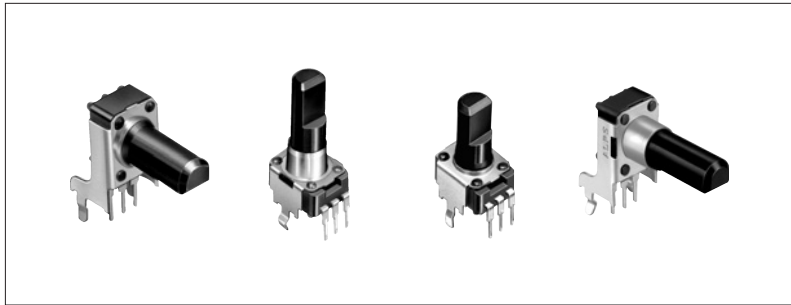


9mm Size Snap-in Insulated Shaft Potentiometer

RK09K/RK09D Series

Compact type with a width of 9.8mm is ideal for designing a high-density set.



Features

- Closed structure improved dust-proofing capacity and flux resistance.
- 9.8mm outline dimensions, ideal for high-density set design.

Applications

- Controls for audio devices, including mini component stereos, portable audio players and speaker systems
- Controls for audio mixing console and musical instruments
- Controls for LCD-TVs, game consoles, photo copiers and refrigerators (temperature control)

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	$280 \pm 5^\circ$, $300 \pm 5^\circ$ turning type is also available
	Dual-unit	$280 \pm 5^\circ$
Rotational torque		1 to 8mN·m
Operating life		5,000 cycles
Operating temperature range		-10°C to $+70^\circ\text{C}$

Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors

Metal Shaft

Insulated Shaft

Knob Operating

Recommended Products List

Number of resistor elements	Mounting direction	Products No.	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum packing unit (pcs.)	Drawing No.	
Rotary Potentiometers	Vertical type	RK09K113004U	280±5°	Without	Flat	15	With	10	1B	100	2	
		RK09K1130AU2					5					
		RK09K1130A6S					10	15A				
		RK09K1130AJ3					Without	20	1B			
		RK09K1130ACM						50				
		RK09K1130ACL						10				
		RK09K1130AAU			20	Without	5					
		RK09K1130AH1			25							
		RK09K1130BM4			30							
		RK09K1130A8G			Knob	15	10	1B	7			
		RK09K1130A5R				20						With
		RK09K1130081				30						
		RK09K1130A70			Driver	15	5	15A				8
		RK09K1130AP5				20						
		RK09K1130AV7			Flat	15	Without	10				1B
		RK09K1110A2S				20						
		RK09K1110AK4				Knob			10			
		RK09K1110AH8							5			
RK09K1110B1V	10											
RK09K1110A0J	With	50	15A	6								
RK09K11100E9		10										
RK09K1110B1R	Vertical type	300±5°	With	Flat	25	Without	10	1B	4			
RK09D1130C2P							50					
RK09D1130A1L							10					
RK09D1130A1N						With	20					
RK09D1130C3W							25					
RK09D1130C3C							30					
RK09D113000F						Horizontal type H=10mm	RK09D1110C0R			Without	Flat	25
RK09K1110B26												
Dual-unit (Not applicable to DC)	Vertical type	280±5°	Without	Flat	15	Without	10	15A	10			
							RK09K12C0A2S			50		
							RK09K12C0A8G			20		
							RK09K12C0D0U			10		
							RK09K12C0A8K			15		
	Horizontal type H=6.5mm	Without	20	With	Flat	20	50	10	15A	9		
											RK09K12A0A2K	
											RK09K12A0A6R	
	RK09K12A0B0W	With	11									

Note

Additional product specifications in response to those not included in the above recommended products are also available.

