

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

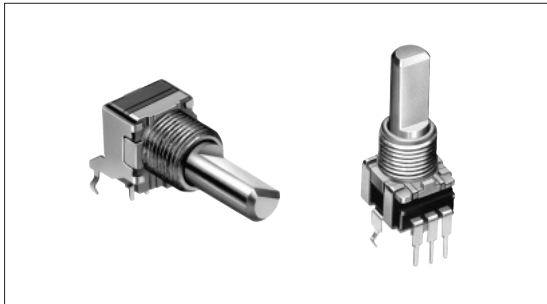
RK09L Series



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

Rotary Potentiometers

Slide Potentiometers



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°C to +70°C

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 (kΩ)	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	1B		15A		RK09L1120A69	2
									15	50	
			20	10	RK09L1140A66						
					RK09L1140A5P						
			25	Without	5						
									RK09L114001T		
Dual-unit	Horizontal type for tone	Flat	15	With	50	15A	RK09L1140A65	3			
	Horizontal type for vol.			Without	100		RK09L122002M				
	Vertical type for tone		25	Without	10	3B	RK09L1220A1B				
							RK09L12B0A31				
	Vertical type for vol.		15	With	50	1B	15A	RK09L12B0A3Z	4		
								20		Without	10
			15	Without	10						
								20		RK09L12D0A1W	
							RK09L12D0A1T				

Packing Specifications

Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case export packing	
1,000	2,000	383×503×171

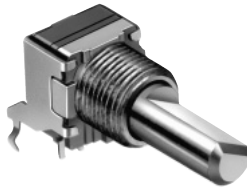
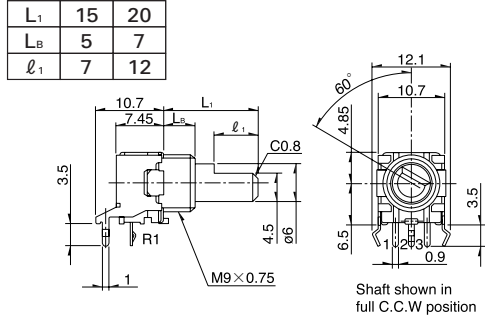
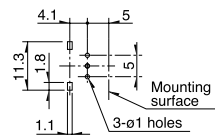

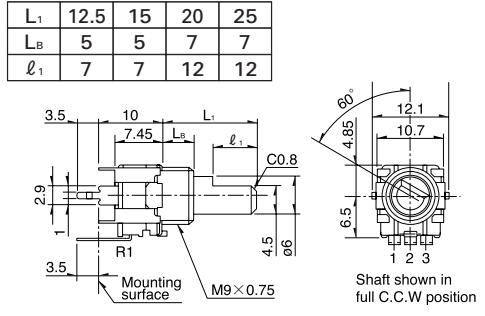
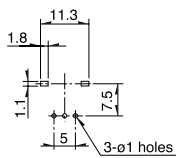
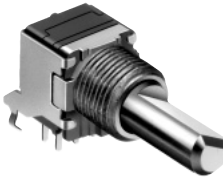
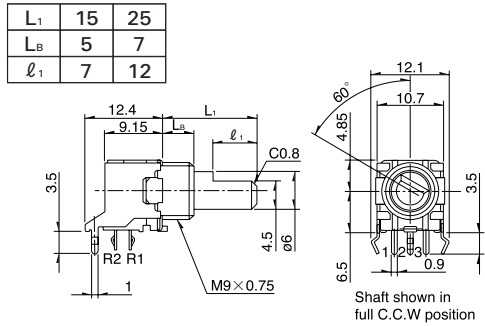
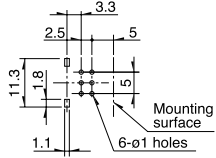

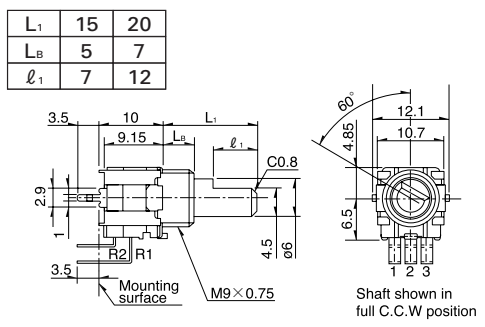
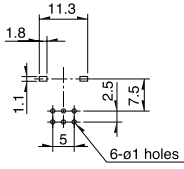
Note

1. Products other than those listed in above products are also available. Please contact us for details.
2. Please place purchase orders per minimum order unit N (integer).

