

Insulated Shaft Potentiometer

9mm Size Insulated Shaft Snap-in Type

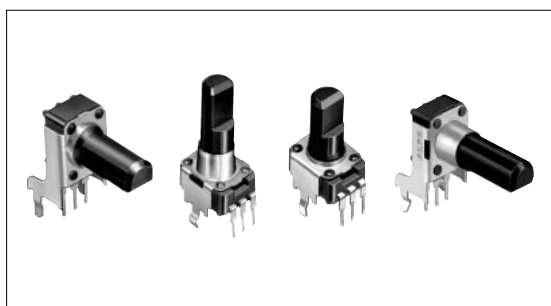
RK09K/RK09D Series



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	$\pm 20\%$
	Dual-unit	$\pm 30\%$
Maximum operating voltage	Single-unit	50V AC 20V DC
	Dual-unit	50V AC for AC only
Total rotational angle	Single-unit	RK09K: $280 \pm 5^\circ$ RK09D: $300 \pm 5^\circ$
	Dual-unit	$280 \pm 5^\circ$
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 (kΩ)	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	
						Without	5			RK09K1130AU2		
							10	15A		RK09K1130A6S		
					20		1B	RK09K1130AJ3				
					50			RK09K1130ACM				
					10			RK09K1130ACL				
					20			RK09K1130AAU				
					25		RK09K1130AH1					
					30		RK09K1130BM4					
				Knob	15	10	1B	RK09K1130A8G		7		
					20			RK09K1130A5R				
					30			RK09K1130081				
				Driver	15	5	15A	RK09K1130A70		8		
					20			RK09K1130AP5				
				Horizontal type H = 6.5mm	Flat	15	Without	10		1B	RK09K1130AV7	1
	20	RK09K1110A2S										
	5	RK09K1110AK4										
	Horizontal type H = 10mm	Knob	20	With	10	15A	RK09K1110AH8	5				
					50		RK09K1110B1V					
					50		RK09K1110A0J					
	Vertical type	300 ± 5 °	With	Flat	15	Without	10	1B		RK09K1110E9	6	
					20					15A		RK09K1110B1R
					25					50		RK09K1110B26
					30	10	1B	RK09D1130C1B		4		
					20			RK09D1130C2P				
					25			50			RK09D1130A1L	
					30			10			RK09D1130A1N	
					25	With	10	RK09D1130C3W		3		
					30			RK09D1130C3C				
					Horizontal type H = 10mm	25	Without	50		RK09D113000F		

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 (kΩ)	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	
			With		30		20			RK09K12C0A8G	12
					25		10			RK09K12C0D0U	
	Horizontal type H = 6.5mm		Without		30		50			RK09K12C0A8K	9
					15		10			RK09K12A0A2K	
			With		20		50			RK09K12A0A6R	11
										RK09K12A0B0W	

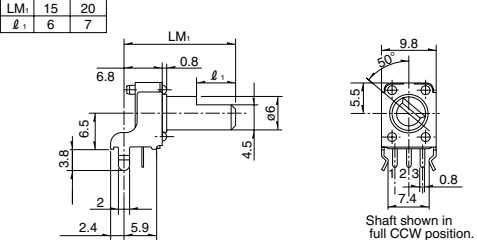
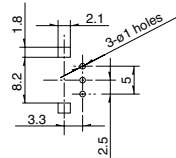
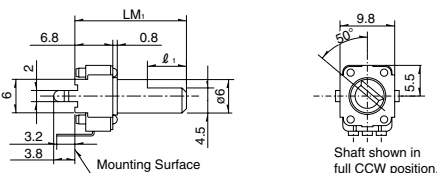
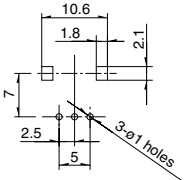
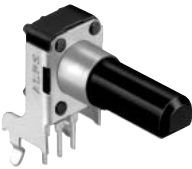
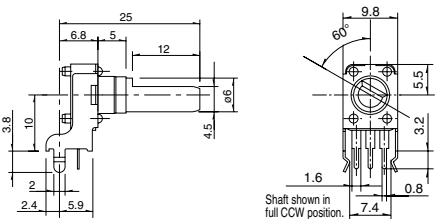
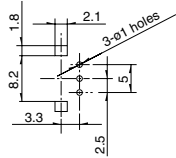
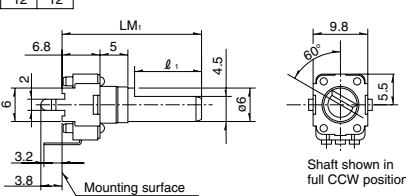
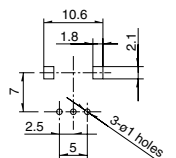
Note

