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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# MRK·MRKC

## Key Switches



RoHS Compliant

### ■ Features

#### 1. For PCB Mounting

Direct mounting to PC board. The terminal pin layout is in inch pitch.

#### 3. Smooth Operation

Steel ball adopted to click mechanism for smooth operation.

#### 2. High Contact Reliability

Gold-plated contact with self-cleaning, twin contact mechanism provides high contact reliability.

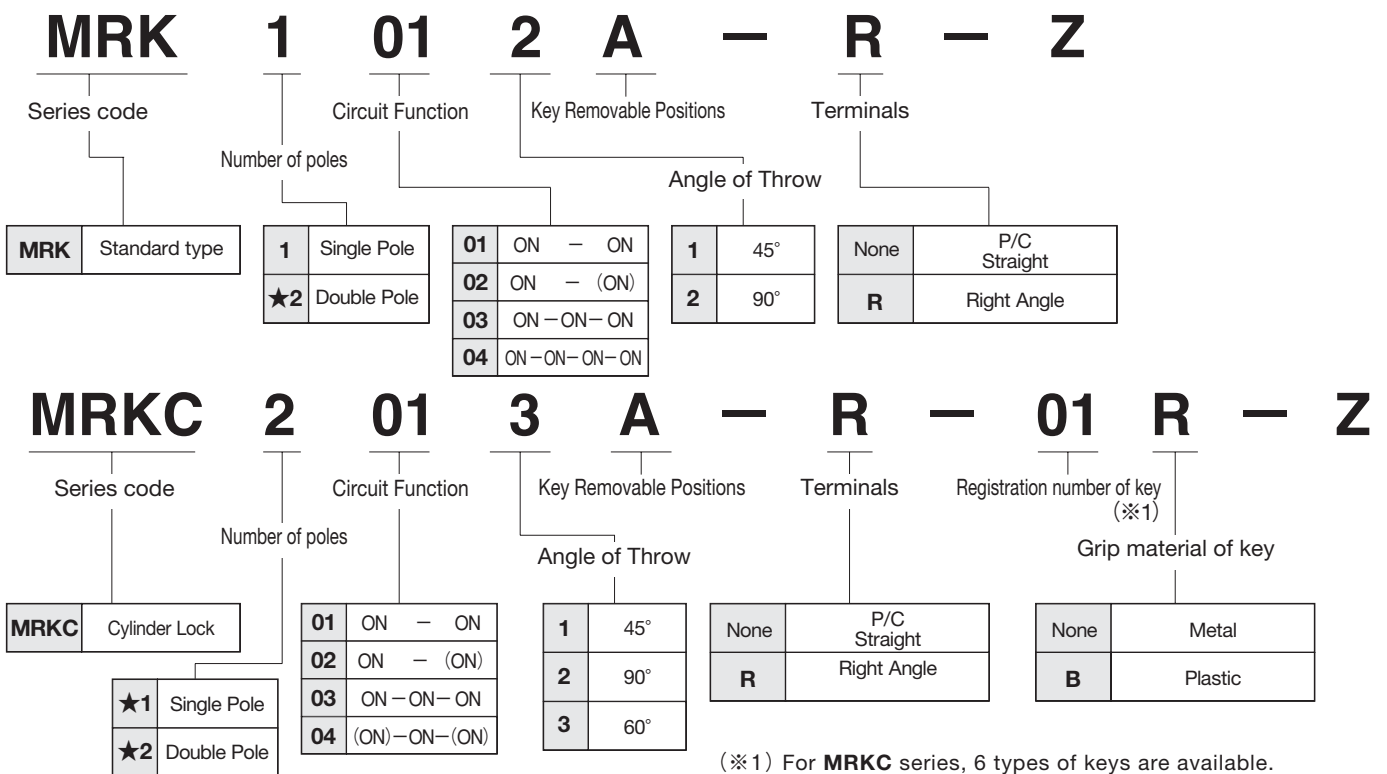
#### 4. Improved Resistance to Soldering Heat

The resistance to soldering heat of contacts is improved by blocking heat from terminals by using the printed circuit board.

#### 5. Cylinder Lock Type (MRKC)

Cylinder lock mechanism is adopted, enabling choice of various types of key.

