

# Insulated Shaft Potentiometer 12mm Size Insulated Shaft Snap-in Type

RK12L Series



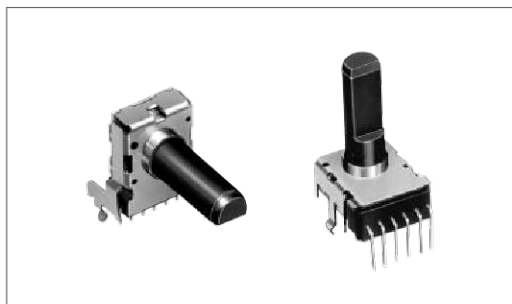
High performance 12mm width type.

Rotary Potentiometers

Slide Potentiometers

Multi Control Devices

Sensors



## Features

- Improved cross talk and gang error characteristics achieved by enhanced structural design.
- R-shaped shaft end point makes knob insertion smooth.
- Terminal layout contributes in reducing solder bridging.

## Applications

- For volume, tone and balance adjustments in audio equipment
- For various control in DVD players/recorders, mixing consoles and electronic musical instruments

Metal Shaft

Insulated Shaft

Hollow Type

Knob Operating

## Typical Specifications

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

## Recommended Products List

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft LM <sub>1</sub> (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Application	Minimum packing unit (pcs.)	Products No.	Drawing No.
Dual-unit	Vertical type	Flat	20	Without	50	1B	For tone	100	RK12L1230C0K	2
					10	15A			RK12L1230C0T	
			25	With	20	1B			RK12L1230C1M	
					50				RK12L123000E	
	Horizontal type		30	Without	10	15A			RK12L1210C0R	1
					50	15C			RK12L12C0C0V	2
	Vertical type		25	Without	10	15A			RK12L12C0A0E	
									30	
		Horizontal type	30		20		RK12L12C0A0A			
					10		RK12L12A0C0R		1	

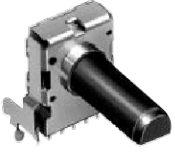
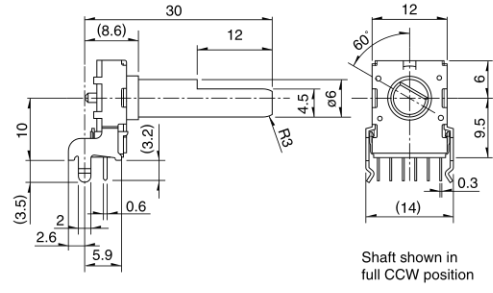
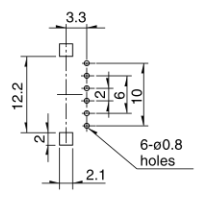

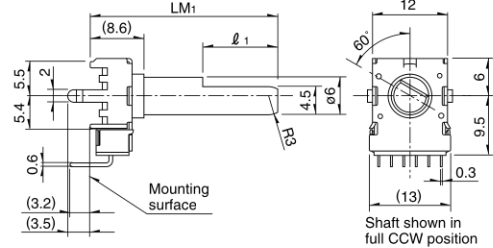
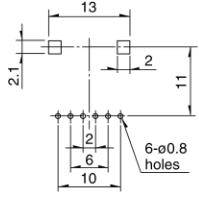
## Note

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

Refer to P.75 for product varieties.  
Refer to P.78 for product specifications.

**Dimensions**

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)										
1	<p>Horizontal type without bushing RK12L121 (For tone control) RK12L12A (For vol. control)</p> 	 <p>Shaft shown in full CCW position</p>											
2	<p>Vertical type without bushing RK12L123 (For tone control) RK12L12C (For vol. control)</p> 	<table border="1" data-bbox="646 649 893 705"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>4.5</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>  <p>Shaft shown in full CCW position</p>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	4.5	7	12	12	
LM <sub>1</sub>	15	20	25	30									
ℓ <sub>1</sub>	4.5	7	12	12									

Rotary Potentiometers

Slide Potentiometers

Multi Control Devices

Sensors

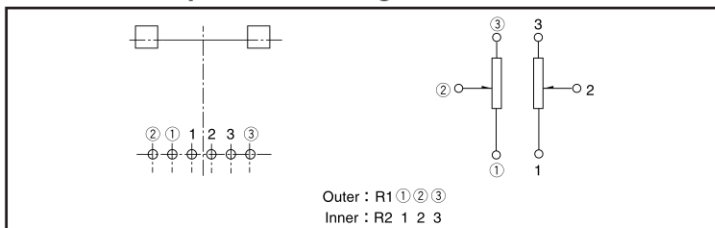
Metal Shaft

Insulated Shaft

Hollow Type

Knob Operating

**Terminal Layout/Circuit Diagram**



**Product Varieties**

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

**Total Resistance Variety**

Total resistance (kΩ)	5	10	20	50	100	200
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**Resistance Taper**

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

Unit:mm

Style	Vertical type		Horizontal type	
	LM <sub>1</sub>	15	20	25
ℓ <sub>1</sub>	4.5	7	12	12

**Note**

marked are specifications recommended by ALPS.

