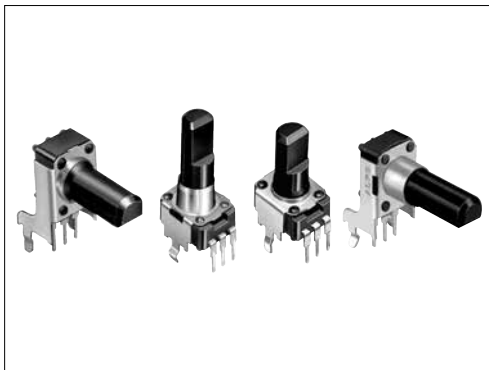


Compact type potentiometer with 9.8mm width is ideal for designing high density sets



■ Typical Specifications



Items		Specifications
Total resistance tolerance	Single-unit	±20%
	Dual-unit	±30%
Maximum operating voltage	Single-unit	50V AC, 20V DC
	Dual-unit	50V AC for AC only
Total rotational angle	Single-unit	RK09K: 280° ±5° RK09D: 300° ±5°
	Dual-unit	280° ±5°
Rotational torque		1 to 8mN·m
Operating life	Single-unit	5,000 cycles
	Dual-unit	10,000 cycles
Operating temperature range		-10°C to +70°C

■ Product Line

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft LM <sub>1</sub> (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.	
									Japan	Export			
Single-unit (20V DC)	Vertical type	280° ±5°	Without	Flat	15	With	10	1B	1,000	2,000	RK09K113004U	2	
							5				RK09K1130AU2		
						Without	10				15A		RK09K1130A6S
							20						RK09K1130AJ3
							50						RK09K1130ACM
							10						RK09K1130ACL
				20			RK09K1130AAU						
				25			RK09K1130AH1						
				Knob	20	With	10	1B			RK09K1130BM4		
							30				RK09K1130A8G		
							15				RK09K1130A5R		
							20				RK09K1130081		
	30		RK09K1130A70										
	15		RK09K1130AP5										
	Screw driver	20	Without	5	15A	RK09K1130AV7							
				10		RK09K1110A2S							
				20		RK09K1110AK4							
				5	1B	RK09K1110AH8							
				10		RK09K1110B1V							
				10		RK09K1110A0J							
	Horizontal type H=6.5mm	20	With	50	15A	RK09K11100E9							
				15		RK09K1110B1R							
				20		RK09K1110B26							
				20		RK09D1130C1B							
25					RK09D1130C2P								
50					RK09D1130A1L								
Horizontal type H=10mm	20	Without	10	1B	RK09D1130A1N								
			5		RK09D1130C3W								
			10		RK09D1130C3C								
			20		RK09D113000F								
			25		RK09D113000F								
			30		RK09D113000F								
Vertical type	300° ±5°	With	Flat	25	Without	10	1B	RK09D1130C0R	4				
						50							
						10							
						20							
						25							
						30							
Horizontal type H=10mm	25	Without	Flat	25	Without	50			3				
						50							

Note

Other varieties are also available. Refer to "Other Specifications" (P.350).

Refer to P.350 for other specifications.  
Refer to P.351 for ordering products not listed.  
Refer to P.366 for soldering conditions.

Rotary Potentiometers  
 Slide Potentiometers  
 Metal Shaft  
 Insulated Shaft  
 Knob Operating  
 Through Shaft Type  
 Ring Type

**Product Line**

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft LM <sub>1</sub> (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.	
									Japan	Export			
Dual-unit (50V AC)	Vertical type	280°±5°	Without	Flat	15	Without	10	15A	1,000	2,000	<b>RK09K12C0A19</b>	10	
					20		50						<b>RK09K12C0A2S</b>
					30		10						
					25								10
	30		10		<b>RK09K12C0A8K</b>								
	Horizontal type H=6.5mm				Without	15	50				<b>RK09K12A0A2K</b>	9	
			With			20					<b>RK09K12A0A6R</b>		
					<b>RK09K12A0B0W</b>	11							

**Clear Shaft**

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft LM <sub>1</sub> (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.
									Japan	Export		
Single-unit (20V DC)	Vertical type	280°±5°	Without	Knob	20	Without	10	1B	1,000	2,000	<b>RK09K1130D62</b>	7

**Note**

Other varieties are also available. Refer to "Other Specifications" (P.350).