### ■ Part Numbering

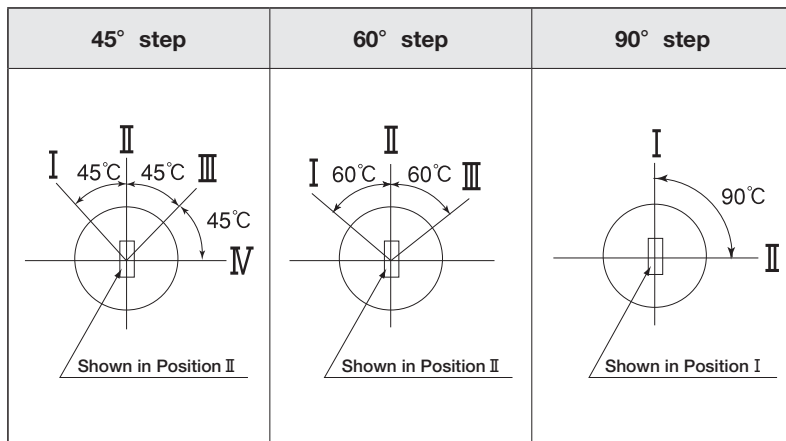


# MRK•MRKC

## Specifications

Rating	0.4VA max. (20VDC max.)	
Initial contact resistance	200mΩ max.	(0.5mA 200μVAC)
Dielectric strength	250VAC 1 minute	
Insulation resistance	100MΩ min.	(100VDC)
Electrical life	10,000 cycles	
Operating force	MRK	2.94±0.98N•cm
	MRKC	2.94±1.47N•cm
Operating temperature range	-20°C~+70°C	
Storage temperature range	-40°C~+80°C	

## Angle of Throw



## Key Removable Position

Code	Key position			
	I	II	III	IV
A	○	○	—	—
B	○	×	—	—
C	×	○	—	—
D	○	○	○	○
E	×	○	○	—
F	×	×	○	—
G	○	○	×	—
H	○	×	○	—
K	○	×	×	—
L	×	○	×	—

○ : Removable

× : Not removable

## Standard Accessories

⟨Supplied with switch⟩

Part name	Key		
	MRK	MRKC	
Series			
Part No.	<b>140007050010</b>	<b>140009002602</b>	<b>140009003061</b>
Dimensions			
Grip material	Plastic	Metal	Plastic

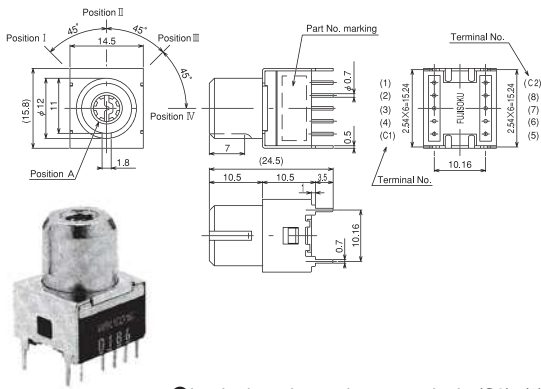
● Each switch comes with two keys.



# MRK (45° step 3&4-position)

## ● PC type Straight

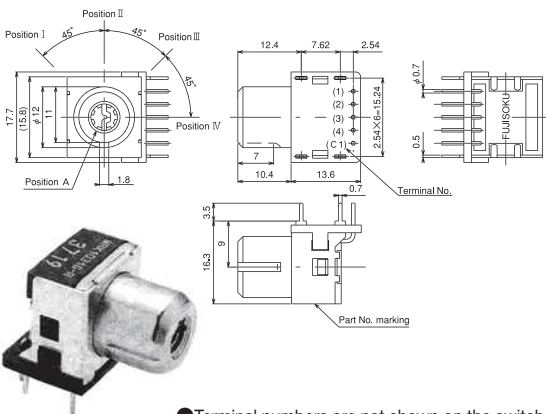
### Single Pole, Double Pole



- In single pole versions, terminals (C2), (5), (6), and (7) are not provided.
- Terminal numbers are not shown on the switch.
- In switches with switching function D, E, F, G, H, K, and L, terminals (4) and (8) are not provided.

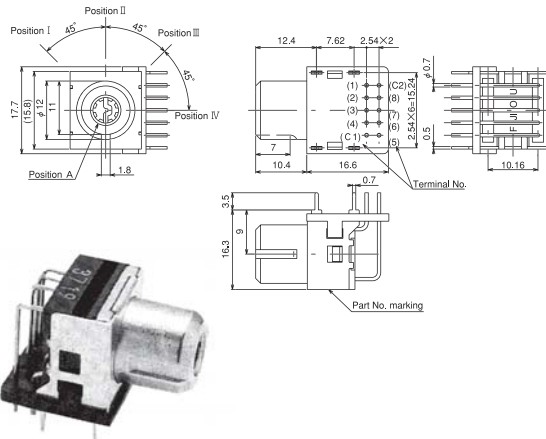
## ● Right Angle

### Single Pole



- Terminal numbers are not shown on the switch.

