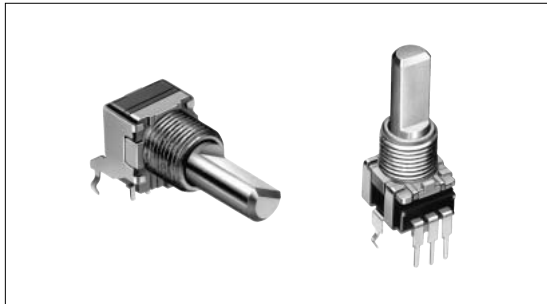


# Metal Shaft Potentiometer 9mm Size Metal Shaft Snap-in Type

RK09L Series



Single-unit and dual-unit type suits a variety of controls.



## Typical Specifications

Items	Specifications
Total resistance tolerance	± 20%
Maximum operating voltage	50V AC , 10V DC
Total rotational angle	300 ± 5 °
Rotational torque	2 to 25mN·m
Operating life	15,000cycles
Operating temperature range	- 10 to + 70

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

## Product Line

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k)	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.
Single-unit	Horizontal type	Flat	15	Without	10	15A	1,000	RK09L1120A2S	1
				With	20	1B		RK09L112003P	
	Vertical type		12.5	Without	10	15A		RK09L1120A69	
								20	With
			RK09L1140A66						
			RK09L1140A5P						
			RK09L1140A2U						
			Dual-unit	Horizontal type for tone	15	With		50	15A
Without	50	3B					RK09L1140A65		
				25	Without	10	1B	RK09L122002M	
RK09L1220A1B									
Vertical type for tone	15	With	50	1B	RK09L12B0A31	4			
					20		Without	10	15A
Vertical type for vol.	15	Without	10	15A		RK09L1240A12			
					20	Without	10	15A	RK09L12D0A1W
RK09L12D0A1T									

## Note

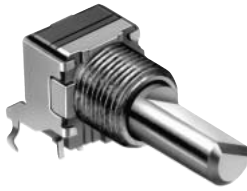
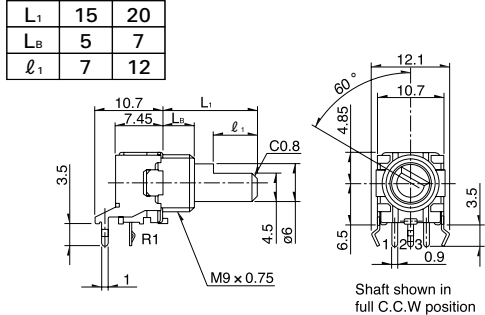
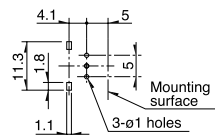

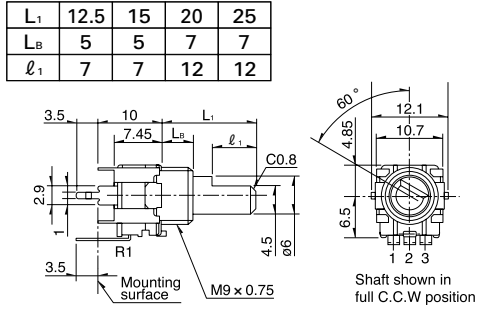
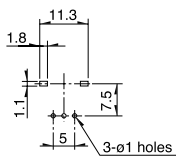
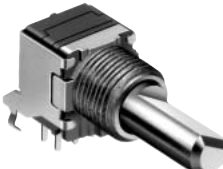
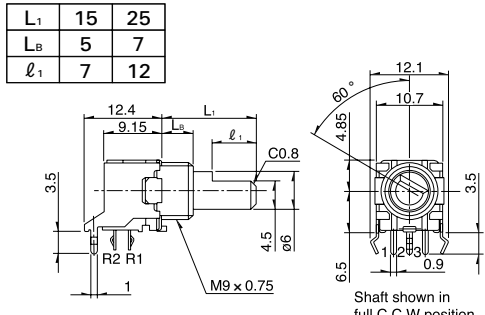
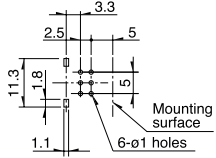

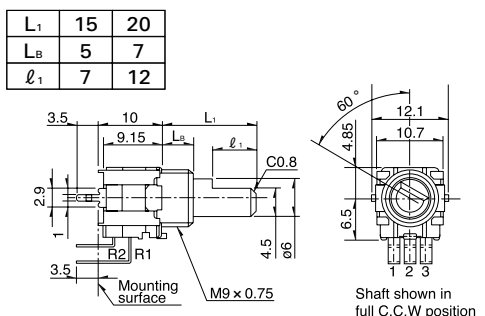
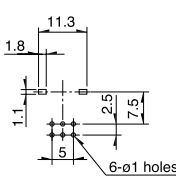
Products other than those listed in above products are also available. Please contact us for details.