**Packing Specifications**


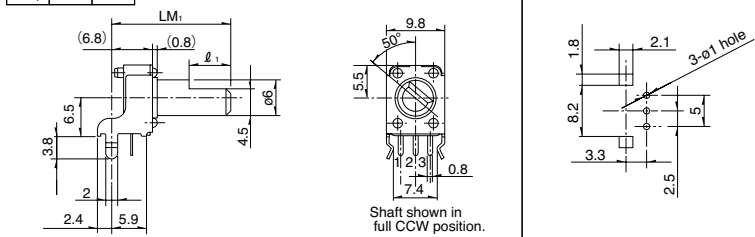
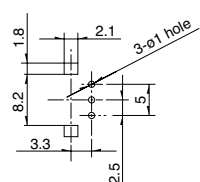
Bulk

Number of packages (pcs.)		Export package measurements (mm)
1 case / Japan	1 case / export packing	
1,000	2,000	528×369×178

**Dimensions**

Single-shaft, single-unit


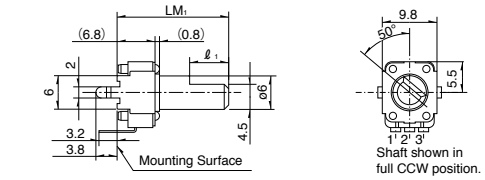
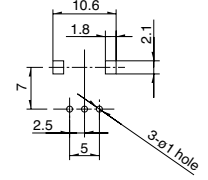
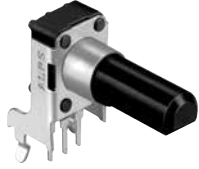
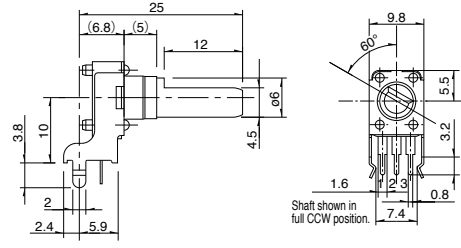
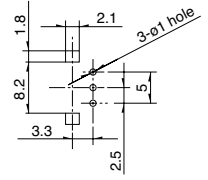

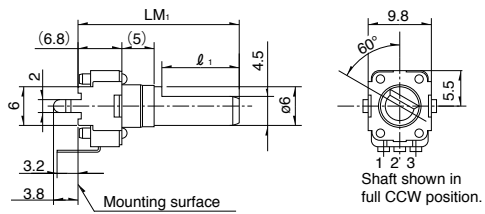
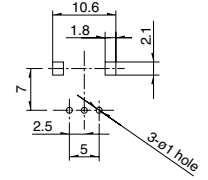

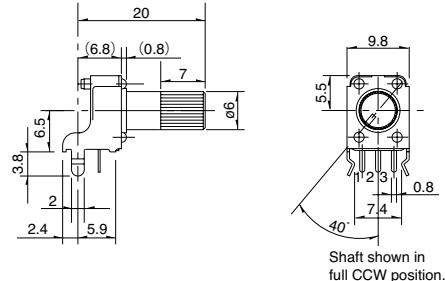
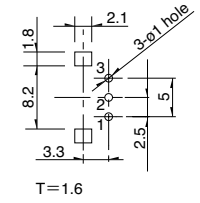
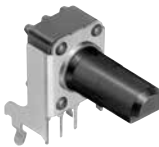
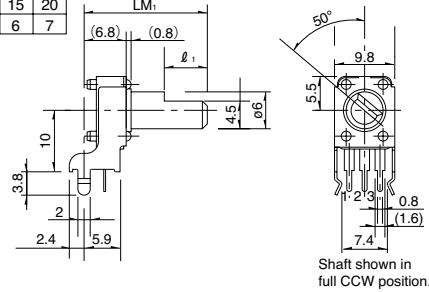
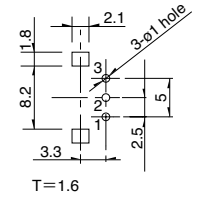
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)						
1		<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> </tr> </table>  <p>Shaft shown in full CCW position.</p>	LM <sub>1</sub>	15	20	ℓ <sub>1</sub>	6	7	
LM <sub>1</sub>	15	20							
ℓ <sub>1</sub>	6	7							

Refer to P.350 for other specifications.  
Refer to P.351 for ordering products not listed.  
Refer to P.366 for soldering conditions.

