

# 27mm Size Metal Shaft Potentiometer

RK27 Series

High-grade potentiometer featuring good control feel and superior features.

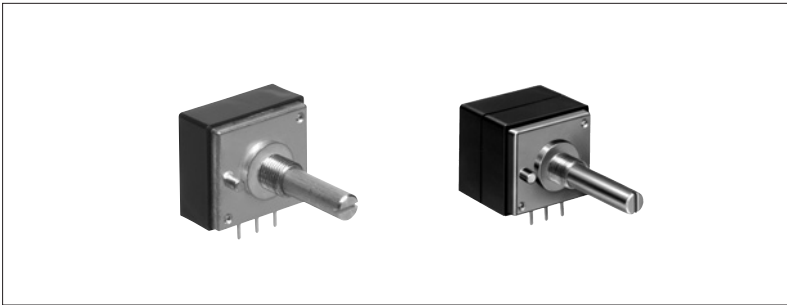
Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors



Metal Shaft

Insulated Shaft

Knob Operating

## Features

- These highgrade potentiometers offer comfortable operation and possess high, precise features (gang error, resistance taper, etc.), ideal for audio applications.

## Applications

- Level controls for high grade audio sets
- Controls for audio mixing console

## Typical Specifications

Items	Specifications
Total resistance tolerance	$\pm 20\%$
Maximum operating voltage	30V AC
Total rotational angle	$300 \pm 3^\circ$
Rotational torque	5 to 35 mN·m
Operating life	15,000 cycles
Operating temperature range	$-10^\circ\text{C}$ to $+70^\circ\text{C}$

## Recommended Products List

Number of resistor elements	Mounting direction	Products No.	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k $\Omega$ )	Resistance taper	Minimum packing unit (pcs.)	Drawing No.						
Single-unit	Horizontal type	RK2711120026	Slotted	25	31	100	15A	100	1						
		RK271111001T			Without										
Dual-unit		RK27112A00AK		20	Without				100	15A	100	2			
		RK27112A00CC	25												
		RK27112A0A16	20	Flat								100	15A	100	3
		RK27112A00B9	25												

## 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.39  
For other detailed specifications, see P.48, 49

## Product Varieties

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

### Products Specification

Type	Model	Mounting height (mm)	Detent variety	Gang error
Single-shaft, single-unit	RK27111	12.5	Center 21 31 41	—60dB to 0dB within 3dB —80dB to —60dB within 5dB possible depending on total resistance and taper.
Single-shaft, dual-unit	RK27112			
Single-shaft, quad-unit	RK27114			

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### Total Resistance Variety