For product specifications, see P.57
For other detailed specifications, see P.75

Product Varieties

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

Total Resistance Variety

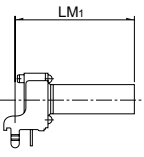
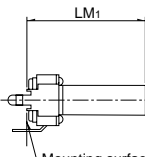
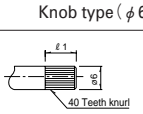
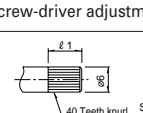
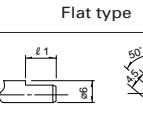
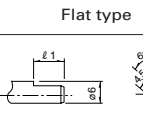
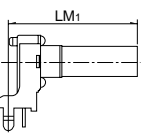
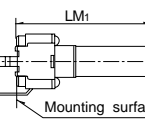
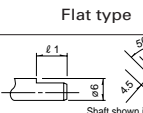
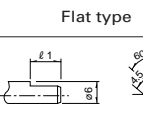
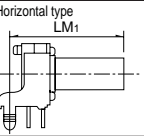
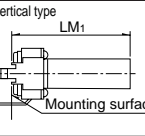
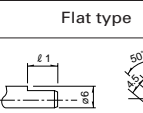
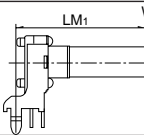
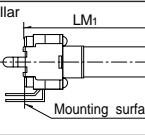
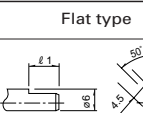
Total resistance (kΩ)	5	10	20	50	100	200
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Resistance Taper

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

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 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	 <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	 <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		
	LM ₁	15	20	25	30									
ℓ ₁	6	7	12	12										
Flat type	 <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			
LM ₁	15	20	25	30										
ℓ ₁	6	7	12	12										
With collar	 	Flat type	 <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
		LM ₁	20	25	30									
	ℓ ₁	7	12	12										
	Flat type	 <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			
LM ₁	20	25	30											
ℓ ₁	7	12	12											
Dual-unit	Horizontal type  Vertical type 	Flat type	 <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
		LM ₁	15	20	25	30								
	ℓ ₁	6	7	12	12									
	With collar	 	Flat type	 <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	
LM ₁	20	25	30											
ℓ ₁	7	12	12											

Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors

Metal Shaft

Insulated Shaft

Knob Operating

Orders Other Than Recommended Products

Specify orders for varieties that are not listed in the Recommended Product List, referring to the following 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.
 * If you wish to mount a horizontal model in a position that is not covered above, please provide us with the specific details.

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 (LM₁) (mm)

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

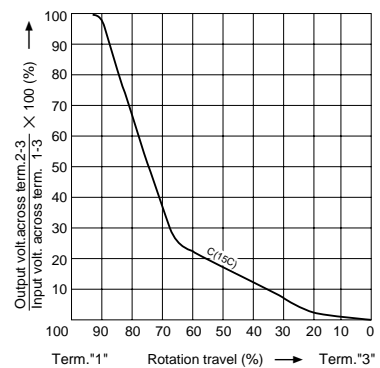
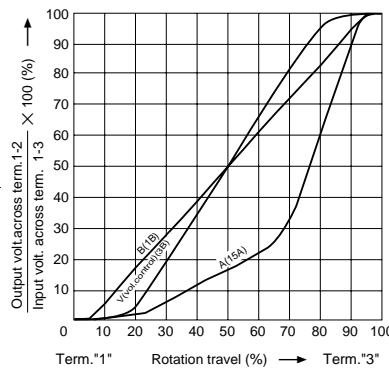
* 20, 25 and 30 are the only available RK09D types.
 * 9.5, 15 and 20 are the only available models in the driver shape.

Detent

Code	Center detent
C0	Without
C1	With

Resistance taper

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



Total resistance

Code	Total resistance (kΩ)	Code	Total resistance (kΩ)
502	5	503	50
103	10	104	100
203	20		

Notes

- Shows the specification recommended by us.
- RK09D comes with a collar.
- The recommended specification for RK09K does not include a collar. Please specify if you need a collar.

Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors

Metal Shaft

Insulated Shaft

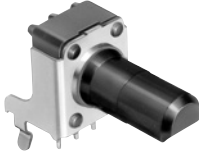
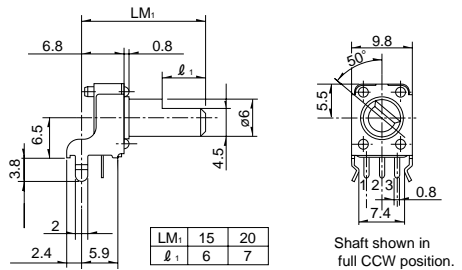
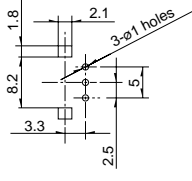

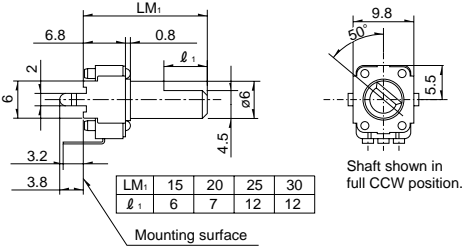
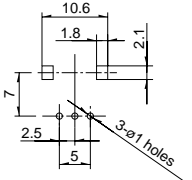
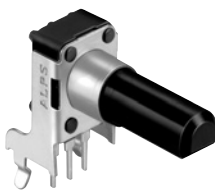
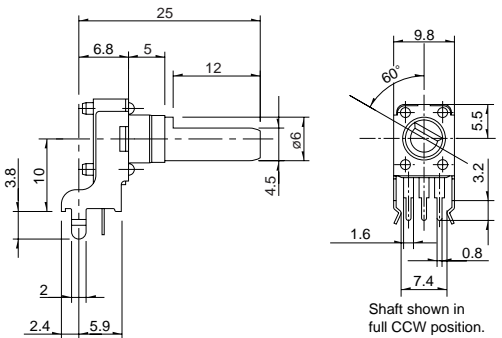
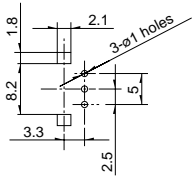

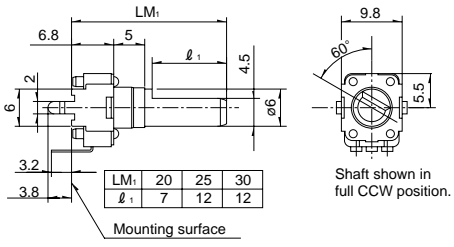
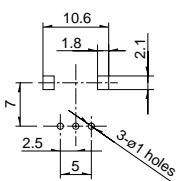
Knob Operating



Dimensions

Single-shaft, single-unit

Unit:mm

No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting side)										
1	Horizontal type RK09K111	  <table border="1" data-bbox="837 660 965 705"> <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											
2	Vertical type RK09K113	  <table border="1" data-bbox="805 985 1013 1030"> <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									
3	Horizontal type with collar RK09D111	 											
4	Vertical type with collar RK09D113	  <table border="1" data-bbox="805 1691 965 1736"> <tr> <td>LM₁</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>l₁</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM ₁	20	25	30	l ₁	7	12	12			
LM ₁	20	25	30										
l ₁	7	12	12										

Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors

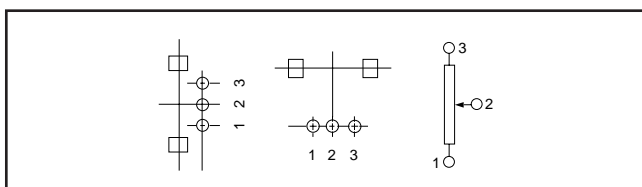
Metal Shaft

Insulated Shaft

Knob Operating

Terminal Layout/Circuit Diagram

Single-unit



Dimensions

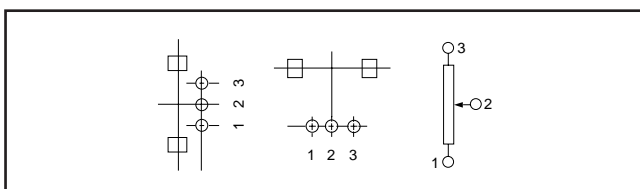
Single-shaft, single-unit

Unit:mm

No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting side)
5	Horizontal type RK09K111		
6	Horizontal type RK09K111		
7	Vertical type RK09K113		
8	Vertical type RK09K113		