### Double Pole



- Terminal numbers are not shown on the switch.

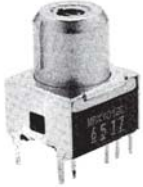
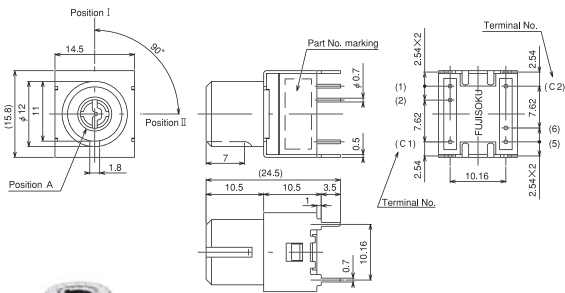
Part No.	Key removable position				A portion	Circuit function				Circuit diagram
	I position	II position	III position	IV position		Connecting position				
						I position	II position	III position	IV position	
★MRK1031D-Z ★MRK2031D-Z ★MRK1031D-R-Z ▲MRK2031D-R-Z	○	○	○	—		ON	ON	ON	ON	
▲MRK1031E-Z ▲MRK2031E-Z ▲MRK1031E-R-Z ▲MRK2031E-R-Z	○	○	○	—		ON	ON	ON	ON	
▲MRK1031F-Z ▲MRK2031F-Z ★MRK1031F-R-Z ▲MRK2031F-R-Z	○	○	○	—		ON	ON	ON	ON	
★MRK1031G-Z ▲MRK2031G-Z ▲MRK1031G-R-Z ▲MRK2031G-R-Z	○	○	○	—		ON	ON	ON	ON	
▲MRK1031H-Z ▲MRK2031H-Z ▲MRK1031H-R-Z ▲MRK2031H-R-Z	○	○	○	—		ON	ON	ON	ON	
★MRK1031K-Z ▲MRK2031K-Z ▲MRK1031K-R-Z ▲MRK2031K-R-Z	○	○	○	—		ON	ON	ON	ON	
★MRK1031L-Z ▲MRK2031L-Z ★MRK1031L-R-Z ▲MRK2031L-R-Z	○	○	○	—		ON	ON	ON	ON	
★MRK1041D-Z ▲MRK2041D-Z ▲MRK1041D-R-Z ▲MRK2041D-R-Z	○	○	○	○		ON	ON	ON	ON	
Connecting terminals	Single Pole					C1-1	C1-2	C1-3	C1-4	
	Double Pole					C1-1	C1-2	C1-3	C1-4	C2-5 C2-6 C2-7 C2-8

(\*): C2 is not available in single pole versions.

# MRK (90° step 2-position)

## ● PC type Straight

### Single Pole, Double Pole



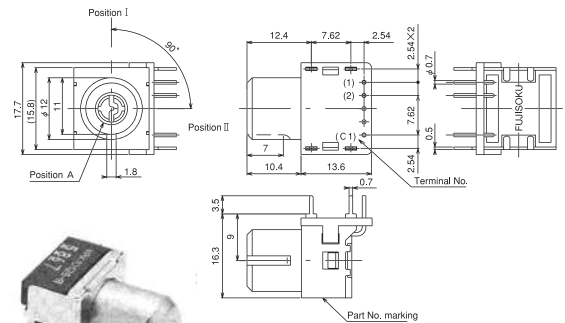
- In single pole versions, terminals (C2), (5), and (6) are not provided.
- Terminal numbers are not shown on the switch.