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		 LM₁: 15 20 ℓ_1: 6 7 Shaft shown in full CCW position.	
2		 LM₁: 15 20 25 30 ℓ_1: 6 7 12 12 Mounting Surface Shaft shown in full CCW position.	
3		 LM₁: 20 25 30 ℓ_1: 7 12 12 Mounting surface Shaft shown in full CCW position.	
4		 LM₁: 20 25 30 ℓ_1: 7 12 12 Mounting surface Shaft shown in full CCW position.	

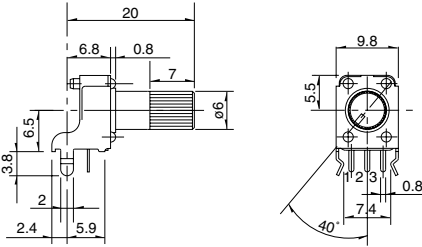
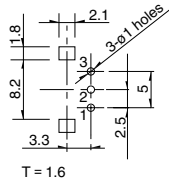
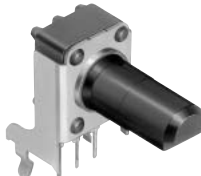
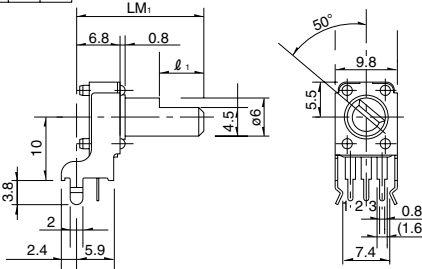
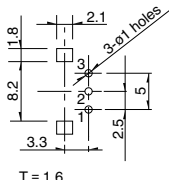
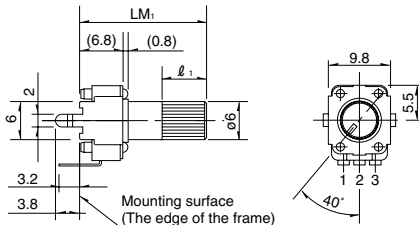
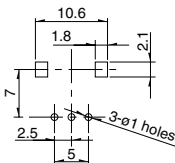
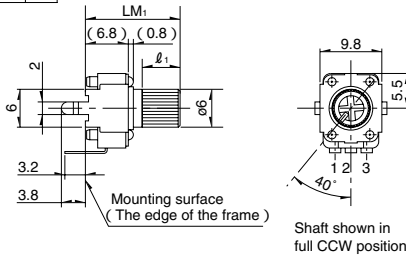
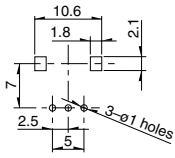
Rotary
Potentiometers
Slide
Potentiometers

Metal
Shaft
Insulated
Shaft
Knob
Operating

■ Dimensions

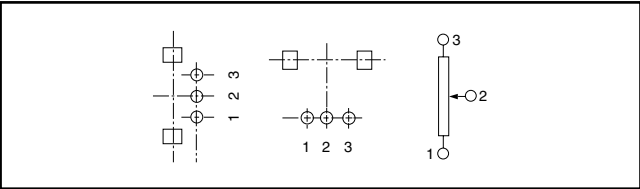
Single-shaft, single-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
5	Horizontal type RK09K111 										
6	Horizontal type RK09K111 	<table><tr><td>LM₁</td><td>15</td><td>20</td></tr><tr><td>ℓ₁</td><td>6</td><td>7</td></tr></table> 	LM ₁	15	20	ℓ ₁	6	7			
LM ₁	15	20									
ℓ ₁	6	7									
7	Vertical type RK09K113 	<table><tr><td>LM₁</td><td>15</td><td>20</td><td>30</td></tr><tr><td>ℓ₁</td><td>6</td><td>7</td><td>7</td></tr></table> 	LM ₁	15	20	30	ℓ ₁	6	7	7	
LM ₁	15	20	30								
ℓ ₁	6	7	7								
8	Vertical type RK09K113 	<table><tr><td>LM₁</td><td>15</td><td>20</td></tr><tr><td>ℓ₁</td><td>6</td><td>7</td></tr></table> 	LM ₁	15	20	ℓ ₁	6	7			
LM ₁	15	20									
ℓ ₁	6	7									

