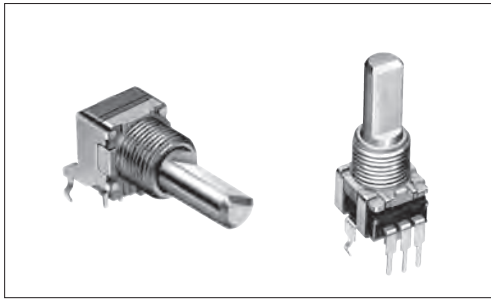


Single-unit and dual-unit types suit a variety of controls



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	15,000 cycles
Operating temperature range	-10°C to +70°C

Product Line

Number of resistor elements	Control part orientation	Shaft type	Length of the shaft L ₁ (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.	
							Japan	Export			
Single-unit	Horizontal	Flat	15	Without	10	1B	1,000	2,000	RK09L1120A5F	1	
				With					RK09L1120036		
			20	Without					RK09L1120A0Z		
				With					RK09L112003S		
	Vertical		15	Without					RK09L1140A5L		2
				With					RK09L114001E		
			20	Without					RK09L1140A2U		
				With					RK09L114001T		
Dual-unit	Horizontal for tone	15	With	10	15A	1,000	2,000	RK09L122002H	3		
		25						RK09L122002L			
	Horizontal for vol.	15	Without					RK09L12B0A4S			
		25						RK09L12B0A1V			
	Vertical for tone	15	With					RK09L1240015		4	
		20						RK09L1240019			
	Vertical for vol.	15	Without					RK09L12D0A1W			
		20						RK09L12D0A1T			

Note

Other varieties are also available. Refer to "Other Specifications" (P.284).

Packing Specifications


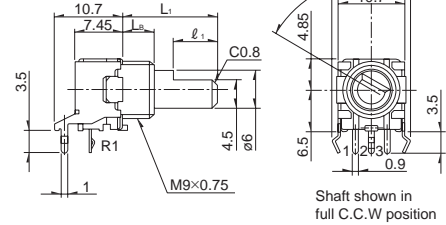
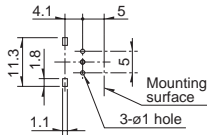

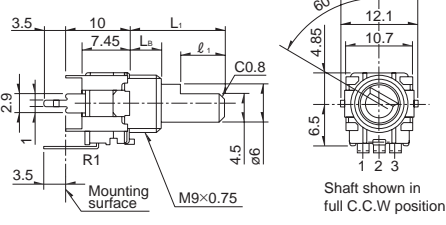
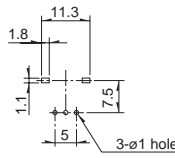

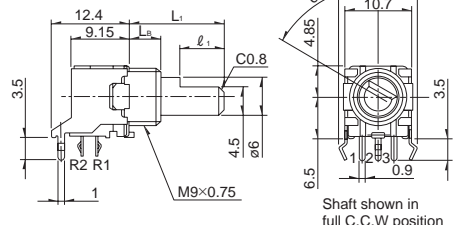
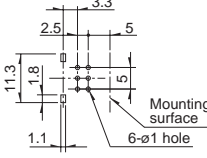

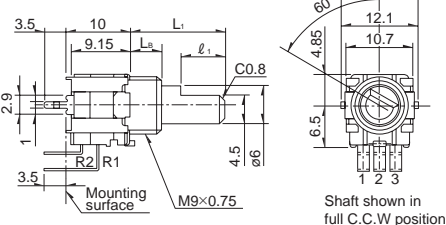
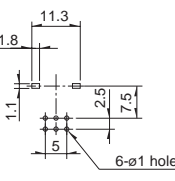
Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
1,000	2,000	479×369×181

Refer to P.284 for other specifications.
 Refer to P.284 for attached parts.
 Refer to P.285 for ordering products not listed.
 Refer to P.311 for soldering conditions.