■ Dimensions  
Single-shaft, single-unit

Unit:mm

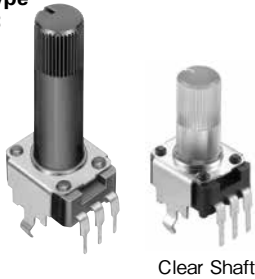
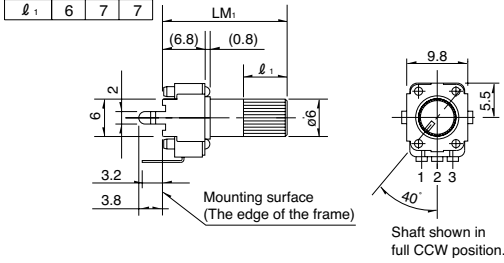
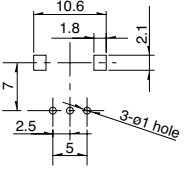

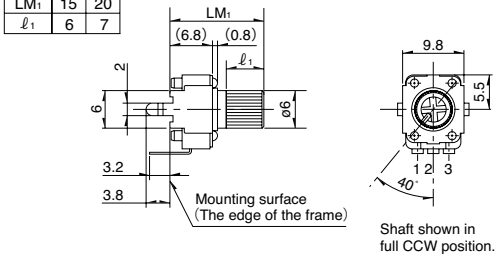
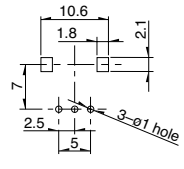
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)										
2	<p><b>Vertical type RK09K113</b></p> 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table> 	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12	
LM <sub>1</sub>	15	20	25	30									
ℓ <sub>1</sub>	6	7	12	12									
3	<p><b>Horizontal type with collar RK09D111</b></p> 												
4	<p><b>Vertical type with collar RK09D113</b></p> 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> </tr> </table> 	LM <sub>1</sub>	20	25	30	ℓ <sub>1</sub>	7	12	12			
LM <sub>1</sub>	20	25	30										
ℓ <sub>1</sub>	7	12	12										
5	<p><b>Horizontal type RK09K111</b></p> 												
6	<p><b>Horizontal type RK09K111</b></p> 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> </tr> </table> 	LM <sub>1</sub>	15	20	ℓ <sub>1</sub>	6	7					
LM <sub>1</sub>	15	20											
ℓ <sub>1</sub>	6	7											

Rotary Potentiometers  
 Slide Potentiometers  
 Metal Shaft  
 Insulated Shaft  
 Knob Operating  
 Through Shaft Type  
 Ring Type

**■ Dimensions**

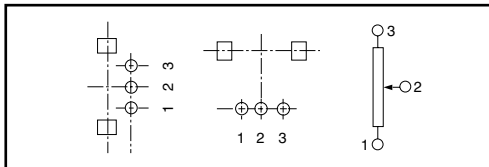
Single-shaft, single-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
7	<p><b>Vertical type RK09K113</b></p>  <p>Clear Shaft</p>	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>7</td> </tr> </table>  <p>Mounting surface (The edge of the frame)</p> <p>Shaft shown in full CCW position.</p>	LM <sub>1</sub>	15	20	30	ℓ <sub>1</sub>	6	7	7	
LM <sub>1</sub>	15	20	30								
ℓ <sub>1</sub>	6	7	7								
8	<p><b>Vertical type RK09K113</b></p> 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> </tr> </table>  <p>Mounting surface (The edge of the frame)</p> <p>Shaft shown in full CCW position.</p>	LM <sub>1</sub>	15	20	ℓ <sub>1</sub>	6	7			
LM <sub>1</sub>	15	20									
ℓ <sub>1</sub>	6	7									

**■ Terminal Layout / Circuit Diagram**


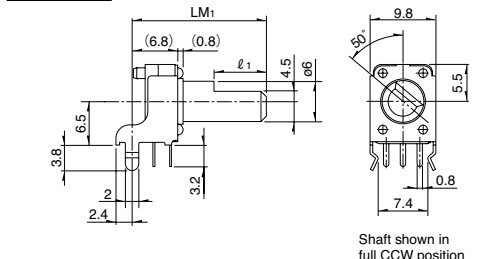
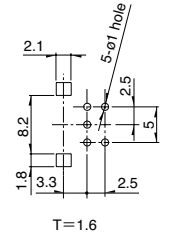

