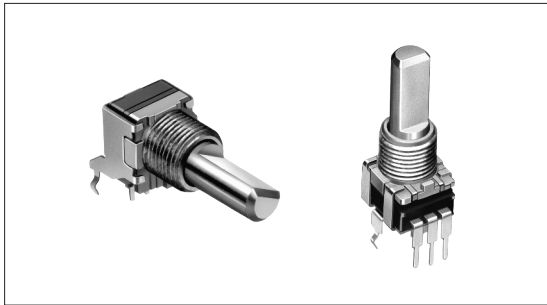


Metal Shaft Potentiometer 9mm Size Metal Shaft Snap-in Type

RK09L Series



Single-unit and dual-unit types suit 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°C to +70°C

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	2,000	RK09L1120A2S	1	
				With	20	1B		RK09L112003P		
	Vertical type		12.5	Without	10	15A		RK09L1120A69		
								RK09L1140A5E		
			15	Without	50	1B		RK09L1140A66	2	
								RK09L1140A5P		
			20	With	10	1B		RK09L1140A2U		
								RK09L114001T		
	Dual-unit		Horizontal type for tone	15	With	50		15A	RK09L1140A65	3
									Without	
Horizontal type for vol.		25	Without	10	3B	RK09L1220A1B				
						RK09L12B0A31				
Vertical type for tone		15	With	50	1B	RK09L12B0A3Z	4			
						RK09L124000Z				
Vertical type for vol.		20	Without	10	15A	RK09L1240A12				
						RK09L12D0A1W				
						RK09L12D0A1T				

Packing Specifications

Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case export packing	
1,000	2,000	364×473×176

Notes

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).

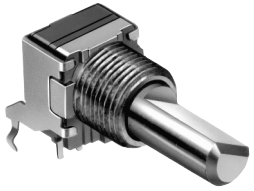
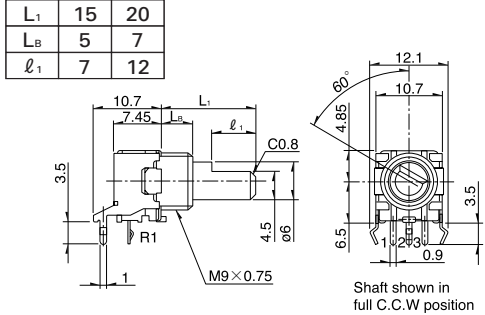
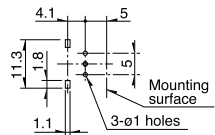

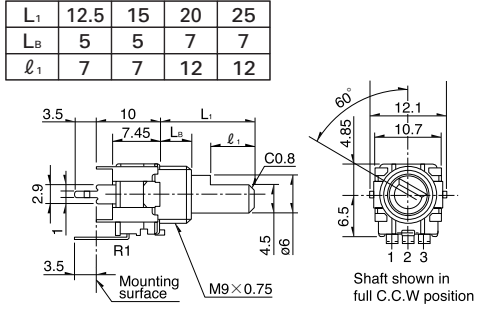
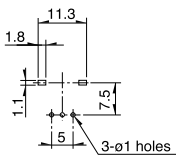
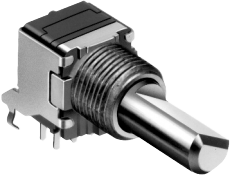
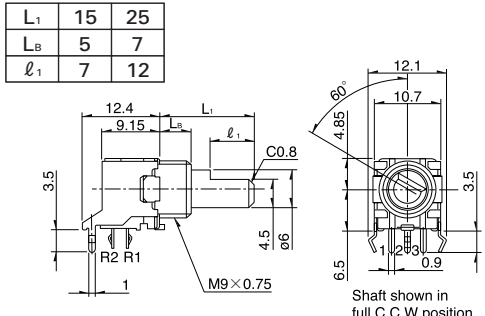
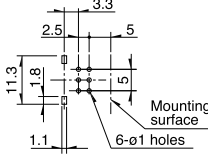
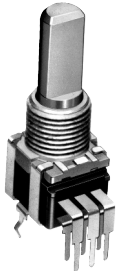
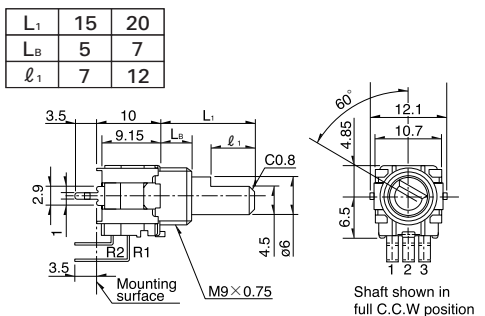
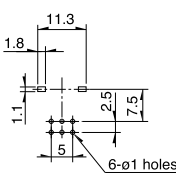
Refer to P.348 for product varieties.
Refer to P.348, 349, 470 for resistance taper.
Refer to P.379 for attached parts.