■ Terminal Layout/Circuit Diagram

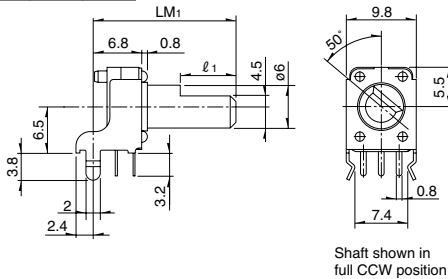
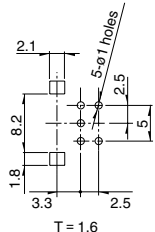
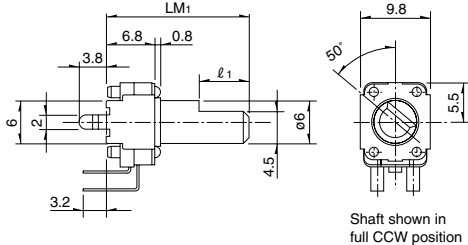
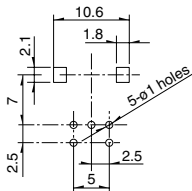
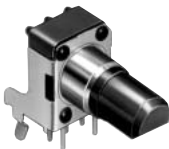
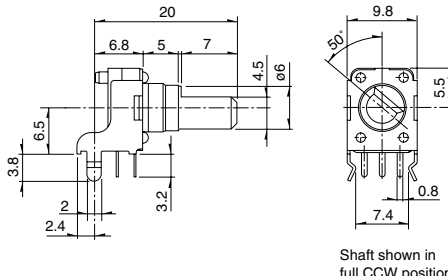
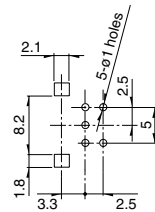
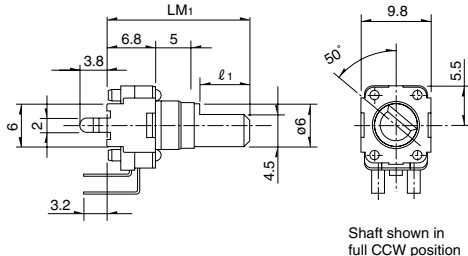
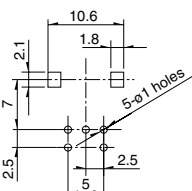
Single-unit



■ Dimensions

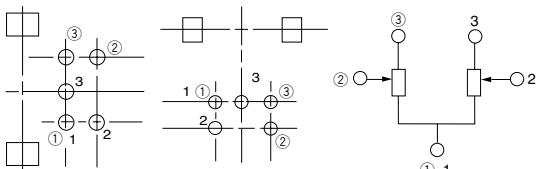
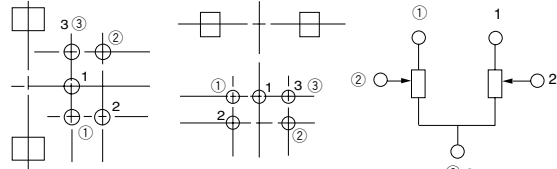
Single-shaft, dual-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
9	Horizontal type RK09K12A 	<table><tr><td>LM₁</td><td>15</td><td>20</td></tr><tr><td>ℓ₁</td><td>6</td><td>7</td></tr></table>  Shaft shown in full CCW position	LM ₁	15	20	ℓ ₁	6	7			
LM ₁	15	20									
ℓ ₁	6	7									
10	Vertical type RK09K12C 	<table><tr><td>LM₁</td><td>15</td><td>20</td><td>30</td></tr><tr><td>ℓ₁</td><td>6</td><td>7</td><td>12</td></tr></table>  Shaft shown in full CCW position	LM ₁	15	20	30	ℓ ₁	6	7	12	
LM ₁	15	20	30								
ℓ ₁	6	7	12								
11	Horizontal type with collar RK09K12A 	 Shaft shown in full CCW position									
12	Vertical type with collar RK09K12C 	<table><tr><td>LM₁</td><td>25</td><td>30</td></tr><tr><td>ℓ₁</td><td>12</td><td>12</td></tr></table>  Shaft shown in full CCW position	LM ₁	25	30	ℓ ₁	12	12			
LM ₁	25	30									
ℓ ₁	12	12									