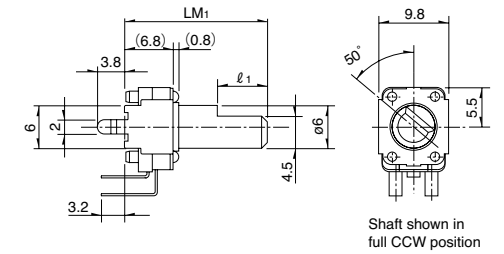
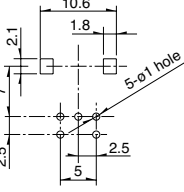
Single-unit



**■ Dimensions**

Single-shaft, dual-unit

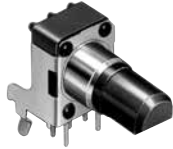
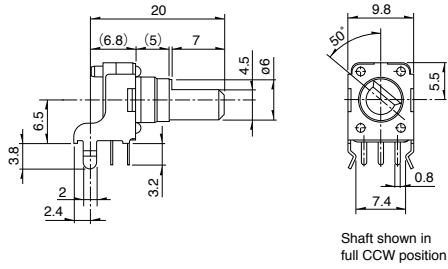
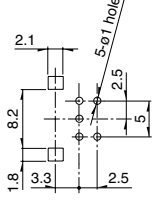

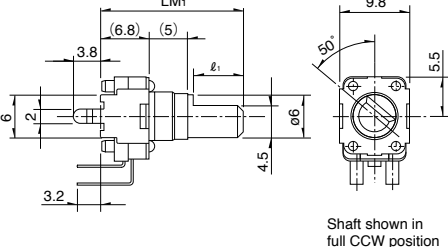
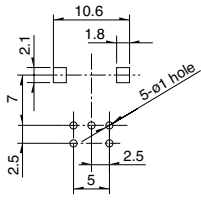
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
9	<p><b>Horizontal type RK09K12A</b></p> 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> </tr> </table>  <p>Mounting surface (The edge of the frame)</p> <p>Shaft shown in full CCW position.</p>	LM <sub>1</sub>	15	20	ℓ <sub>1</sub>	6	7			
LM <sub>1</sub>	15	20									
ℓ <sub>1</sub>	6	7									
10	<p><b>Vertical type RK09K12C</b></p> 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> </tr> </table>  <p>Mounting surface (The edge of the frame)</p> <p>Shaft shown in full CCW position.</p>	LM <sub>1</sub>	15	20	30	ℓ <sub>1</sub>	6	7	12	
LM <sub>1</sub>	15	20	30								
ℓ <sub>1</sub>	6	7	12								

■ Dimensions

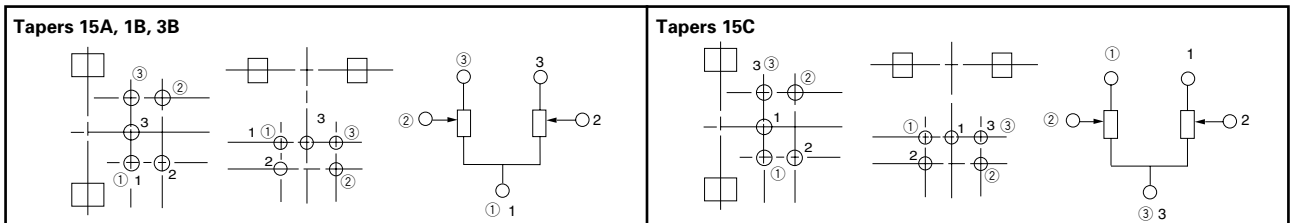
Single-shaft, dual-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)						
11	<p><b>Horizontal type with collar RK09K12A</b></p> 								
12	<p><b>Vertical type with collar RK09K12C</b></p> 	<table border="1" data-bbox="657 721 794 766"> <tr> <td>LM<sub>1</sub></td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>12</td> <td>12</td> </tr> </table> 	LM <sub>1</sub>	25	30	ℓ <sub>1</sub>	12	12	
LM <sub>1</sub>	25	30							
ℓ <sub>1</sub>	12	12							

■ Terminal Layout / Circuit Diagram

Dual-unit



Rotary Potentiometers  
 Slide Potentiometers  
 Metal Shaft  
 Insulated Shaft  
 Knob Operating  
 Through Shaft Type  
 Ring Type

