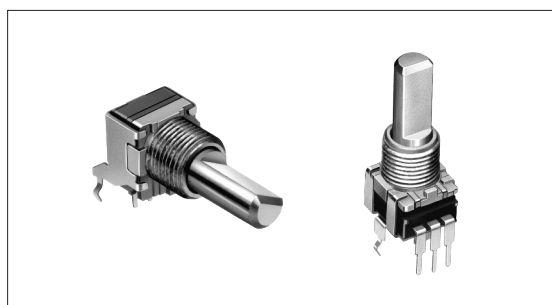


Metal Shaft Potentiometer 9mm Size Metal Shaft Snap-in Type

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

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	
	20		Without	10	15A	RK09L1120A69		2	
	12.5					RK09L1140A5E			
	15			50	1B	RK09L1140A66			
	20			10		RK09L1140A5P			
	With			5		RK09L1140A2U			
	25			Without		5			RK09L114001T
Dual-unit	Horizontal type for tone		15	With	50	15A		RK09L1140A65	3
	Without			100	RK09L122002M				
	Horizontal type for vol.		25	Without	50	3B		RK09L1220A1B	
	Vertical type for tone		15	With	50	1B		RK09L12B0A31	
			20	Without	10			15A	RK09L12B0A3Z
	15		RK09L124000Z						
	20		RK09L1240A12						
	Vertical type for vol.		15	Without	10	15A		RK09L12D0A1W	
20			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

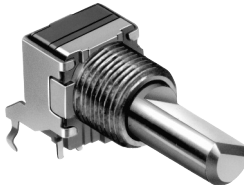
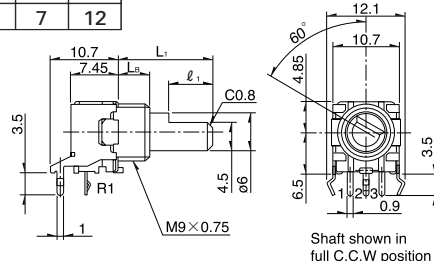
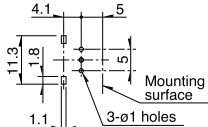
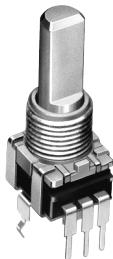
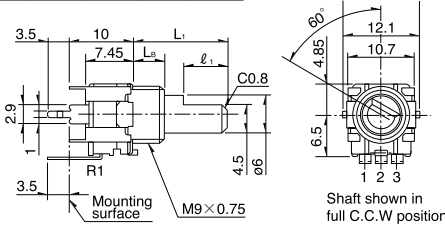
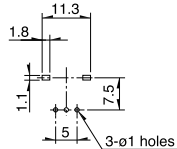
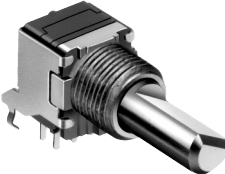
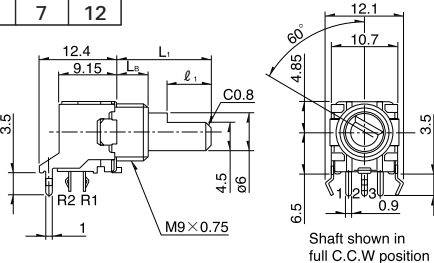
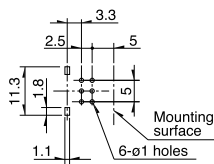

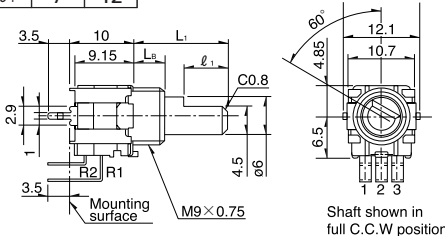
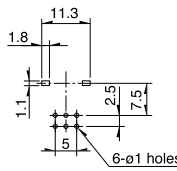
- Products other than those listed in above products are also available. Please contact us for details.
- Please place purchase orders per minimum order unit N (integer).