Refer to P.325 for product varieties.

# Metal Shaft Potentiometer 9mm Size Metal Shaft Snap-in Type | RK09L Series

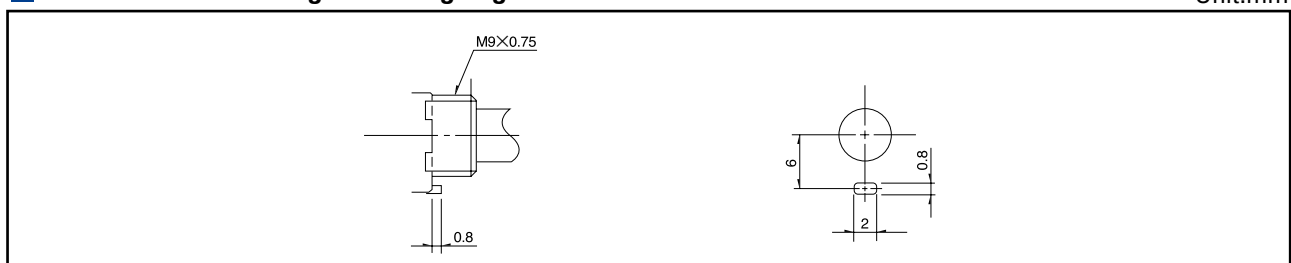
## Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)															
1		<table border="1"> <tr> <td>L<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>L<sub>B</sub></td> <td>5</td> <td>7</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> </tr> </table>  <p>Shaft shown in full C.C.W position</p>	L <sub>1</sub>	15	20	L <sub>B</sub>	5	7	ℓ <sub>1</sub>	7	12	 <p>3-φ1 holes</p>						
L <sub>1</sub>	15	20																
L <sub>B</sub>	5	7																
ℓ <sub>1</sub>	7	12																
2		<table border="1"> <tr> <td>L<sub>1</sub></td> <td>12.5</td> <td>15</td> <td>20</td> <td>25</td> </tr> <tr> <td>L<sub>B</sub></td> <td>5</td> <td>5</td> <td>7</td> <td>7</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>  <p>Shaft shown in full C.C.W position</p>	L <sub>1</sub>	12.5	15	20	25	L <sub>B</sub>	5	5	7	7	ℓ <sub>1</sub>	7	7	12	12	 <p>3-φ1 holes</p>
L <sub>1</sub>	12.5	15	20	25														
L <sub>B</sub>	5	5	7	7														
ℓ <sub>1</sub>	7	7	12	12														
3		<table border="1"> <tr> <td>L<sub>1</sub></td> <td>15</td> <td>25</td> </tr> <tr> <td>L<sub>B</sub></td> <td>5</td> <td>7</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> </tr> </table>  <p>Shaft shown in full C.C.W position</p>	L <sub>1</sub>	15	25	L <sub>B</sub>	5	7	ℓ <sub>1</sub>	7	12	 <p>6-φ1 holes</p>						
L <sub>1</sub>	15	25																
L <sub>B</sub>	5	7																
ℓ <sub>1</sub>	7	12																
4		<table border="1"> <tr> <td>L<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>L<sub>B</sub></td> <td>5</td> <td>7</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> </tr> </table>  <p>Shaft shown in full C.C.W position</p>	L <sub>1</sub>	15	20	L <sub>B</sub>	5	7	ℓ <sub>1</sub>	7	12	 <p>6-φ1 holes</p>						
L <sub>1</sub>	15	20																
L <sub>B</sub>	5	7																
ℓ <sub>1</sub>	7	12																

## Dimensions of Bushing and Fixing Lug

Unit:mm



Refer to P.325, 326, 502 for resistance taper.

## Product Varieties

In addition to the recommended products, the following specifications can also be accommodated.

### Total Resistance Variety

Total resistance(k )	5	10	20	50	100
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### Resistance Taper

Resistance taper	15A	1B	3B	15C
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### Shaft Variety

Unit:mm

Shaft shown in full CCW position

**Detail dimensions**

L <sub>1</sub>	L <sub>B</sub>	l <sub>1</sub>
12.5	5	7
15	5	7
17.5	5	7
20	7	12
25	7	12

#### Note

marked are specifications recommended by ALPS.