# 9mm Size Insulated Shaft Snap-in Type / Other Specifications

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

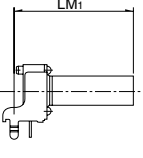
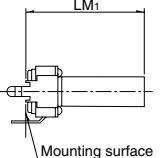
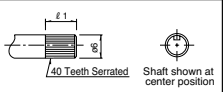
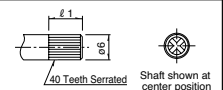
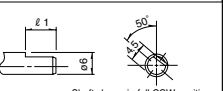
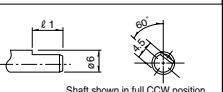
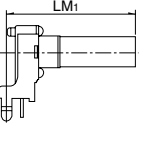
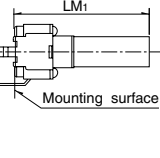
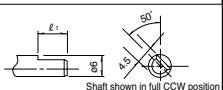
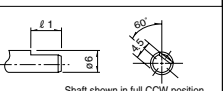
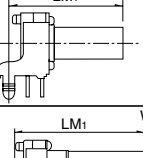
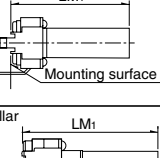
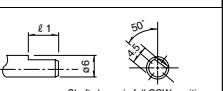
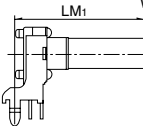
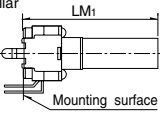
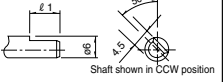
## Total Resistance Variety

Total resistance (k Ω)	5	10	20	50	100	200
------------------------	---	----	----	----	-----	-----

## Resistance Taper

Resistance taper	15A	1B	3B	15C
------------------	-----	----	----	-----

## Shaft Variety

Number of resistor elements	Style	Shaft type		Shaft color										
		Knob variety	Detail dimensions											
Single-unit	Horizontal type  Vertical type 	Knob type (φ6) 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>7</td> <td>7</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	7	7	Black
		LM <sub>1</sub>	15	20	25	30								
		ℓ <sub>1</sub>	6	7	7	7								
		Screw-driver adjustment type 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>9.5</td> <td>15</td> <td>20</td> <td></td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>—</td> <td>6</td> <td>7</td> <td></td> </tr> </table>	LM <sub>1</sub>	9.5	15	20		ℓ <sub>1</sub>	—	6	7		
	LM <sub>1</sub>	9.5	15	20										
	ℓ <sub>1</sub>	—	6	7										
	Flat type 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12		
	LM <sub>1</sub>	15	20	25	30									
ℓ <sub>1</sub>	6	7	12	12										
Flat type 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12			
LM <sub>1</sub>	15	20	25	30										
ℓ <sub>1</sub>	6	7	12	12										
With collar  Vertical type 	Flat type 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> <td></td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> <td></td> </tr> </table>	LM <sub>1</sub>	20	25	30		ℓ <sub>1</sub>	7	12	12		Gray (15, 20, 25) Black (30)	
	LM <sub>1</sub>	20	25	30										
	ℓ <sub>1</sub>	7	12	12										
	Flat type 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> <td></td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> <td></td> </tr> </table>	LM <sub>1</sub>	20	25	30		ℓ <sub>1</sub>	7	12	12			
LM <sub>1</sub>	20	25	30											
ℓ <sub>1</sub>	7	12	12											
Horizontal type  Vertical type 	Flat type 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12	Black	
	LM <sub>1</sub>	15	20	25	30									
ℓ <sub>1</sub>	6	7	12	12										
With collar  Vertical type 	Flat type 	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> <td></td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> <td></td> </tr> </table>	LM <sub>1</sub>	20	25	30		ℓ <sub>1</sub>	7	12	12			
LM <sub>1</sub>	20	25	30											
ℓ <sub>1</sub>	7	12	12											

### Note

Marked are specifications recommended by Alps Alpine.

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

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
K111	280°single-unit horizontal type H=6.5
K113	280°single-unit vertical type
D111	300°single-unit horizontal type H=10
D113	300°single-unit vertical type
K12A	280°dual-unit horizontal type H=6.5
K12C	280°dual-unit vertical type

\*All RK09D types are single-ganged.  
 \*For other horizontal type mount height requirements, please indicate separately.

Shaft type

Code	Shaft type	Code	Shaft type
F	Flat	X	Screw driver
K	Knob	-	-

\*All RK09D and RK09K12 types are only available in flat format.

Length of the shaft LM<sub>1</sub> (mm)

Code	Length of the shaft	Code	Length of the shaft
15	15	25	25
20	20	30	30

\*20, 25 and 30 are the only available RK09D types.  
 \*9.5, 15 and 20 are the only available models in the Screwdriver shape.

