

9mm Size Metal Shaft Snap-in Potentiometer

RK09L Series

Single-connected and two-connected type best suited for a variety of controls.

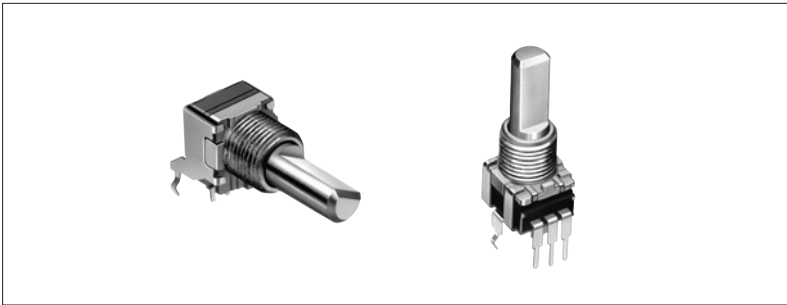
Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors



Metal Shaft

Insulated Shaft

Knob Operating

Features

- Easy assembly by snap-in structure.
- No opening is good for dust control and flux control.
- Two types are available: horizontal and vertical.

Applications

- Controls for audio products, visual products, such as DVD players, mini component stereos, CD players and portable players
- Various controls for audio mixing console and music instruments, etc.

Typical Specifications

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

Recommended Products List

Number of resistor elements	Mounting direction	Products No.	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum packing unit (pcs.)	Drawing No.
Single-unit	Horizontal type	RK09L1120A2S	Flat	15	Without	10	15A	100	1
		RK09L1120036			With		1B		
		RK09L1120A69		20	Without		15A		
	RK09L1140A5E	12.5					Without		
	RK09L1140A66			15	Without	10			
	RK09L1140A5P	20					With		1B
	RK09L1140A2U			25	Without	5			
	RK09L114001T	20					With		10
RK09L1140A65	25		Without	5					
Dual-unit		Horizontal type for tone			RK09L122002M	Flat	15	Without	50
	RK09L1220A1B		With	100					
	Horizontal type for vol.	RK09L12B0A31	25	Without	50		3B		
		RK09L12B0A3Z			10				
	Vertical type for tone	RK09L124000Z	15	With	50		1B		
		RK09L1240A0W			20				
	Vertical type for vol.	RK09L12D0A1W	15	Without	10		15A		
		RK09L12D0A1T						20	

Note

Additional product specifications in response to those not included in the above recommended products are also available.

For product specifications, see P.13
For other detailed specifications, see P.48, 49

Product Specifications

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

Total Resistance Variety

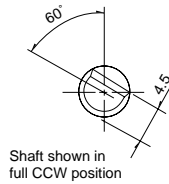
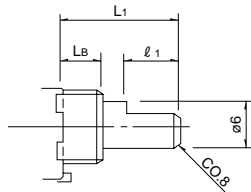
Total resistance (kΩ)	5	10	20	50	100
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Resistance Taper

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

Unit : mm



Detail dimensions

L ₁	L _B	l ₁
12.5	5	7
15	5	7
17.5	5	7
20	7	12
25	7	12

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Orders other than recommended products

Specify orders for varieties that are not listed in the Recommended Product List, referring to the following 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 (L1) (mm)

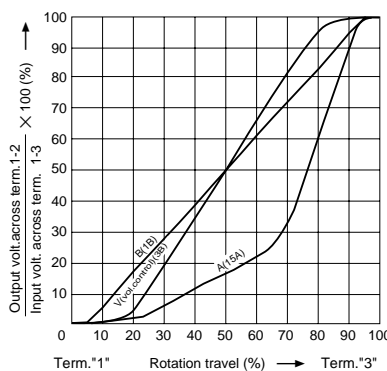
Code	Length of the shaft	Code	Length of the shaft	Code	Length of the shaft
12	12.5	17	17.5	25	25
15	15	20	20		

Detent

Code	Center detent
C0	Without
C1	With

Resistance taper

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



Total resistance

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

Note

Shows the specification recommended by us.