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
Insulated Shaft  
Knob Operating

# Orders For Specifications Not Listed In The Recommended Products

When ordering product varieties that are not listed in the Product Line, please specify by referring to the below example.

## Sample Part Number



### Model type

Code	Model type
112	Single-unit horizontal type
114	Single-unit vertical type
122	Dual-unit horizontal type for tone
124	Dual-unit vertical type for tone
12B	Dual-unit horizontal type for vol.
12D	Dual-unit vertical type for vol.

### Shaft type

Code	Shaft type
F	Flat

\* Only available in flat format.

### Length of the shaft (L, X mm)

Code	Length of the shaft	Code	Length of the shaft	Code	Length of the shaft
12	12.5	17	17.5	25	25
15	15	20	20		

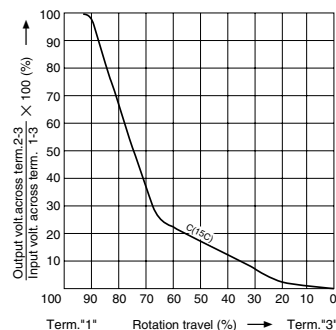
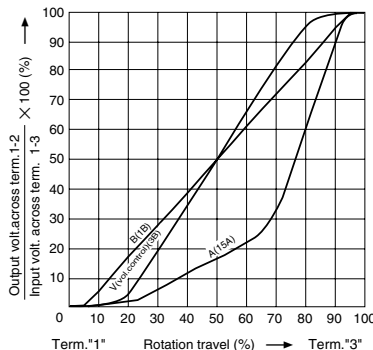
### Detent

Code	Center detent
C0	Without
C1	With

### Resistance taper

Code	Resistance taper	Code	Resistance taper
A	15A	V	3B
B	1B	C	15C

B:For tone & general(model type : 112,114,122,124)  
V:For vol.(model type : 112,114,12B,12D)



### Total resistance

Code	Total resistance (kΩ)	Code	Total resistance (kΩ)
502	5	503	50
103	10	104	100
203	20		

### Note

marked are specifications recommended by ALPS.







Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
Insulated Shaft  
Knob Operating

## List of Varieties

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
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Knob Operating

Type	9mm size metal shaft snap-in	9mm size metal shaft multi-ganged	11mm size metal shaft low-profile	11mm size metal shaft reflow	16mm size metal shaft	
Number of drive shafts	Single-shaft		Dual-shaft	Single-shaft		
Model	RK09L1	RK0971 RK0981	RK0972	RK117111	RK119	RK1631 1 RK1631 A
Photo						
Fixing method of bushing	The bushing can be screwed down		Bushing screw clamp	Bushing guide type		
Terminal mounting	Horizontal type	Vertical type	Horizontal type	Vertical type		
Attached switch	Without		Rotary switch 1	Momentary push switch		Without
			Push-on push-off switch 1			
			Momentary push switch 1			
Gang error applicable to Dual-unit parts for audio volume control purposes	- 40dB to 0dB 3dB max.		—————		- 40dB to 0dB 3dB max.	
Solder heat resistance	Manual soldering	350 max. 3s max.			350 ± 10 3 <sup>+1</sup> / <sub>0</sub> s	350 max. 3s max. Motor terminal: 360 max 2s max.
	Dip soldering	260 ± 5 , 5 ± 1s			—————	
	Reflow soldering	—————			Please see P.347	—————
Operating temperature range	- 10 to + 70	- 20 to + 70	- 30 to + 70	- 40 to + 85	- 10 to + 70	
Electrical performance	Rated power	0.05W				
	Residual resistance	10k < R < 50k 50k < R	20 max. 30 max. Nominal total resistance of 0.1% or less		R 10k 50 max. 10k < R 50k 80 max. 50k < R Nominal total resistance of 0.2% or less	R 10k 20 max. 10k < R 50k 30max. 50k < R Nominal total resistance of 0.1% or less
	Maximum attenuation (Volume control)		5k R < 10k 10k R < 50k 50k R < 100k 100k R	70dB min. 80dB min. 90dB min. 100dB min.		
	Insulation resistance	100M min. 250V DC				100M min. 500V DC
	Voltage proof	300V AC for 1minute				500V AC for 1minute
Mechanical performance	Stopper strength	0.5N·m( With push-lock mechanism type: 0.4N·m )			0.5N·m	0.9N·m
	Push-pull strength	80N max.	100N max.			
	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 and for 2 hours respectively				
Environmental performance	Cold	- 20 ± 2 for 96h	- 30 ± 2 for 96h		- 40 ± 2 for 240h	- 20 ± 2 for 96h
	Dry heat	70 ± 2 for 96h			85 ± 2 for 240h	70 ± 2 for 96h
	Damp heat	40 ± 2 , 90 to 95%RH for 96h			60 ± 2 , 90 to 95%RH for 240h	40 ± 2 , 90 to 95%RH for 96h
Page	323	327	339	343	348	