Refer to P.347 for product varieties.
Refer to P.347, 348, 456 for resistance taper.
Refer to P.377 for attached parts.

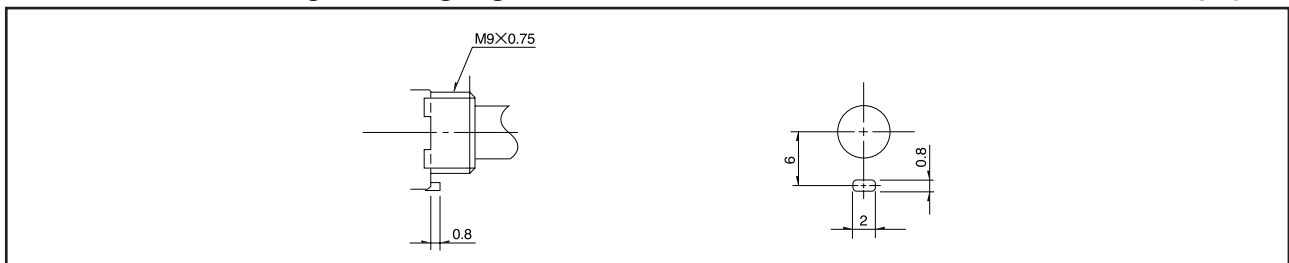
Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)															
1	<p>Single-shaft, single-unit Horizontal type RK09L1120</p> 	<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	 <p>3-ø1 holes</p>						
L ₁	15	20																
L _B	5	7																
ℓ ₁	7	12																
2	<p>Single-shaft, single-unit Vertical type RK09L1140</p> 	<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	 <p>3-ø1 holes</p>
L ₁	12.5	15	20	25														
L _B	5	5	7	7														
ℓ ₁	7	7	12	12														
3	<p>Single-shaft, dual-unit Horizontal type RK09L1220 (For tone) RK09L12B0 (For vol.)</p> 	<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	 <p>6-ø1 holes</p>						
L ₁	15	25																
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4	<p>Single-shaft, dual-unit Vertical type RK09L1240 (For tone) RK09L12D0 (For vol.)</p> 	<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	 <p>6-ø1 holes</p>						
L ₁	15	20																
L _B	5	7																
ℓ ₁	7	12																

Dimensions of Bushing and Fixing Lug

Unit:mm



Product Varieties

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

Total Resistance Variety

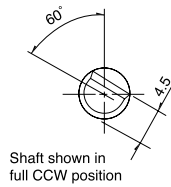
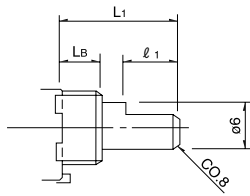
Total resistance (kΩ)	5	10	20	50	100
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Resistance Taper

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

Note

marked are specifications recommended by ALPS.

Refer to P.348, 456 for resistance taper.
Refer to P.377 for attached parts.

Rotary
Potentiometers
Slide
Potentiometers

Metal
Shaft
Insulated
Shaft
Knob
Operating

Orders Other Than 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 (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		

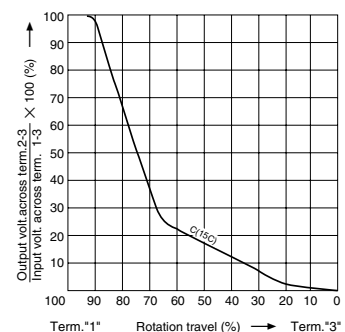
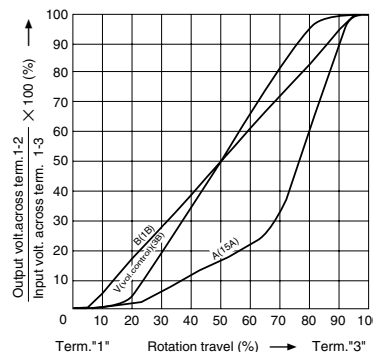
Detent

