</b> 
<b>Thin type</b> <b>Lever circuit</b> 	

# List of Varieties

Multi Control Devices

Variable Resistor Type

Switch Type

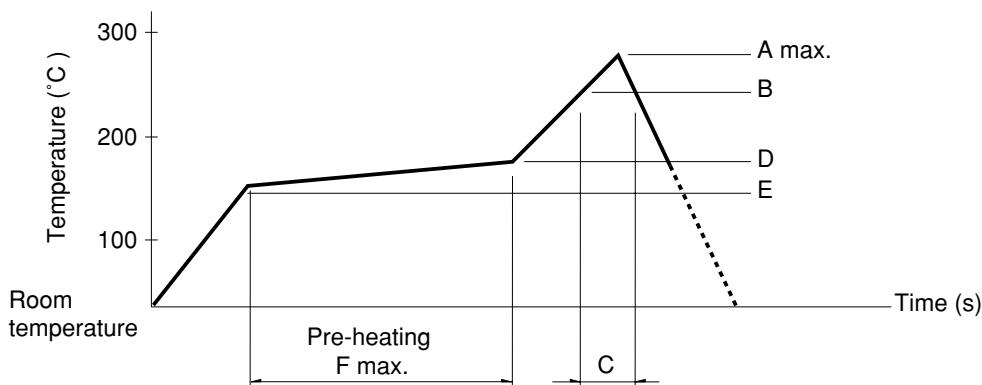
Series		Switch type						
		SKQU			SSAF	SRBE	SLLB	SLLB5 Small type
Items	SKQUAA/SKQUBA	SKQUCA	SKQUDB					
	Photo							
Function								
Dimensions (typical value) (mm)	W	10			10.85	12	11.8	9.5
	D					11	11.4	8.8
	H	7.1	10	8.6	3	3.8	3	2.2
Outlined specifications	Number of operating shafts	Single-shaft						
	Shaft material	Resin						
	Directional resolution	4-direction			8-direction	-	2-direction	
	Directional operating feeling	With			Without	With	Without	
	Lever return mechanism	With				Without	With	
	Center-push switch	With/Without			With		With/Without	With
Encoder	Without				With		Without	
Operating temperature range		-30 to +85			-10 to +60			
Rating (max. X Resistive load)		50mA 12V DC			20mA 5V DC	1mA 5V DC	10mA 5V DC	
Electrical performance	Output voltage	—————			1V max. at 1mA 5V DC (Resistive load)			
	Directional resolution	4-direction			8-direction	-	2-direction	
	Insulation resistance	100M min. 100V DC			10M min. 100V DC	50M min. 50V DC	100M min. 100V DC	
	Voltage proof	250V AC for 1min.			100V AC for 1min.	50V AC for 1min.	100V AC for 1min.	
	Directional operating force	1.57 <sup>+0.49</sup> / <sub>-0.59</sub> N	1.57 <sup>+0.39</sup> / <sub>-0.69</sub> N		0.5N <sup>+0.5</sup> / <sub>-0.35</sub> N	—————	0.65 ± 0.3N	
Mechanical performance	Push operating force	—————	3.14 ± 0.59N		2.5 <sup>+0.7</sup> / <sub>-0.5</sub> N	3.5 ± 1.5N	2 ± 1N	2.5 ± 1N
	Encoder detent torque	—————				3 ± 2mN·m		—————
	Terminal strength	—————						3N for 1min.
	Actuator strength	—————			50N			
Endurance	Vibration	10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively						
	Operating life without load	—————						100,000cycles
	Operating life with load (at rated load)	—————						
Environmental performance	Cold	-30 ± 2 for 96h			-40 ± 2 for 96h		-20 ± 2 for 96h	
	Dry heat	80 ± 2 for 96h			85 ± 2 for 96h			
	Damp heat	60 ± 2, 90 to 95%RH for 96h			40 ± 2, 90 to 95%RH for 96h			
Soldering	Manual soldering	350 max. 3s max.			350 ± 10 4 <sup>+</sup> 0s	350 ± 5 3s max.		
	Dip soldering	260 max. 5s max. ( SKQUAA,CA )						
	Reflow soldering	Please see P.492 ( SKQUBA,DB )						
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## 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 CA(K) or CC(T) at solder joints copper foil surface. A heat resistive tape should be used to fix thermocouple.
3. Temperature profile



Series( Reflow type )	A( ) 3s max.	B( )	C(s)	D( )	E( )	F(s)
RKJXS	260	230	40	150	150	120
SLLB, SLLB5	240		20			
SKRV/SKRH/SKQUBA,DB/SSAF/SRBE	260		40	180		

### 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.