### Push-on Switch Specifications

Items	RK097		RK117		RK119	
Contact arrangement	Single pole and single throw ( Push on )					
Travel ( mm )	0.5	1.5	0.5	1.5	0.5 ± 0.3	1.5 ± 0.5
Operating force ( N )	4 <sup>+1</sup> / <sub>2</sub>	5 ± 2	6 ± 3	5 ± 2		4 ± 2
Rating	0.5A 12V DC		3A 16V DC		0.1A 5V DC (1mA 5V DC min.ratings)	
Contact resistance	100m for initial period;200m after operating life					
Operating life	10,000 times min.	20,000 times min.	10,000 times min.	20,000 times min.	100,000 times min.	20,000 times min.

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Metal Shaft Potentiometers Cautions .....364, 365

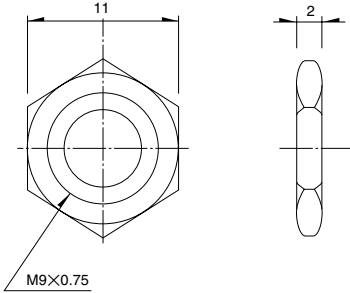
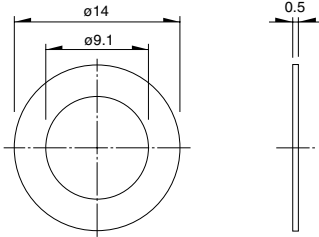
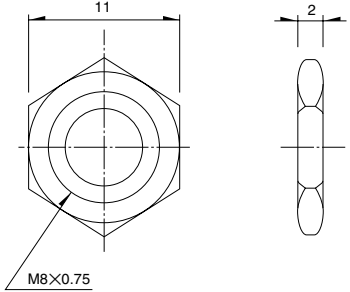
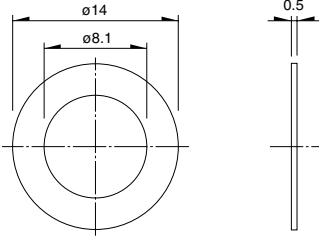
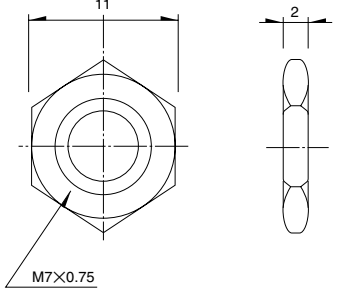
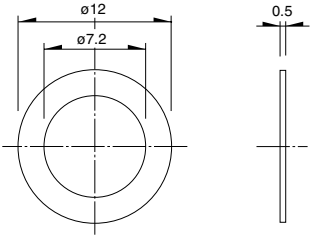
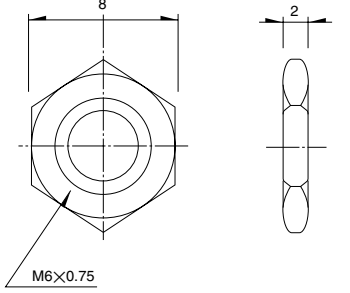
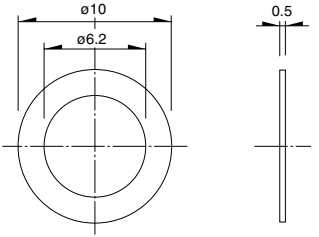
### Notes

1. For the switch attached, the single-shaft or inner shaft of the dual-shaft type can be chosen.
2. The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.

## Attached Parts

The following parts are included with the product.

Unit:mm

Applicable products	Bearing screw diameter	Hexagonal nut	Flat washer
<p>RK09L RK168 RK097 RK203</p>	<p>M9</p>		
<p>RK271</p>	<p>M8</p>		
<p>RK097 RK098 RK163</p>	<p>M7</p>		
<p>RK097 RK098</p>	<p>M6</p>		

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
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