Refer to P.76, 211 for resistance taper.

# Orders Other Than Recommended Products

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

## Sample Part Number



### Model type

Code	Model type
1	Horizontal type for tone
3	Vertical type for tone
A	Horizontal type for vol.
C	Vertical type for vol.

### Shaft type

Code	Shaft type
F	Flat

\* Only available in flat format.

### Length of the shaft (LM<sub>1</sub>) (mm)

Code	Length of the shaft	Code	Length of the shaft
15	15	25	25
20	20	30	30

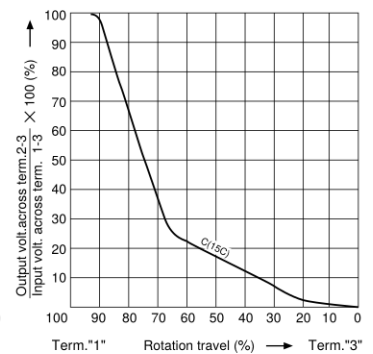
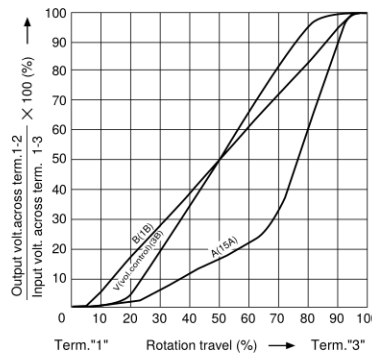
### Detent

Code	Center detent
C0	Without
C1	With

### Resistance taper

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

B: For tone & general (Model type : 1,3)  
V: For vol. (Model type : A,C)



### Total resistance

Code	Total resistance (kΩ)	Code	Total resistance (kΩ)
502	5	503	50
103	10	104	100
203	20	204	200

### Note

marked are specifications recommended by ALPS.

- Rotary Potentiometers
- Slide Potentiometers
- Multi Control Devices
- Sensors
- Metal Shaft
- Insulated Shaft
- Hollow Type
- Knob Operating

## Product Specifications

Items	Type		9mm Size Insulated Shaft Snap-in		11mm Size Insulated Shaft Snap-in	14mm Size Insulated Shaft Snap-in	12mm Size Insulated Shaft Snap-in	9mm Size Insulated shaft Long-life	
	Model		RK09K11□ RK09D11□	RK09K12□	RK11K11□	RK14K12□	RK12L12□	RK09Y11L	
	Items		Single-unit	Dual-unit	Single-unit	Dual-unit	Dual-unit	Single-unit	
<b>Operating temperature range</b>		-10°C to +70°C							
<b>Electrical performance</b>	<b>Total resistance tolerance</b>		±20%	±30%	±20%		±30%		
	<b>Rated power</b>		0.05W	0.03W	0.05W		0.01W		
	<b>Maximum operating voltage</b>		50V AC 20V DC	50V AC For AC only	50V AC 20V DC	50V AC For AC only		50V AC 5V DC	
	<b>Insulation resistance</b>		100MΩ min. 250V DC		100MΩ min. 500V DC	100MΩ min. 250V DC			
	<b>Voltage proof</b>		250V AC (for 1minute)		500V AC (for 1minute)	300V AC (for 1minute)		250V AC (for 1minute)	
	<b>Gang error</b>		—	-40dB to 0dB 3dB max.	—	Volume control -40dB to 0dB 3dB max. For tone control within 2dB at center		—	
<b>Mechanical performance</b>	<b>Total rotational angle</b>		RK09K : 280±5° RK09D11□ : 300±5°		300±5°				
	<b>Rotational torque</b>		1 to 8mN·m		3 to 20mN·m		2 to 15mN·m	5mN·m max.	
	<b>Strength of the actuator</b>	<b>Stopper strength</b>	0.3N·m		Without bushing 0.5N·m With bushing 0.6N·m	0.6N·m	0.5N·m	—	
		<b>Push-pull strength</b>	50N max.		80N max.		30N max.		
	<b>Vibration</b>		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						
	<b>Resistance to soldering heat</b>	<b>Manual soldering</b>	350°C max. 3s max.						
		<b>Dip Soldering</b>	—					260°C max. 5s max.	—
<b>Endurance</b>	<b>Operating life</b>		Single-unit : 5,000cycles Dual-unit : 10,000cycles		15,000cycles		1,000,000 cycles		
<b>Environmental performance</b>	<b>Cold</b>		-30±2°C for 96h					-30±2°C for 240h	
	<b>Dry heat</b>		70±2°C for 96h				70±2°C for 240h		
	<b>Damp heat</b>		40±2°C, 90 to 95% RH for 96h					40°C, 90 to 95% RH for 240h	

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