

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

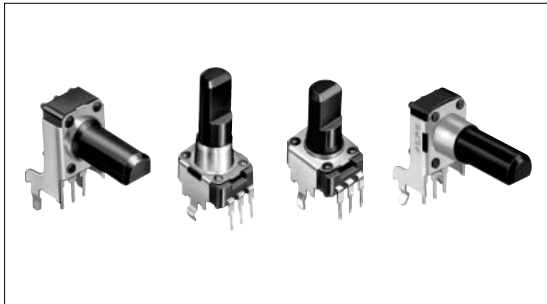
RK09K/RK09D Series



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

Rotary Potentiometers

Slide Potentiometers



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	5,000cycles
	Dual-unit	10,000cycles
Operating temperature range		- 10 to + 70

Metal Shaft

Insulated Shaft

Knob Operating

Product Line

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k)	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.			
Single-unit (20V DC)	Vertical type	280 ± 5 °	Without	Flat	15	With	10	1B	1,000	RK09K113004U	2			
							5			RK09K1130AU2				
							10			RK09K1130A6S				
					Without	20		20		RK09K1130AJ3				
								50		RK09K1130ACM				
								10		RK09K1130ACL				
				Knob	15	20	With	10		5		RK09K1130AAU		
								20		10		RK09K1130AH1		
								30		5		RK09K1130BM4		
				Driver	20	15	Without	15		5		10	10	RK09K1130A8G
												20	10	RK09K1130A5R
												30	10	RK09K1130081
	Knob	20	15		With	10		5	RK09K1130A70					
						20		5	RK09K1130AP5					
						30		5	RK09K1130AV7					
	Horizontal type H = 6.5mm	Vertical type	300 ± 5 °	With	Flat	15	Without	10	15A	RK09K1110A2S	1			
								20	1B	RK09K1110AK4				
								5	1B	RK09K1110AH8				
					Knob	20	15	With	10	10		RK09K1110B1V		
									50	15A		RK09K1110A0J		
									50	15A		RK09K11100E9		
		Horizontal type H = 10mm	Vertical type	300 ± 5 °	Without	Flat	15	Without	10	1B		RK09K1110B1R	6	
												50		RK09D1130C1B
												10		RK09D1130C2P
With			20	25		50	10	10	RK09D1130A1L					
												10		RK09D1130A1N
												10		RK09D1130C3W
Horizontal type H = 10mm	Vertical type	300 ± 5 °	With	Flat	20	With	10	RK09D1130C3C						
								10	RK09D113000F					
								50	RK09D1110C0R					

Product Line

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k)	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.
Dual-unit (Not applicable to DC)	Vertical type	280 ± 5 °	Without	Flat	15	Without	10	15A	1,000	RK09K12C0A19	10
					20		50			RK09K12C0A2S	
			30		20		RK09K12C0A8G				
			25		20		RK09K12C0D0U				
	Horizontal type H = 6.5mm		Without		30		10			RK09K12C0A8K	12
					15		50			RK09K12A0A2K	
			With		20		50			RK09K12A0A6R	9
					20		50			RK09K12A0B0W	


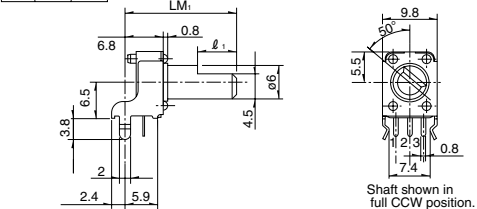
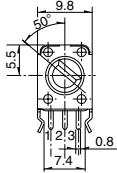
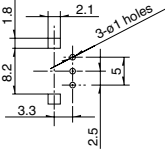

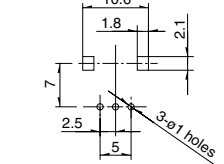
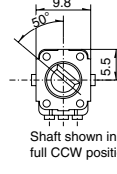
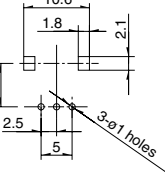
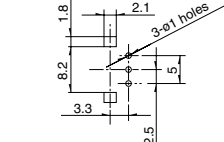

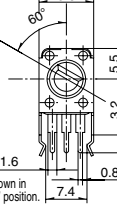
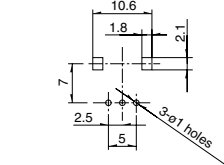
Note

Products other than those listed in above products are also available. Please contact us for details.

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>LM₁</td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> </tr> </table>  <p>Shaft shown in full CCW position.</p>	LM ₁	15	20	ℓ ₁	6	7					
LM ₁	15	20											
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Refer to P.372 for product varieties.