Code	Center detent
C0	Without
C1	With

Resistance taper

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

Type	9mm size metal shaft snap-in		9mm size metal shaft multi-ganged		11mm size metal shaft reflow
Number of drive shafts	Single-shaft			Dual-shaft	Single-shaft
Model	RK09L1		RK0971	RK0972	RK119
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
			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.				—
Solder heat resistance	Manual soldering	350°C max. 3s max.			350±10°C 3 ⁺ 1 _s
	Dip soldering	260±5°C, 5±1s			—
	Reflow soldering	—			Please see P.364
Operating emperature range	-10°C to +70°C		-20°C to +70°C -40°C to +85°C (Vehicle-compatible)		-40°C to +85°C
Electrical performance	Rated power	0.05W			
	Residual resistance	$R \leq 10k\Omega$ 20Ω max. $10k\Omega < R < 50k\Omega$ 30Ω max. $50k\Omega \leq R$ Nominal total resistance of 0.1% or less			$R \leq 10k\Omega$ 50Ω max. $10k\Omega < R \leq 50k\Omega$ 80Ω max. $50k\Omega < R$ Nominal total resistance of 0.2% 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			
	Voltage proof	300V AC for 1minute			
Mechanical performance	Stopper strength	0.5N·m	0.5N·m (With push-lock mechanism type: 0.4N·m)		0.5N·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°C±2°C for 96h	-30±2°C for 96h -40±2°C for 96h (Vehicle-compatible)		-40±2°C for 240h
	Dry heat	70±2°C for 96h	70±2°C for 96h 85±2°C for 96h (Vehicle-compatible)		85±2°C for 240h
	Damp heat	40±2°C, 90 to 95%RH for 96h			60±2°C, 90 to 95%RH for 240h
Page	345		349		360

Push-on Switch Specifications

Items	RK097		RK119	
Contact arrangement	Single pole and single throw (Push on)			
Travel (mm)	0.5	1.5	0.5±0.3	1.5±0.5
Operating force (N)	4 [±] ₂	5±2	5±2	4±2
Rating	0.5A 12V DC		0.1A 5V DC (0.1mA 5V DC min.ratings)	
Contact resistance	100mΩ for initial period;200mΩ after operating life			
Operating life	10,000 times min.	20,000 times min.	100,000 times min.	20,000 times min.

- Metal Shaft Potentiometers Attached Parts377
- Metal Shaft Potentiometers Cautions378, 379

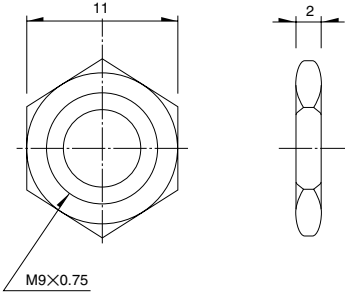
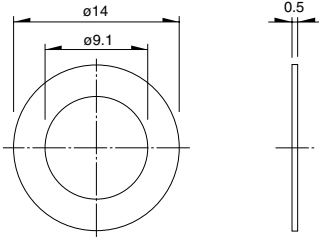
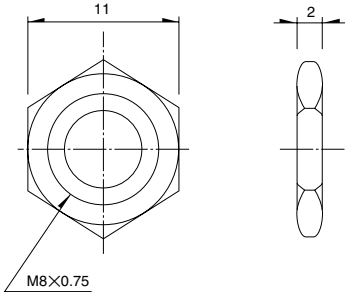
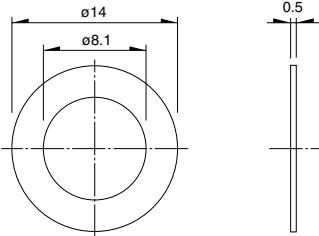
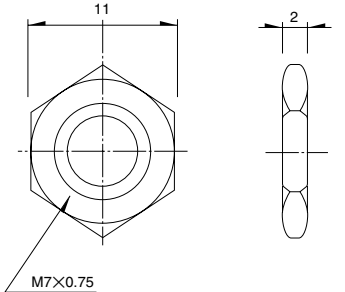
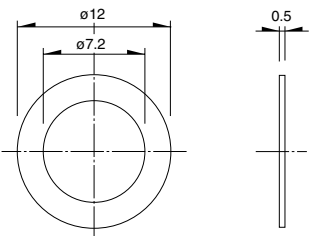
Notes

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

Attached Parts

The following parts are included with the product.

Unit:mm

Applicable products	Bearing screw diameter	Hexagonal nut	Flat washer
Rotary Potentiometers Slide Potentiometers RK09L RK168 RK097 RK203	M9		
Metal Shaft Insulated Shaft Knob Operating RK271	M8		
RK097 RK163	M7		
RK097	M6	