

16mm Size Metal Shaft Potentiometer

RK163 Series

Versatile product lineups applicable for various controls.

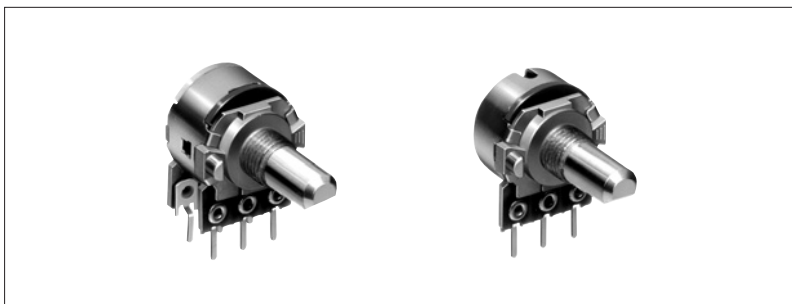
Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors



Metal Shaft

Insulated Shaft

Knob Operating

Applications

- Controls for sound devices, including mini component stereos and stereo systems
- Controls for refrigerators, fan heaters, wireless radios and measuring appliances

Typical Specifications

Items	Specifications
Total resistance tolerance	±20%
Maximum operating voltage	150V AC
Total rotational angle	300±5°
Rotational torque	2 to 25 mN·m
Operating life	15,000 cycles
Operating temperature range	-10°C to +70°C

Recommended Products List

Number of resistor elements	Mounting direction	Products No.	Shaft type	Terminal style	Length of the shaft (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum packing unit (pcs.)	Drawing No.
Single-unit	Horizontal type	RK1631110TBK	Flat	For PC board	15	Without	10	1B	100	1
		RK1631110TT3						15A		
		RK1631110U1Q	Knurled	Lead	20		20	3		
		RK1631110TNP					10			4
Dual-unit for tone		RK1631210ATD	Flat	For PC board	20	With	20	1B		5
		RK16312101B8								
Dual-unit for vol.		RK1631210AX9	Knurled	For PC board	15	Without	10	15A		6
		RK16312A0B85								
	RK16312A0BKH	Knurled	25	10	15A		5			
	RK16312A0BKR							15	6	

Note

Additional product specifications in response to those not included in the above recommended products are also available. For inquiries, contact our sales department.

For product specifications, see P.33
For other detailed specifications, see P.48, 49

Product Specifications

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

Product Specifications and Applications

Type	Model	Applications	Detent variety
Single-shaft, Single-unit	RK16311	General	Center
Single-shaft, dual-unit	RK16312	General or Volume control	11 21 31 41

Total Resistance Variety

Total resistance (kΩ)	5	10	20	50	100	200

Resistance Taper

Resistance taper	15A	1B	3B	15C

Dimensions of Shaft

1) 18 teeth knurl

Unit : mm

Die-casting shaft

L ₁	L _B	l ₁
15	5	8
20	5	12
25	7	12
30	7	12

Shaft shown in full CCW position

● The serration angle shall be as shown.

2) Flat type

Unit : mm

L ₁	L _B	l ₁
15	5	7
20	7	12
25	7	12
30	7	12

Shaft shown in full CCW position

3) Slotted type

Unit : mm

L ₁	L _B
15	7
20	7
25	7
30	7

Shaft shown in full CCW position

For resistance taper, see P.34

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
111	Single-unit
121	Dual-unit for tone
12A	Dual-unit for vol.

Shaft type

Code	Shaft type
F	Flat
S	Slotted
K	Knurled

Length of the shaft (L1) (mm)

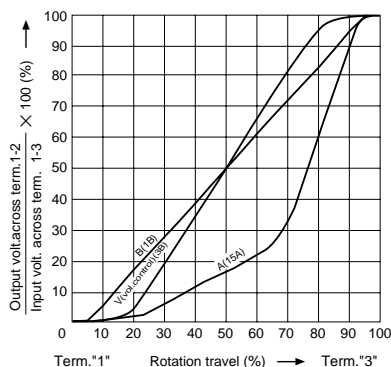
Code	Length of the shaft	Code	Length of the shaft
15	15	25	25
20	20	30	30

Detent

Code	Detent	Code	Detent
C0	Without	31	31
C1	Center	41	41
21	21		

Resistance taper

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



Total resistance

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

Terminal style

Code	Terminal style
P	Printed terminal
L	Lead terminal

Note

Shows the specification recommended by us.

Dimensions

Unit : mm

No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting side)									
1	Single-shaft, single-unit RK163111	<table border="1" data-bbox="590 515 726 593"> <tr> <td>L₁</td> <td>15</td> <td>20</td> </tr> <tr> <td>L_B</td> <td>5</td> <td>7</td> </tr> <tr> <td>l₁</td> <td>7</td> <td>12</td> </tr> </table> <p>Shaft shown in full CCW position</p>	L ₁	15	20	L _B	5	7	l ₁	7	12	
L ₁	15	20										
L _B	5	7										
l ₁	7	12										
2	Single-shaft, single-unit RK163111	<p>Shaft shown in full CCW position</p>										
3	Single-shaft, single-unit RK163111	<p>Shaft slot is optional angle.</p>										
4	Single-shaft, single-unit RK163111	<p>Shaft slot is optional angle.</p>										
5	Single-shaft, dual-unit RK163121 (For tone) RK16312A (For volume)	<table border="1" data-bbox="590 1713 726 1747"> <tr> <td>L₁</td> <td>20</td> <td>25</td> </tr> </table> <p>Shaft shown in full CCW position</p>	L ₁	20	25							
L ₁	20	25										
6	Single-shaft, dual-unit RK163121 (For tone) RK16312A (For volume)	<p>Shaft slot is optional angle.</p>										

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Products Specifications

Items		Model	RK09L	RK097 RK098	RK117	RK16
Operating temperature range		-10°C to +70°C				
Electrical performance	Total resistance tolerance	±20%				
	Rated power	0.05W				
	Maximum operating voltage	50V AC				150V AC
	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. $50k\Omega \leq R < 100k\Omega$ 90dB min. $100k\Omega \leq R$ 100dB min.				
	Insulation resistance	100MΩ min. 250V DC				100MΩ min. 500V DC
	Voltage proof	1 minute 300V AC				1 minute 500V AC
Mechanical performance	Total rotational angle	RK09L $300 \pm 5^\circ$ RK097 $300 \pm 5^\circ$ (Axis movement type is $300 \pm 10^\circ$) RK098 $300 \pm 5^\circ$			$300 \pm 10^\circ$	$300 \pm 5^\circ$
	Rotational torque	2 to 25mN·m				
	Stopper strength	0.5N·m (For shaft movable type, 0.4N·m)				0.9N·m (For dual-shaft type, 0.6N·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				
	Solderability	230±5°C, 3±0.5s				
	Solder heat resistance	Manual soldering	350°C or less and within 3 seconds			
Dip soldering (Dip available products)		260±5°C 4±1s				
Endurance	Operating life	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				

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Attached Parts

These parts are attached to the following products.

Unit : mm

Applicable products	Bearing screw diameter	Hexagonal nut	Flat washer
RK09L RK168 RK097	M9		
RK271	M8		
RK097 RK098 RK163	M7		
RK097 RK098	M6		

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