■ Terminal Layout/Circuit Diagram

Dual-unit

Tapers 15A, 1B, 3B 	Tapers 15C 
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Product Varieties

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

Total Resistance Variety

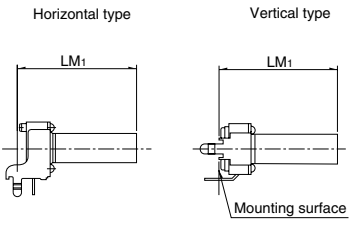
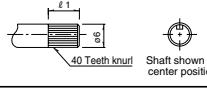
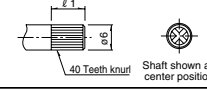
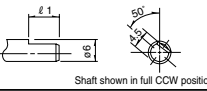
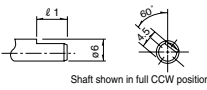
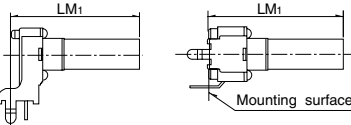
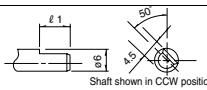
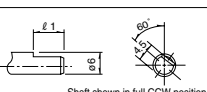
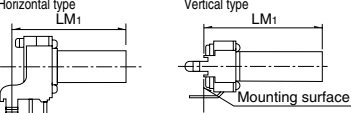
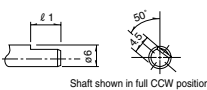
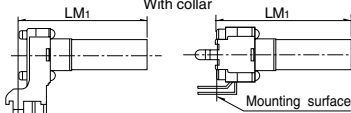
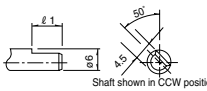
Total resistance(kΩ)	5	10	20	50	100	200
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Resistance Taper

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 	Knob type(φ 6) 	<table><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 	<table><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 	<table><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		
	LM ₁	15	20	25	30									
ℓ ₁	6	7	12	12										
Flat type 	<table><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			
LM ₁	15	20	25	30										
ℓ ₁	6	7	12	12										
With collar 	Flat type 	<table><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	
	LM ₁	20	25	30										
	ℓ ₁	7	12	12										
Flat type 	<table><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				
LM ₁	20	25	30											
ℓ ₁	7	12	12											
Dual-unit	Horizontal type Vertical type 	Flat type 	<table><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
	LM ₁	15	20	25	30									
ℓ ₁	6	7	12	12										
With collar 	Flat type 	<table><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			
LM ₁	20	25	30											
ℓ ₁	7	12	12											

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

R K 0 9 K 1 1 3 0 — **F 2 0** — **C 0** — **B 1 0 3**

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

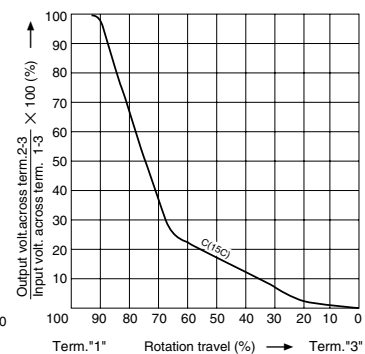
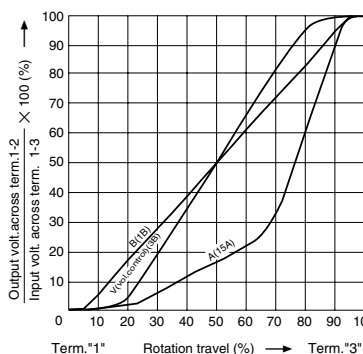
Code	Resistance taper	Code	Resistance taper
A	15A	C	15C
B	1B	V	3B

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	12mmSize 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 performanceElectrical	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		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		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