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

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

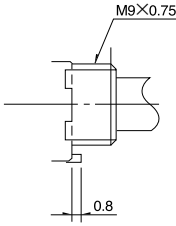
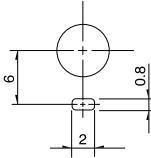
Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)															
1	<p>Single-shaft, single-unit Horizontal type RK09L1120</p> 	<table><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	<p>Single-shaft, single-unit Vertical type RK09L1140</p> 	<table><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	<p>Single-shaft, dual-unit Horizontal type RK09L1220 (For tone) RK09L12B0 (For vol.)</p> 	<table><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							
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><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

 
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Product Varieties

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

Total Resistance Variety

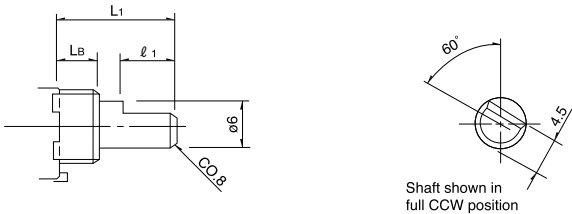
Total resistance (kΩ)	5	10	20	50	100
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Resistance Taper

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

Unit:mm



Technical drawing of a potentiometer shaft. The drawing shows a side view with dimensions L_1 , L_B , and l_1 . A detail view shows a 60° angle and a 4.5mm diameter. The shaft is shown in full CCW position.

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

RK09L1140-F15-C0-B103

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		

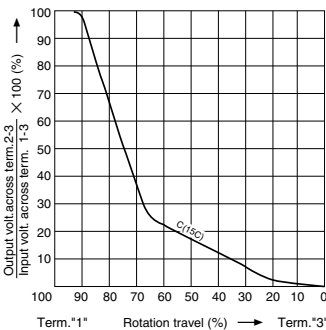
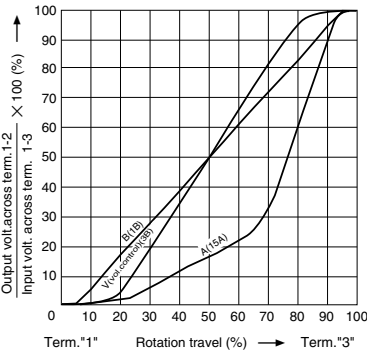
Detent

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.

List of Varieties

Rotary
PotentiometersSlide
PotentiometersMetal
ShaftInsulated
ShaftKnob
OperatingRing 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℃ max. 3s max.				350±10℃ 3 ⁺ ₀ s
	Dip soldering	260±5℃, 5±1s				――
	Reflow soldering	――				Please see P.364
Operating emperature range		－10℃ to +70℃		－20℃ to +70℃ －40℃ to +85℃(Vehicle-compatible)		－40℃ to +85℃
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 70dB min. 10kΩ ≤ R < 50kΩ 80dB min. 50kΩ ≤ R < 100kΩ 90dB min. 100kΩ ≤ 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℃±2℃ for 96h		－30±2℃ for 96h －40±2℃ for 96h(Vehicle-compatible)		－40±2℃ for 240h
	Dry heat	70±2℃ for 96h		70±2℃ for 96h 85±2℃ for 96h(Vehicle-compatible)		85±2℃ for 240h
	Damp heat	40±2℃, 90 to 95% RH for 96h				60±2℃, 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

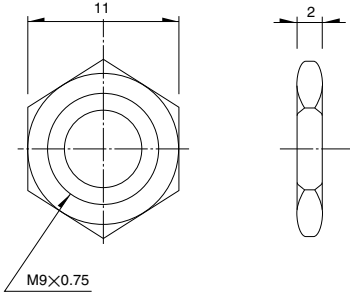
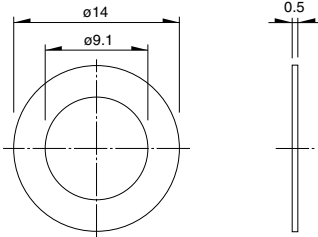
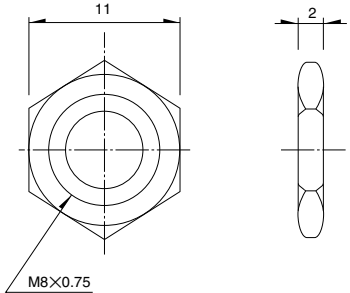
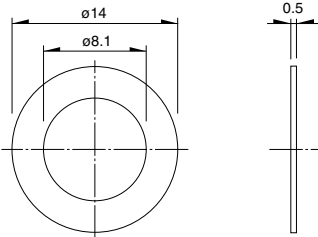
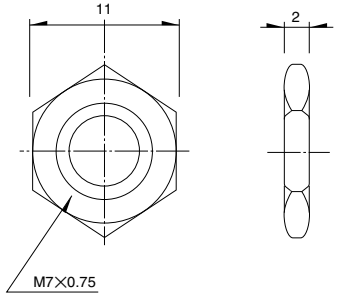
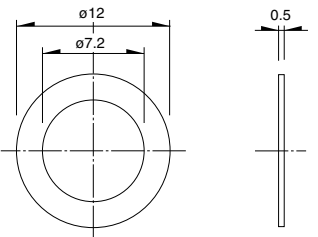
Notes

- ※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
RK09L RK168 RK097 RK203	M9		
RK271	M8		
RK097 RK163	M7		
RK097	M6	