Detent

Code	Center detent
C0	Without
C1	With

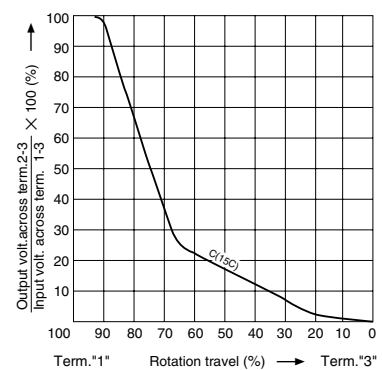
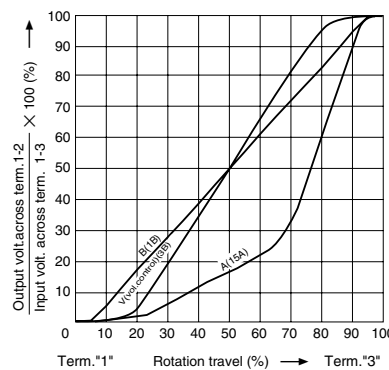
Resistance taper

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

B: For tone & general  
 V: For vol.  
 \*1B is a recommended specification for single-unit.  
 \*3B is a recommended specification for dual-unit.

Total resistance

Code	Total resistance (k Ω)	Code	Total resistance (k Ω)
502	5	503	50
103	10	104	100
203	20	204	200














## Notes

1. RK09D comes with a collar.
2. The recommended specification for RK09K does not include a collar. For collar requirements please indicate separately.
3.   Marked are specifications recommended by Alps Alpine.
4. Please inquire for details on shaft varieties for the RK09K12 type (280° , Dual-unit).

# Insulated Shaft Potentiometers

## List of Varieties

Type	9mm size			11mm size	12mm size	14mm size	
Series	<b>RK09K11</b> <b>RK09D11</b>	<b>RK09K12</b>	<b>RK09Y11L</b>	<b>RK11K</b>	<b>RK12L12</b>	<b>RK14K</b>	
	Single-unit	Dual-unit	Single-unit	Single-unit	Dual-unit	Dual-unit	
Photo							
Terminal mounting	Vertical / Horizontal		Horizontal	Vertical / Horizontal			
Bushing	Without			With / Without	Without	With / Without	
Operating temperature range	-10°C to +70°C						
Operating life	5,000 cycles	10,000 cycles	1,000,000 cycles	15,000 cycles			
Available for automotive use	—	—	—	—	—	—	
Life cycle							
Electrical performance	Total resistance (k Ω)	5, 10, 20, 50, 100, 200		10	5, 10, 20, 50, 100, 200		
	Resistance taper	15A, 1B, 3B, 15C		B	15A, 1B, 3B, 15C		
	Total resistance tolerance	±20%	±30%	±30%	±20%		
	Rated power	0.05W	0.03W	0.01W	0.05W		
	Maximum operating voltage	50V AC 20V DC	50V AC for AC only	50V AC 5V DC	50V AC 20V DC	50V AC for AC only	
	Gang error	—	-40dB to 0dB 3dB max.	—	—	Volume control -40dB to 0dB 3dB max. For tone control within 2dB at center	
	Insulation resistance	100MΩ min. 250V DC			100MΩ min. 500V DC	100MΩ min. 250V DC	
	Voltage proof	250V AC for 1minute			500V AC for 1minute	300V AC for 1minute	
	Center-taps	Without			Without / With	Without	Without / With (Volume control)
Mechanical performance	Detent	Without, Center		Without	Without, Center	Without, Center	
	Stopper strength	0.3N·m		—	Without bushing 0.5N·m With bushing 0.6N·m	0.5N·m 0.6N·m	
	Push-pull strength	50N max.		30N max.	80N 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 configuration	Flat type, Knob type, Screwdriver type			Flat type			
Terminal style	Insertion						
Page	345 364(RK09D117)		352	353	357 364(RK12L12H, RK12L127)	360	

Insulated Shaft Potentiometers Soldering Conditions	366
Potentiometers Cautions	418
Potentiometers Measurement and Test Methods	420
Potentiometers Resistance Taper	422

### Note

● Indicates applicability to all products in the series.



## Reference for Manual Soldering

Series	Tip temperature	Soldering time	No. of solders
<b>RK09D, RK09K, RK09Y11L, RK11K, RK12L, RK14K</b>	350°C max.	3s max.	1 time

## Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
<b>RK12L</b>	100°C	1 min. max.	260°C max.	5s max.	2 time max.

Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Through Shaft Type

Ring Type