

Multi Control Devices Lever and Push Operation Type Switch

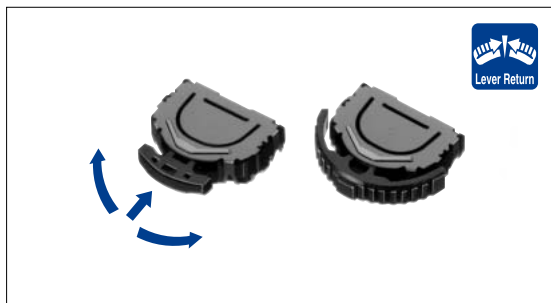
SLLB Series

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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 μ 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

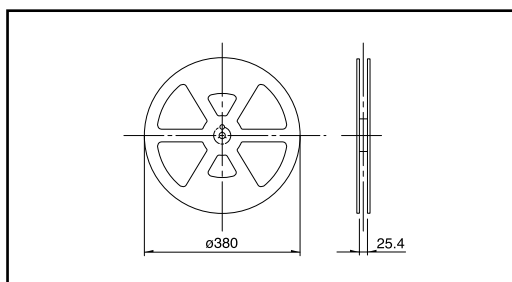
| Actuator configuration | Push-on switch | Actuator color | Location lug | Minimum order unit(pcs.) | Product No. | Drawing No. |
|--|----------------|----------------|--------------|----------------------------|-------------|-------------|
| Standard type Mounting knob | With | Black only | With | 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

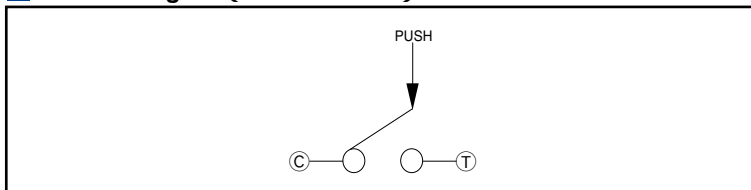
1. Products other than those listed in the above chart are also available. Please contact us for details.
2. Please contact us for automotive use products.
3. Please place purchase orders per minimum order unit (integer).

Dimensions

Unit:mm

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

Circuit Diagram (Push Portion)



Code Table

Code table (■ = ON)









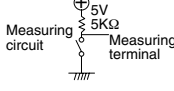
| Standard type | Bar type knob |
|--|--------------------------|
| Lever circuit | Lever circuit |
| Thin type Lever circuit | |

List of Varieties

Multi Control Devices

Variable Resistor Type

Switch Type

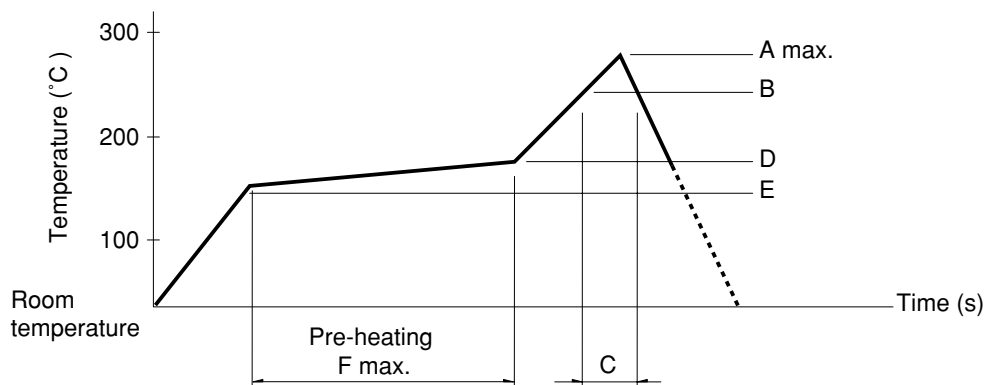
| Series | | Switch type | | | | | | |
|---------------------------------------|--|--|---|-----|---|---|--|---|
| | | SKQU | | | SSAF | SRBE | SLLB | SLLB5 Small type |
| Items | SKQUAA/SKQUBA | SKQUCA | SKQUDB | | | | | |
| | Photo | |  | | |  |  |  |
| Function | |  | | |  |  |  | |
| Dimensions (typical 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.) 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 ^{+0.49} / _{-0.59} N | 1.57 ^{+0.39} / _{-0.69} N | | 0.5N ^{+0.5} / _{-0.35} N | ————— | 0.65 ± 0.3N | |
| Mechanical performance | Push operating force | ————— | 3.14 ± 0.59N | | 2.5 ^{+0.7} / _{-0.5} 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 ⁺ 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.