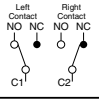
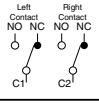
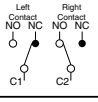
KL Series Miniature Key Lock Switches

High security tubular lock
Metal housing ensures high mounting strength.

- High security tubular key lock (commonly used for cash dispensers)
- A variety of key types (key Nos.) are available.
- Metal housing for mounting in ø19 mm oval hole
- High-performance microswitch contacts (gold or silver)
- Two keys are supplied.
- Custom-made keys (different key nos.) are available (made to order).

KL Series

Series	Position		Key Retained at ●		No. of Contacts	Part No.		Operator Position Contact Operation (Top View)		
						Silver Contact	Gold Contact	Left	Center	Right
KL	90° 2-Position	Maintained	B		SPDT	**KL2S-10B**	**KL2S-11B**		—	
					DPDT	**KL2S-20B**	**KL2S-21B**		—	
	45° 3-Position	Maintained	D		DPDT	**KL3S-20D**	**KL3S-21D**			

- Two keys are supplied. (For ordering spare keys, see page 179.)
- Different keys (different key nos.) are available (made to order). Master key is not available.

Specifications

Standard Operating Conditions	Operating temperature: −25 to +50°C (no freezing) Storage temperature: −30 to +70°C (no freezing) Operating humidity: 45 to 85% RH (no condensation)
Contact Resistance	50 mΩ maximum (initial value)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	Between live and dead parts: 2,500V, 1 minute Between live parts of different poles: 1,000V, 1 minute
Mechanical Life	30,000 operations minimum
Electrical Life	30,000 operations minimum
Vibration Resistance	Damage Limits/Operating Extremes: 5 to 55 Hz, amplitude 0.5 mm
Shock Resistance	Damage Limits: 1,000 m/s^2 Operating Extremes: 100 m/s^2
Terminal Style	Solder terminal (Connectable wire: 0.75 mm^2 × 2 wires max.)
Degree of Protection	IP40 (IEC 60529)
Housing Color	Chrome-plated (metallic)
Weight	45g (excluding key)

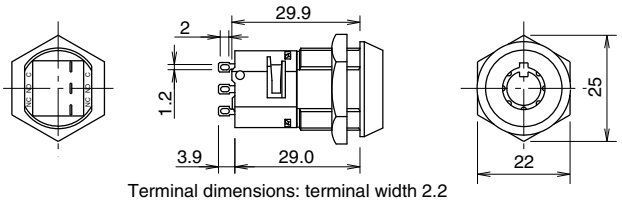
Contact Ratings (Microswitch)

Insulation Voltage	125V
Thermal Current	3A
Operating Voltage & Current	Silver contact microswitch: 125V AC, 1A (resistive load) 30V DC, 1A (resistive load) Gold contact microswitch: 30V DC, 0.1A (resistive load)
Operating Frequency	1,800 operations/hour

- Minimum applicable load (reference value): Gold contact microswitch 24V DC, 1 mA

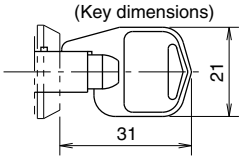
KL Series Miniature Key Lock Switches

Dimensions



Terminal dimensions: terminal width 2.2

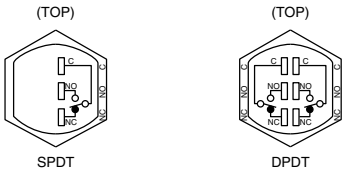
(Key dimensions)



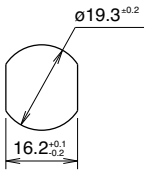
Spare Key
Ordering Part No.: KL9Z-SK-M2001
Package Quantity: 1

Terminal Arrangement

(Bottom View)



Panel Cut-out



Safety Precautions

- Turn off power to the switch before installation, removal, wiring, maintenance, and inspection. Failure to turn power off may cause electrical shocks or fire hazard.
- For wiring, use wires of proper size to meet the voltage and current requirements. Improper soldering may cause overheating and fire.

Instructions

Notes on Panel Mounting

- Use an optional locking ring wrench to mount the switch in a panel cut-out. Tightening torque should not exceed 2.94 N·m.

Wiring

- Solder the terminal at 330°C within 3 seconds, using a 60W soldering iron. Sn-Ag-Cu solder is recommended.
- When soldering, do not touch the switch housing with the soldering iron. Also ensure that no tensile force is applied to the terminals. Do not bend the terminals or apply excessive force to the terminals.
- Use a non-corrosive rosin flux.

Contacts

- When switching inductive loads, contact resistance is increased by arcing. Therefore, it is recommended to connect a contact protection circuit to ensure contact reliability.
- When using NO and NC contacts of the same microswitch, avoid connections of different voltages, or connections of different types of power supplies. Failure to observe this instruction may cause a short-circuit.

Different Keys (Different Key Nos.)

- If a key of a different No. is inserted, the switch does not work with normal operating force. However, if the switch is forcively operated, or if the key is incompletely inserted, the switch may operate.