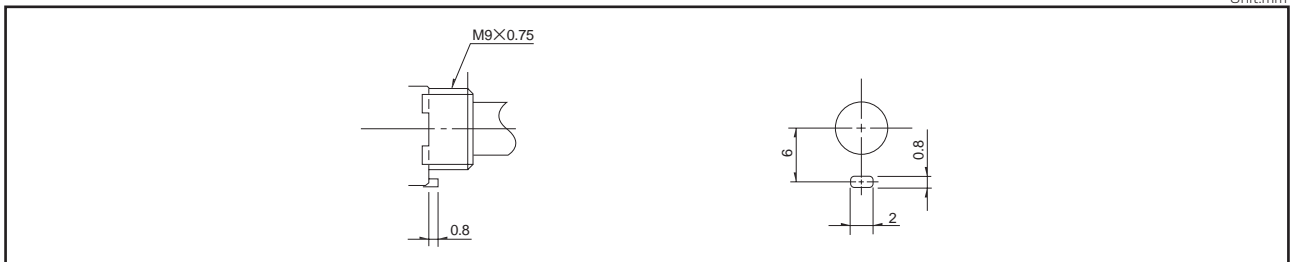
■ Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)															
1	<p>Single-shaft, single-unit Horizontal RK09L1120</p> 	<table border="1"> <tr> <td>L_1</td> <td>15</td> <td>20</td> </tr> <tr> <td>L_B</td> <td>5</td> <td>7</td> </tr> <tr> <td>l_1</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-ϕ1 hole</p>						
L_1	15	20																
L_B	5	7																
l_1	7	12																
2	<p>Single-shaft, single-unit Vertical RK09L1140</p> 	<table border="1"> <tr> <td>L_1</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>l_1</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-ϕ1 hole</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 RK09L1220 (For tone) RK09L12B0 (For vol.)</p> 	<table border="1"> <tr> <td>L_1</td> <td>15</td> <td>25</td> </tr> <tr> <td>L_B</td> <td>5</td> <td>7</td> </tr> <tr> <td>l_1</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-ϕ1 hole</p>						
L_1	15	25																
L_B	5	7																
l_1	7	12																
4	<p>Single-shaft, dual-unit Vertical RK09L1240 (For tone) RK09L12D0 (For vol.)</p> 	<table border="1"> <tr> <td>L_1</td> <td>15</td> <td>20</td> </tr> <tr> <td>L_B</td> <td>5</td> <td>7</td> </tr> <tr> <td>l_1</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-ϕ1 hole</p>						
L_1	15	20																
L_B	5	7																
l_1	7	12																

■ Dimensions of Bushing and Fixing Lug

Unit:mm



9mm Size Metal Shaft Snap-in Type / Other Specifications

In addition to the products listed, we can accommodate the follow specifications.

Total Resistance Variety

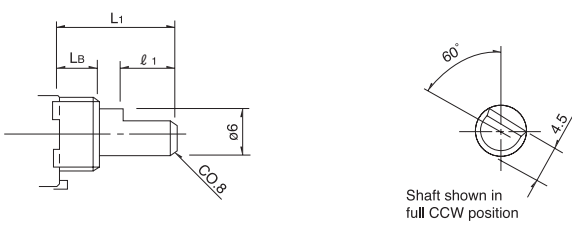
Total resistance (k Ω)	5	10	20	50	100
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Resistance Taper

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

Shaft shown in full CCW position

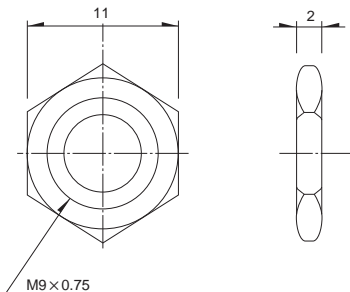
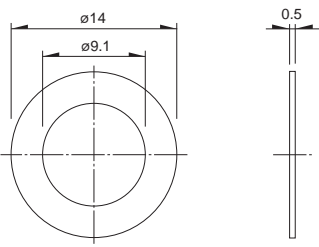
Note

Marked are specifications recommended by Alps Alpine.

9mm Size Metal Shaft Snap-in Type / Attached Parts

The following parts are included with the product.