Dimensions

Single-shaft, single-unit

Unit:mm

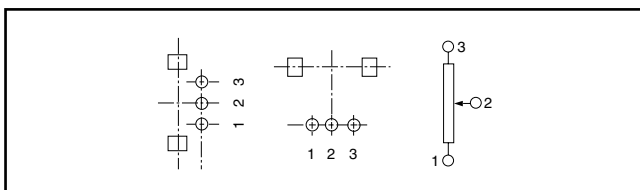
Rotary Potentiometers
 Slide Potentiometers

Metal Shaft
 Insulated Shaft
 Knob Operating

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
5											
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ℓ ₁	6	7	7								
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LM ₁	15	20									
ℓ ₁	6	7									

Terminal Layout/Circuit Diagram


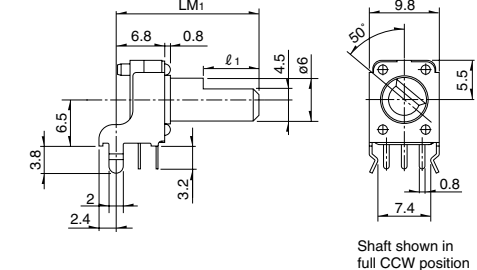
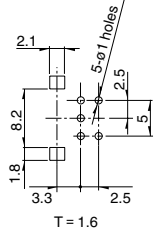

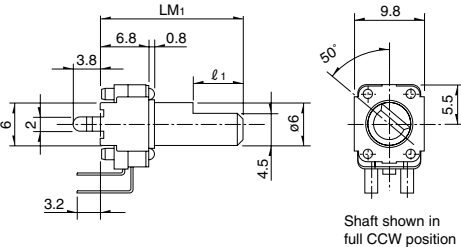
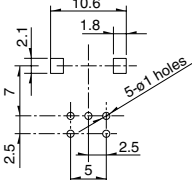
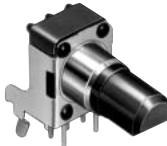
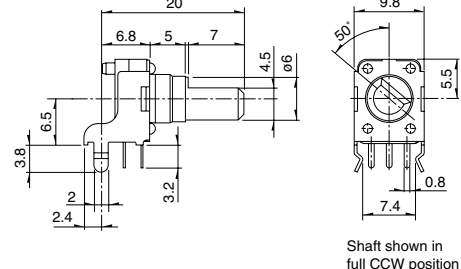
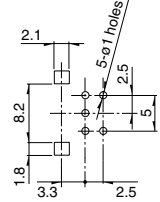

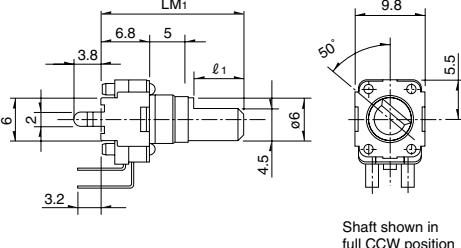
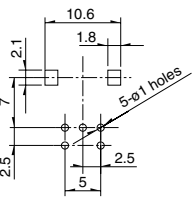
Single-unit



Dimensions

Single-shaft, dual-unit

Unit:mm

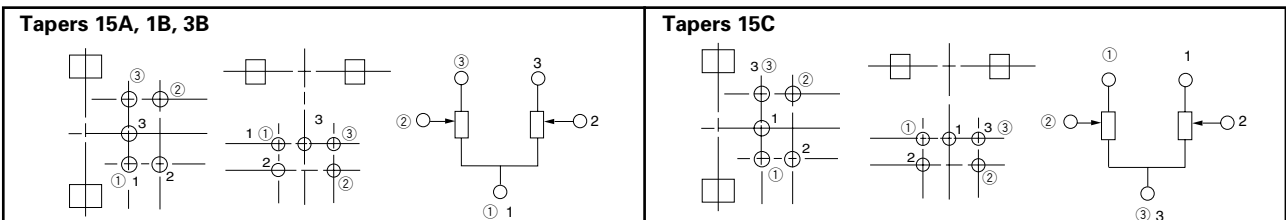
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
9		<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> </tr> </table>  <p>Shaft shown in full CCW position</p>	LM ₁	15	20	ℓ ₁	6	7			
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Rotary Potentiometers
 Slide Potentiometers

Metal Shaft
 Insulated Shaft
 Knob Operating

Terminal Layout/Circuit Diagram

Dual-unit



Product Varieties

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

Total Resistance Variety

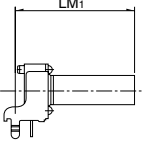
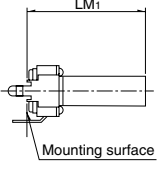
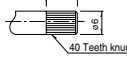
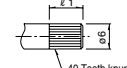
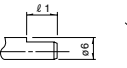
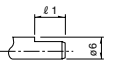
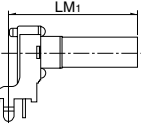
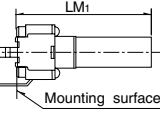
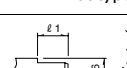
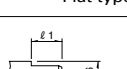
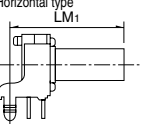
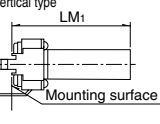
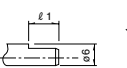
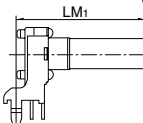
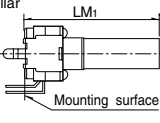
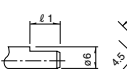
Total resistance(k Ω)	5	10	20	50	100	200
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Resistance Taper