Part No.	Key removable position		A portion	Circuit function		Circuit diagram
	I position	II position		Connecting position		
				I position	II position	
☆ MRK1012A-Z ▲ MRK2012A-Z	○	○				
☆ MRK1012B-Z ▲ MRK2012B-Z	○			ON	ON	
★ MRK1012C-Z ▲ MRK2012C-Z		○				
★ MRK1022B-Z ▲ MRK2022B-Z	○			ON	(ON)	
Connecting terminals			Single Pole	C1-1	C1-2	
			Double Pole	C1-1 C2-5	C1-2 C2-6	

(\*): C2 is not available in single pole versions.  
(ON): Momentary

## ● Right Angle

### Single Pole

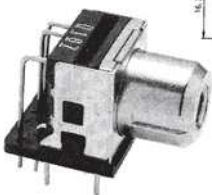
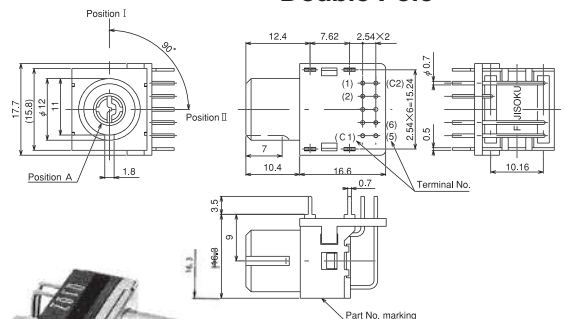


- Terminal numbers are not shown on the switch.

Part No.	Key removable position		A portion	Circuit function		Circuit diagram
	I position	II position		Connecting position		
				I position	II position	
★ MRK1012A-R-Z ★ MRK2012A-R-Z	○	○				
☆ MRK1012B-R-Z ★ MRK2012B-R-Z	○			ON	ON	
▲ MRK1012C-R-Z ▲ MRK2012C-R-Z		○				
▲ MRK1022B-R-Z ▲ MRK2022B-R-Z	○			ON	(ON)	
Connecting terminals			Single Pole	C1-1	C1-2	
			Double Pole	C1-1 C2-5	C1-2 C2-6	

(\*): C2 is not available in single pole versions.  
(ON): Momentary

### Double Pole

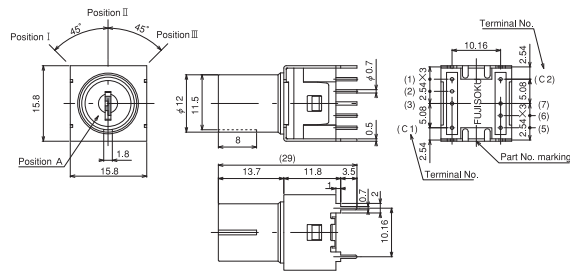


- Terminal numbers are not shown on the switch.

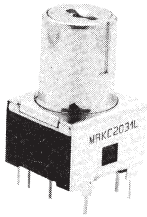
# MRKC (45° step 3—position)

## ● PC type Straight

### Single Pole, Double Pole



- In single pole versions, terminals (C2), (5), (6), and (7) are not provided.
- Terminal numbers are not shown on the switch.

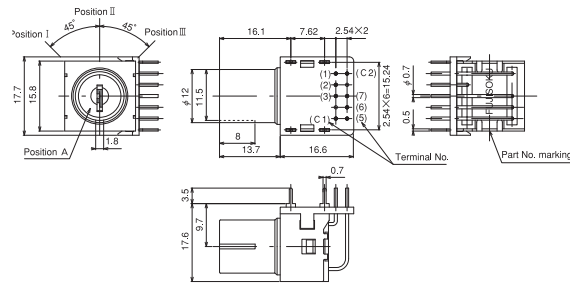


Part No.	Key removable position			A portion	Circuit function			Circuit diagram (*)
	I position	II position	III position		I position	II position	III position	
★MRKC1031L-01-Z ▲MRKC1031L-☒-Z ▲MRKC2031L-☒-Z		○			ON	ON	ON	
★MRKC1041L-01-Z ★MRKC1041L-01B-Z ▲MRKC1041L-☒-Z ▲MRKC2041L-☒-Z		○			(ON)	ON	(ON)	
Connecting terminals	Single Pole			C1-1	C1-2	C1-3		
	Double Pole			C1-1 C2-5	C1-2 C2-6	C1-3 C2-7		

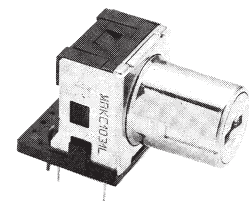
(\*):C2 is not available in single pole versions.  
(ON):Momentary

## ● Right Angle

### Single Pole, Double Pole



- In single pole versions, terminals (C2), (5), (6), and (7) are not provided.
- Terminal numbers are not shown on the switch.



