

# KN Series Miniature Key Lock Switches

**Waterproof housing for mounting in  $\phi 19$  mm oval hole**

**The key slot includes a dustproof shutter.**

- Degree of protection: IP65 (IEC 60529)
- Dustproof shutter prevents entry of dust or chips.
- Stainless steel flange and shutter
- Reversible key (non-directional key)
- Two keys are supplied.



## KN Series

Series	Position		Key Retained at ●		No. of Contacts	Part No.		Operator Position Contact Operation (Top View)		
						Silver Contact	Gold Contact	Left	Center	Right
KN	90° 2-Position	Maintained	A		SPDT	KN2C-10A	KN2C-11A		—	
					DPDT	KN2C-20A	KN2C-21A		—	
			B		SPDT	KN2C-10B	KN2C-11B		—	
					DPDT	KN2C-20B	KN2C-21B		—	
	45° 3-Position	Maintained	A		DPDT	KN3C-20A	KN3C-21A			
			G		DPDT	KN3C-20G	KN3C-21G			

- The key can be inserted and removed at any position.
- Two keys are supplied. (For ordering spare keys, see page 177.)
- 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 AC, 1 minute Between live parts of different poles: 1,000V AC, 1 minute
Mechanical Life	50,000 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 <sup>2</sup> Operating Extremes: 100 m/s <sup>2</sup>
Terminal Style	Solder terminal (Connectable wire: 0.75 mm <sup>2</sup> × 2 wires max.)
Degree of Protection	IP65 (IEC 60529)
Housing Color	Chrome-plated (metallic)
Weight	45g (excluding key)

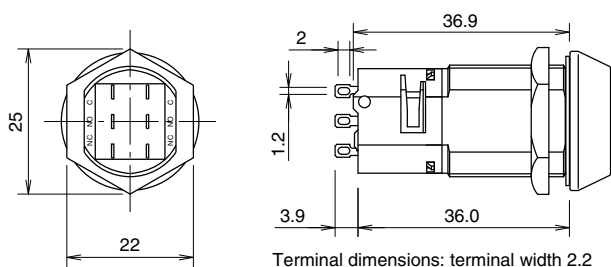
## Contact Ratings (Microswitch)

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

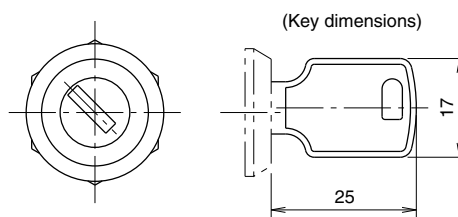
- Minimum applicable load (reference value): Gold contact micro-switch 24V DC, 1 mA

# KN Series Miniature Key Lock Switches

## Dimensions

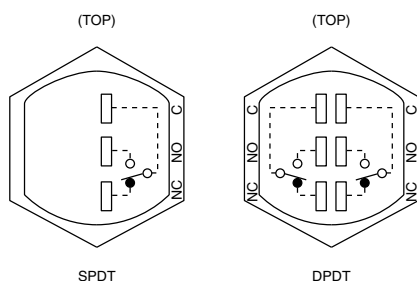


Terminal dimensions: terminal width 2.2

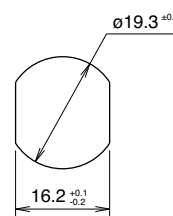


Spare Key  
Ordering No.: KN9Z-SK-V00PN02  
Package Quantity: 2  
(1.8 mm thick, Material: Nickel-plated brass)

## 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 unit onto a panel. 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 forcibly operated, or if the key is incompletely inserted, the switch may operate.

Flush  
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References