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

Unit:mm

Number of resistor elements	Style	Shaft type		Shaft color										
		Knob variety	Detail dimensions											
Single-unit	Horizontal type  Vertical type  Mounting surface	Knob type(6)  Shaft shown at center position	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>7</td> <td>7</td> </tr> </table>	LM ₁	15	20	25	30	ℓ ₁	6	7	7	7	Black
		LM ₁	15	20	25	30								
		ℓ ₁	6	7	7	7								
		Screw-driver adjustment type  Shaft shown at center position	<table border="1"> <tr> <td>LM₁</td> <td>9.5</td> <td>15</td> <td>20</td> <td></td> </tr> <tr> <td>ℓ₁</td> <td></td> <td>6</td> <td>7</td> <td></td> </tr> </table>	LM ₁	9.5	15	20		ℓ ₁		6	7		
	LM ₁	9.5	15	20										
	ℓ ₁		6	7										
	Flat type  Shaft shown in full CCW position	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM ₁	15	20	25	30	ℓ ₁	6	7	12	12		
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With collar   Mounting surface	Flat type  Shaft shown in CCW position	<table border="1"> <tr> <td>LM₁</td> <td>20</td> <td>25</td> <td>30</td> <td></td> </tr> <tr> <td>ℓ₁</td> <td>7</td> <td>12</td> <td>12</td> <td></td> </tr> </table>	LM ₁	20	25	30		ℓ ₁	7	12	12		Black	
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ℓ ₁	7	12	12											
Horizontal type  Vertical type  Mounting surface	Flat type  Shaft shown in full CCW position	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM ₁	15	20	25	30	ℓ ₁	6	7	12	12	Black	
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Note

marked are specifications recommended by ALPS.

Refer to P.373,502 for resistance taper.

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
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	Driver
K	Knob		

* All RK09D types are only available in flat format.

Length of the shaft (LM: X 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 driver shape.

Detent

Code	Center detent
C0	Without
C1	With

Resistance taper

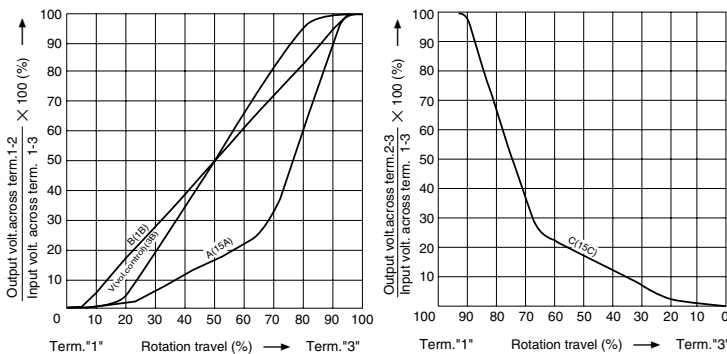
Code	Resistance taper	Code	Resistance taper
A	15A	C	15C
B	1B	V	3B

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 (kΩ)	Code	Total resistance (kΩ)
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.

List of Varieties

Items	Type		9mm Size Insulated Shaft Snap-in	11mm Size Insulated Shaft Snap-in	12mm Size Insulated Shaft Snap-in	14mm Size Insulated Shaft Snap-in	9mm Size Insulated shaft Long-life	
	Model		RK09K11 RK09D11	RK09K12	RK11K11	RK12L12	RK14K12	RK09Y11L
			Single-unit	Dual-unit	Single-unit	Dual-unit		Single-unit
Photo								
Bushing		Without		With/Without	Without	With/Without	Without	
Electrical performance	Total resistance tolerance		± 20%	± 30%	± 20%		± 30%	
	Maximum operating voltage		50V AC 20V DC	50V AC For AC only	50V AC 20V DC	50V AC For AC only		50V AC 5V DC
	Insulation resistance		100M min. 250V DC		100M min. 500V DC	100M min. 250V DC		
	Voltage proof		250V AC for 1minute		500V AC for 1minute	300V AC for 1minute		250V AC for 1minute
	Gang error		—	- 40dB to 0dB 3dB max.	—	Volume control -40dB to 0dB 3dB max. For tone control within 2dB at center		—
Mechanical performance	Strength of the actuator	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.		80N max.		30N 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					
	Resistance to soldering heat	Manual soldering	350 max. 3s max.					
		Dip Soldering	—			260 max. 5s max.	—	
Environmental performance	Cold		- 30 ± 2 for 96h				- 30 ± 2 for 240h	
	Dry heat		70 ± 2 for 96h		70 ± 2 for 240h	70 ± 2 for 96h	70 ± 2 for 240h	
	Damp heat		40 ± 2 , 90 to 95% RH for 96h				40 , 90 to 95% RH for 240h	
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Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Insulated Shaft Potentiometers Cautions386, 387