Unit:mm

Nut	Washer
 <p>M9 x 0.75</p>	

9mm Size Metal Shaft Snap-in Type / Ordering Products Not Listed

When ordering product varieties that are not listed, specify referring to the examples below.

Sample Part Number



Model type

Code	Model type
112	Single-unit Horizontal
114	Single-unit Vertical
122	Dual-unit Horizontal for tone
124	Dual-unit Vertical for tone
12B	Dual-unit Horizontal for vol.
12D	Dual-unit Vertical 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

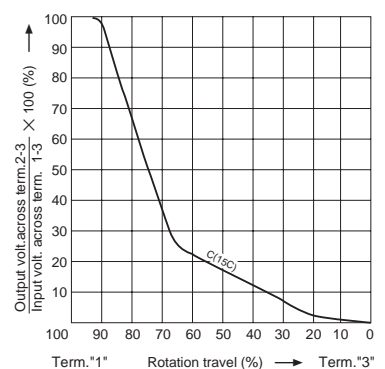
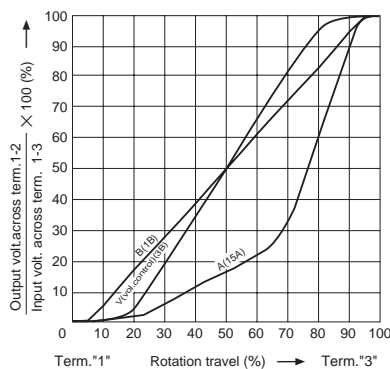
Code	Center detent
C0	Without
C1	With

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 (k Ω)	Code	Total resistance (k Ω)
502	5	503	50
103	10	104	100
203	20	—	—

Note

Marked are specifications recommended by Alps Alpine.

Metal Shaft Potentiometers

List of Varieties

Type	9mm size				
Series	RK09L		RK0971	RK0972	
	Single-shaft			Dual-shaft	
Number of resistor elements	Single/dual			Dual	
Photo					
Control part orientation	Horizontal	Vertical	Horizontal		
Fixing method of bushing	Screw				
Operating temperature range	-10°C to +70°C		-20°C to +70°C -40°C to +85°C (Vehicle-compatible)		
Operating life	15,000 cycles				
Available for automotive use	—	—	○	○	
Life cycle (availability)					
Electrical performance	Total resistance (kΩ)	10, 20, 50, 100			
	Resistance taper	15A, 1B, 3B, 15C			
	Rated Power	0.05W			
	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. $50k\Omega \leq R$ 90dB min.	$5k\Omega \leq R < 10k\Omega$ 70dB min. $10k\Omega \leq R < 50k\Omega$ 80dB min. $50k\Omega \leq R < 100k\Omega$ 90dB min. $100k\Omega \leq R$ 100dB min.		
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max.			
	Insulation resistance	100MΩ min. 250V DC			
	Voltage proof	300V AC for 1 minute			
	Center-taps	Without	Without / With		
	Mechanical performance	Detent	Without, Center		
Stopper strength		0.5N·m	0.5N·m (With push-lock mechanism: 0.4N·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			
Shaft style	Flat type			Inner-shaft: flat type Outer-shaft: slotted type	
Terminal style	Insertion				
Attached switch	—	—	Rotary switch Push-on switch Push-lock switch	—	
Page	282		286	287	

Metal Shaft Potentiometers Soldering Conditions	311
Potentiometers Cautions	384
Potentiometers Measurement and Test Methods	386
Potentiometers Resistance Taper	388

Notes

- 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.
- Indicates applicability to some products in the series.

Reference for Manual Soldering

Series		Tip temperature	Soldering time	No. of solders
RK09L, RK097		350°C max.	3s max.	1 time
RK271		350°C max.	5s max.	1 time
RK501		350±10°C	5 ⁺¹ ₀ s	1 time
RK163		350°C max.	5s max.	1 time
RK168	Potentiometer terminal	300°C max.	3s max.	1 time
	Motor terminal	350°C max.	2s max.	

Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
RK09L, RK097	100°C max.	2 min. max.	260±5°C	5±1s	2 times max.
RK501	120±10°C	2 min. max.	260±5°C	5±1s	2 times