Terminal Layout/Circuit Diagram

Single-unit





Dimensions

Single-shaft, dual-unit

Unit:mm

No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting side)								
9	Horizontal type RK09K12A	<p>Shaft shown in full CCW position</p> <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>	LM ₁	15	20	ℓ ₁	6	7	<p>T=1.6</p>		
LM ₁	15	20									
ℓ ₁	6	7									
10	Vertical type RK09K12C	<p>Shaft shown in full CCW position</p> <table border="1"> <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>	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	<p>Shaft shown in full CCW position</p>									
12	Vertical type with collar RK09K12C	<p>Shaft shown in full CCW position</p> <table border="1"> <tr> <td>LM₁</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>12</td> <td>12</td> </tr> </table>	LM ₁	25	30	ℓ ₁	12	12			
LM ₁	25	30									
ℓ ₁	12	12									

Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors

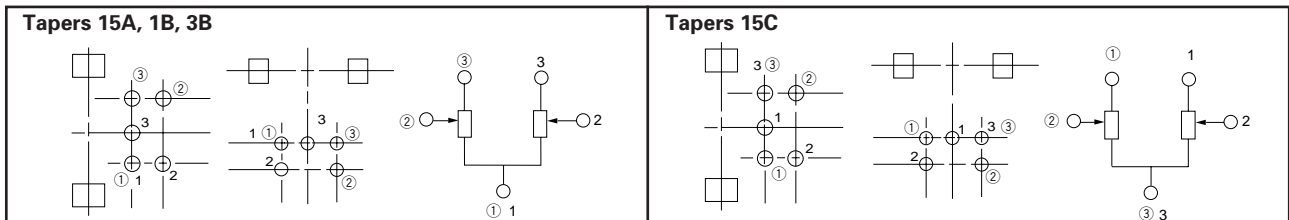
Metal Shaft

Insulated Shaft

Knob Operating

Terminal Layout/Circuit Diagram

Dual-unit



Products Varieties

Items		Type	9mm size		11mm size	12mm size 14mm size	
		Model	RK09K11□ RK09D11□	RK09K12□	RK11K11□	RK12L12□ RK14K12□	
			Single-unit	Dual-unit	Single-unit	Dual-unit	
Operating temperature range		-10°C to +70°C					
Electrical performance	Total resistance tolerance	±20%	±30%	±20%			
	Rated power	0.05W	0.03W	0.05W			
	Maximum operating voltage	50V AC 20V DC	50V AC For AC only	50V AC 20V DC	50V AC For AC only		
	Insulation resistance	100MΩ min. 250V DC		100MΩ min. 500V DC	100MΩ min. 250V DC		
	Voltage proof	1 minute 250V AC		1 minute 500V AC		1 minute 300V AC	
	Gang error	—	-40dB to 0dB within 3dB	—	Volume control -40dB to 0dB max. 3dB For tone control within 2dB at center		
Mechanical performance	Total rotational angle	280±5° RK09D11□ : 300±5°			300±5°		
	Rotational torque	1 to 8mN·m			3 to 20mN·m		
	Strength of the operating section	Stopper strength	0.3N·m		Without bushing 0.5N·m With bushing 0.6N·m	14mm 0.6N·m 12mm 0.5N·m	
		Push-pull strength	50N 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					
	Solder heat resistance	Manual soldering	350°C max. 3s max.				
Endurance	Operating life	5,000 cycles			15,000 cycles		
Environmental test	Cold	-10°C for 96h					
	Long-term heat resistance	+70°C for 96h					
	Moisture resistance	+40±2°C, 90 to 95%RH for 96h					

Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors

Metal Shaft

Insulated Shaft

Knob Operating