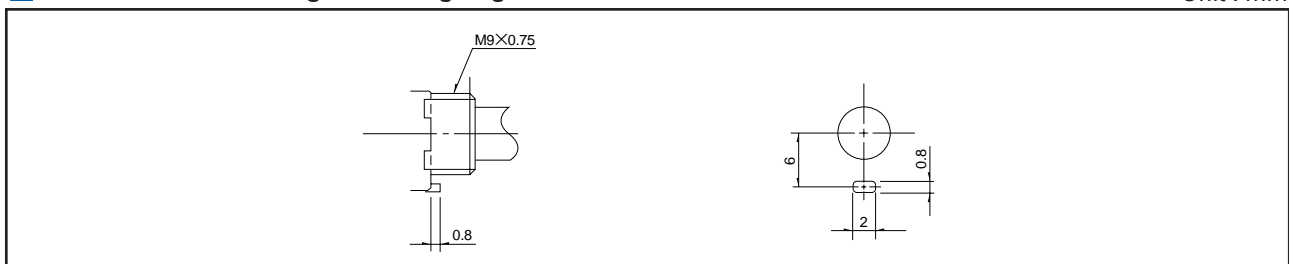
Dimensions

Unit : mm

No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting side)															
1	Single-shaft, single-unit horizontal type RK09L1120	<table border="1"> <tr><td>L₁</td><td>15</td><td>20</td></tr> <tr><td>L_B</td><td>5</td><td>7</td></tr> <tr><td>ℓ₁</td><td>7</td><td>12</td></tr> </table> <p>Shaft shown in full C.C.W position</p>	L ₁	15	20	L _B	5	7	ℓ ₁	7	12							
L ₁	15	20																
L _B	5	7																
ℓ ₁	7	12																
2	Single-shaft, single-unit vertical type RK09L1140	<table border="1"> <tr><td>L₁</td><td>12.5</td><td>15</td><td>20</td><td>25</td></tr> <tr><td>L_B</td><td>5</td><td>5</td><td>7</td><td>7</td></tr> <tr><td>ℓ₁</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 ₁	12.5	15	20	25	L _B	5	5	7	7	ℓ ₁	7	7	12	12	
L ₁	12.5	15	20	25														
L _B	5	5	7	7														
ℓ ₁	7	7	12	12														
3	Single-shaft, dual-unit horizontal type RK09L1220 (For tone) RK09L12B0 (For vol.)	<table border="1"> <tr><td>L₁</td><td>15</td><td>25</td></tr> <tr><td>L_B</td><td>5</td><td>7</td></tr> <tr><td>ℓ₁</td><td>7</td><td>12</td></tr> </table> <p>Shaft shown in full C.C.W position</p>	L ₁	15	25	L _B	5	7	ℓ ₁	7	12							
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L _B	5	7																
ℓ ₁	7	12																
4	Single-shaft, dual-unit vertical type RK09L1240 (For tone) RK09L12D0 (For vol.)	<table border="1"> <tr><td>L₁</td><td>15</td><td>20</td></tr> <tr><td>L_B</td><td>5</td><td>7</td></tr> <tr><td>ℓ₁</td><td>7</td><td>12</td></tr> </table> <p>Shaft shown in full C.C.W position</p>	L ₁	15	20	L _B	5	7	ℓ ₁	7	12							
L ₁	15	20																
L _B	5	7																
ℓ ₁	7	12																

Dimensions of Bushing and Fixing Lug

Unit : mm



Products Specifications

Items		Model	RK09L	RK097 RK098	RK117	RK16
Operating temperature range		-10°C to +70°C				
Electrical performance	Total resistance tolerance	±20%				
	Rated power	0.05W				
	Maximum operating voltage	50V AC				150V AC
	Residual resistance	$R \leq 10k\Omega$ 20Ω max. $10k\Omega < R \leq 50k\Omega$ 30Ω max. $50k\Omega < R$ Nominal total resistance of 0.1% or less				
	Maximum attenuation (Volume control)	$5k\Omega \leq R < 10k\Omega$ 70dB min. $10k\Omega \leq R < 50k\Omega$ 80dB min. $50k\Omega \leq R < 100k\Omega$ 90dB min. $100k\Omega \leq R$ 100dB min.				
	Insulation resistance	100MΩ min. 250V DC				100MΩ min. 500V DC
	Voltage proof	1 minute 300V AC				1 minute 500V AC
Mechanical performance	Total rotational angle	RK09L $300 \pm 5^\circ$ RK097 $300 \pm 5^\circ$ (Axis movement type is $300 \begin{smallmatrix} +10^\circ \\ -5^\circ \end{smallmatrix}$) RK098 $300 \begin{smallmatrix} +10^\circ \\ -5^\circ \end{smallmatrix}$			$300 \begin{smallmatrix} +10^\circ \\ -5^\circ \end{smallmatrix}$	$300 \pm 5^\circ$
	Rotational torque	2 to 25mN·m				
	Stopper strength	0.5N·m (For shaft movable type, 0.4N·m)				0.9N·m (For dual-shaft type, 0.6N·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				
	Solderability	230±5°C, 3±0.5s				
	Solder heat resistance	Manual soldering	350°C or less and within 3 seconds			
Dip soldering (Dip available products)		260±5°C 4±1s				
Endurance	Operating life	15,000 cycles				
Environmental test	Cold	-10°C for 96h				
	Long-term heat resistance	+70°C for 96h				
	Moisture resistance	+40±2°C, 90 to 95%RH for 96h				

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Attached Parts

These parts are attached to the following products.

Unit : mm

Applicable products	Bearing screw diameter	Hexagonal nut	Flat washer
RK09L RK168 RK097	M9		
RK271	M8		
RK097 RK098 RK163	M7		
RK097 RK098	M6		

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