Part No.	Key removable position			A portion	Circuit function			Circuit diagram
	I position	II position	III position		I position	II position	III position	
▲MRKC1031L-R-01-Z ▲MRKC1031L-R-☒-Z ▲MRKC2031L-R-☒-Z		○			ON	ON	ON	
▲MRKC1041L-R-☒-Z ▲MRKC2041L-R-☒-Z		○			(ON)	ON	(ON)	
Connecting terminals	1—pole			C1-1	C1-2	C1-3		
	2—pole			C1-1 C2-5	C1-2 C2-6	C1-3 C2-7		

(\*):C2 is not available in single pole versions.  
(ON):Momentary

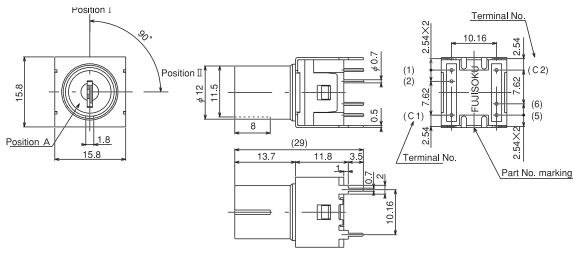
The box ☒ should show Key Registration No. and Key Grip Material Code.



# MRKC (90° step 2—position)

## ● PC type Straight

### Single Pole, Double Pole



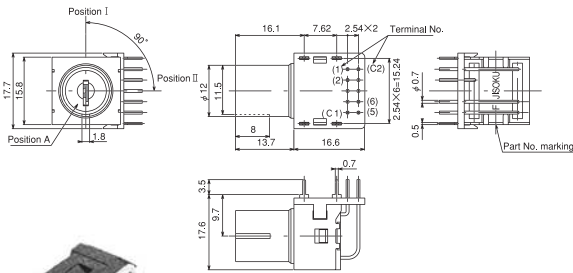
- In single pole versions, terminals (C2), (5), (6), and (7) are not provided.
- Terminal numbers are not shown on the switch.

Part No.	Key removable position		A portion	Circuit function		Circuit diagram (*)
	I position	II position		Connecting position		
				I position	II position	
★MRKC1012A-01-Z ▲MRKC1012A-☒-Z ▲MRKC2012A-☒-Z	○	○		ON	ON	
▲MRKC1012B-☒-Z ▲MRKC2012B-☒-Z	○			ON	ON	
▲MRKC1022B-☒-Z ▲MRKC2022B-☒-Z	○			ON	(ON)	
Connecting terminals		Single Pole	C1-1	C1-2		
		Double Pole	C1-1 C2-5	C1-2 C2-6		

(\*) :C2 is not available in single pole versions.  
(ON) :Momentary

## ● Right Angle

### Single Pole, Double Pole



- In single pole versions, terminals (C2), (5), (6), and (7) are not provided.
- Terminal numbers are not shown on the switch.

Part No.	Key removable position		A portion	Circuit function		Circuit diagram (*)
	I position	II position		Connecting position		
				I position	II position	
▲MRKC1012A-R-01-Z ▲MRKC1012A-R-☒-Z ▲MRKC2012A-R-☒-Z	○	○		ON	ON	
▲MRKC1012B-R-☒-Z ▲MRKC2012B-R-☒-Z	○			ON	ON	
Connecting terminals		Single Pole	C1-1	C1-2		
		Double Pole	C1-1 C2-5	C1-2 C2-6		

(\*) :C2 is not available in single pole versions.  
(ON) :Momentary

The box ☒ should show Key Registration No. and Key Grip Material Code.

(ON) : Momentary.

▲ : Inquiry products.

★ : Made to order products.



PC Hole Layouts

(Top View)

Terminals	Poles	Single pole • Double poles		
	Steps	2-step (90°)	3-step (45° • 60°)	4-step (45°)
PC type Straight				
Right angle				
PC type Straight				
Right angle				

◆ For stand-off pins  
⊕ For terminal pins

Key Mounting Dimensions

Series	MRK	MRKC	
Grip Material	Plastic	Metal	Plastic
Dimensions			

Precautions

1. Soldering

- (1) Manual Soldering
  - Device : Solder iron.
  - 360°C Max. 3 sec. Max.
- (2) Auto Soldering
  - Method : Jet wave or dip type
  - 275°C Max. 6 sec. Max
- Preheat should be within 80-120°C, 120sec.

2. Flux Cleaning

- (1) Solvent : Alcohol type.
- (2) MRK and MRKC series are not washable. To wash the PC board, clean the soldering surface of the PC board with a brush so that the switch is not exposed to the cleaning solution.