Dimensions

Unit:mm

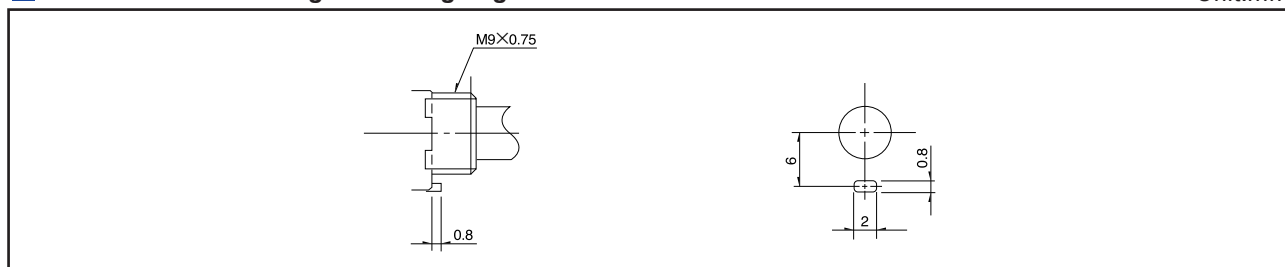
Rotary Potentiometers
 Slide Potentiometers

Metal Shaft
 Insulated Shaft
 Knob Operating
 Ring Type Devices

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																
L _B	5	7																
ℓ ₁	7	12																
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

Shaft shown in full CCW position

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.

Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Ring Type Devices

Refer to P.470 for resistance taper.
Refer to P.379 for attached parts.

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		

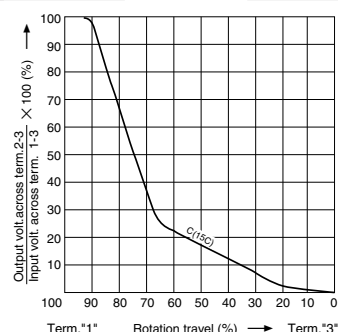
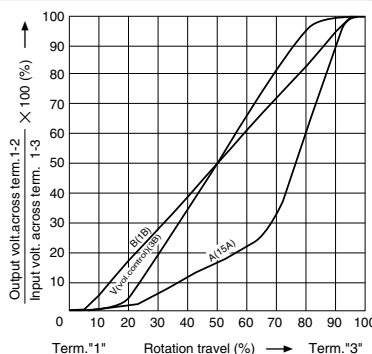
Detent

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
Ring Type Devices

List of Varieties

Rotary Potentiometers
Slide Potentiometers

Metal Shaft
Insulated Shaft
Knob Operating
Ring Type Devices

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		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 / ₀ 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	
Automotive use		—		○	○	○	
Electrical performance	Rated power	0.05W					
	Residual resistance	10kΩ ≤ R ≤ 10kΩ 20Ω max. 10kΩ < R < 50kΩ 30Ω max. 50kΩ ≧ R			Nominal total resistance of 0.1% or less		R ≤ 10kΩ 50Ω max. 10kΩ < R ≤ 50kΩ 80Ω max. 50kΩ < R Nominal total resistance of 0.2% or less
	Maximum attenuation (Volume control)	5kΩ ≧ R < 10kΩ 10kΩ ≧ R < 50kΩ 50kΩ ≧ R < 100kΩ 100kΩ ≧ R		70dB min. 80dB min. 90dB min. 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		346		350		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	1.5
Operating force (N)	4 ⁺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 cycles min.	20,000 cycles min.	100,000 cycles min.	20,000 cycles min. (Operating life without Load)

- Metal Shaft Potentiometers Attached Parts379
- Metal Shaft Potentiometers Cautions380, 381

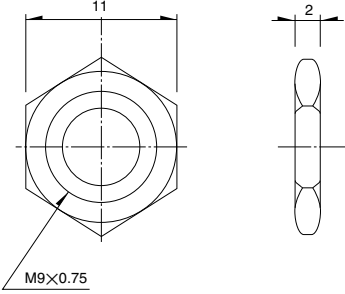
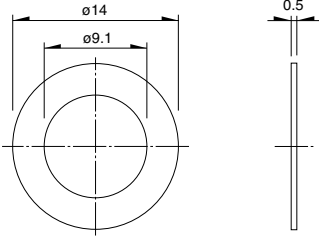
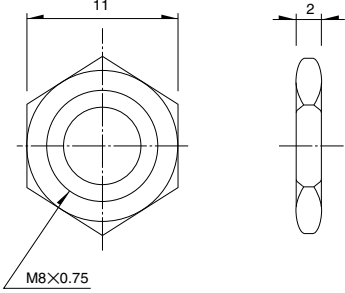
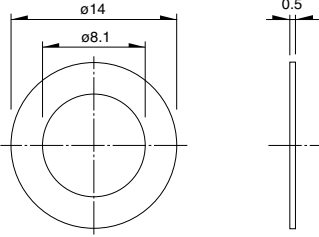
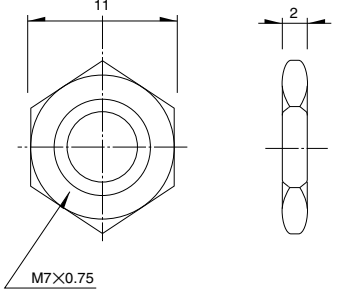
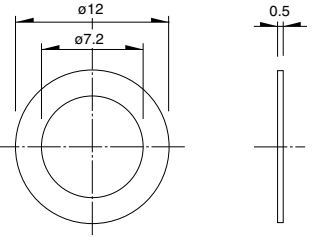
Notes

- ※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.
- marks in "Available for automotive use" indicate that some of the series products can work at the operating temperature range from -40°C to +85°C.

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 Ring Type Devices RK271	M8		
RK097 RK163	M7		
RK097	M6	