Total resistance (kΩ)	10	20	50	100	250

### Resistance Taper

Resistance taper	15A	3B

Metal Shaft

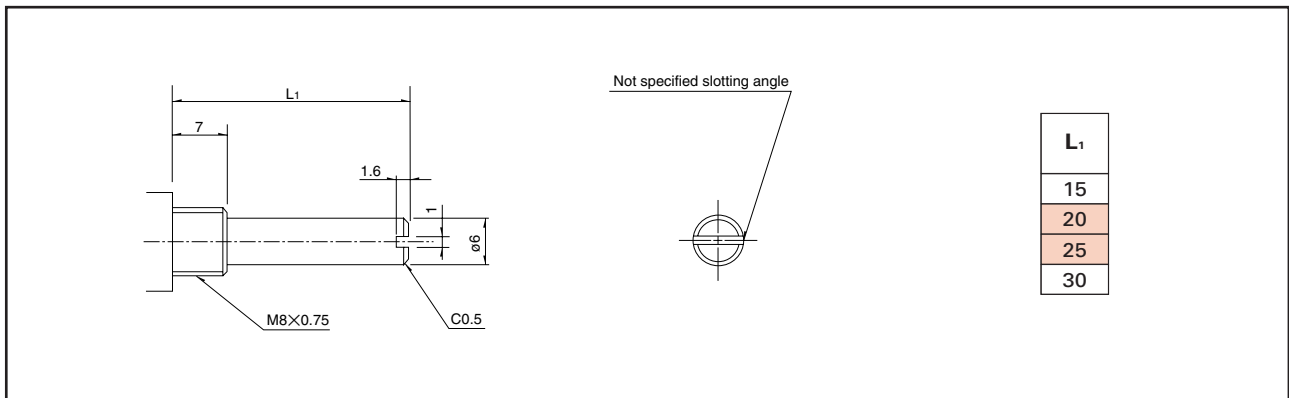
Insulated Shaft

Knob Operating

### Dimensions of Shaft

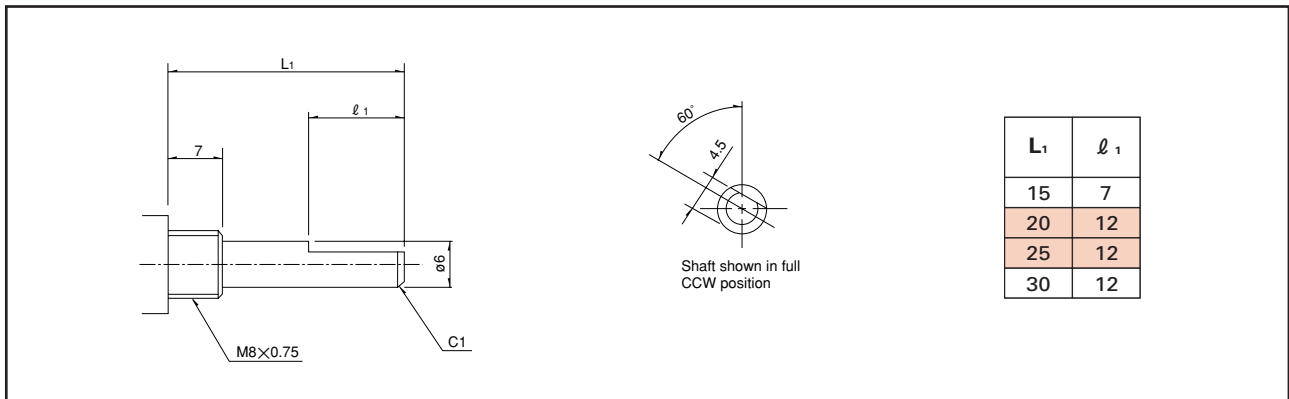
#### 1 Slotted type

Unit:mm



#### 2 Flat type

Unit:mm



For resistance taper, see P.40, 224  
For attached parts, see P.50

## 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

**R K 2 7 1 1 2 A - S 2 5 - C 0 - A 1 0 4**

#### Model type

Code	Model type
111	Single unit
12A	Dual unit for vol.

#### Shaft type

Code	Shaft type
F	Flat
S	Slotted

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

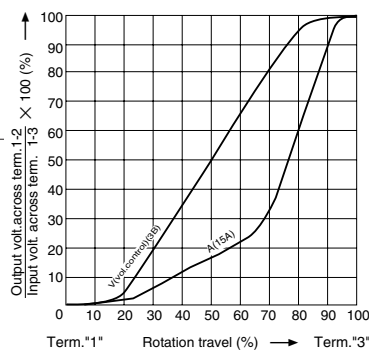
Code	Length of the shaft	Code	Length of the shaft
15	15	25	25
20	20	30	30

#### Detent

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

#### Resistance taper

Code	Resistance taper
A	15A
V	3B



#### Total resistance

Code	Total resistance (kΩ)	Code	Total resistance (kΩ)
502	5	503	50
103	10	104	100
203	20	254	250

### Note

Shows the specification recommended by us.

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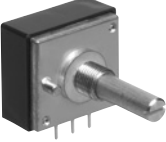
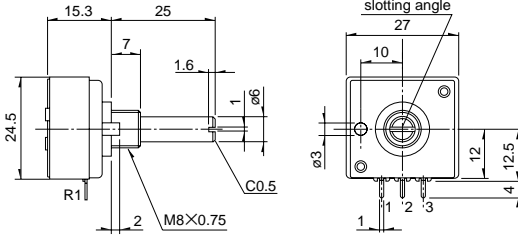
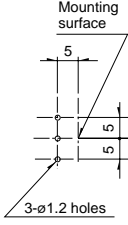
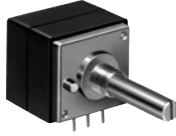
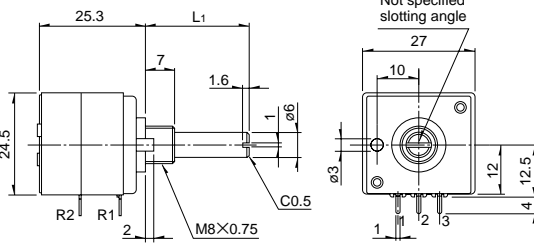
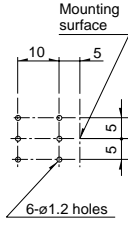
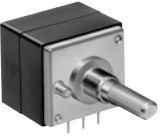
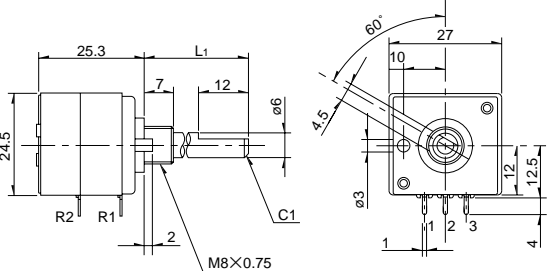
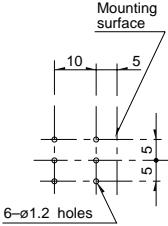
Metal Shaft

Insulated Shaft

Knob Operating

■ Dimensions

Unit:mm

No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting side)
1	<p>Single-shaft, single-unit RK27111</p> 		
2	<p>Single-shaft, dual-unit RK27112</p> 	 <p style="text-align: center;">L<sub>1</sub> 20 25</p>	
3	<p>Single-shaft, dual-unit RK27112</p> 	 <p style="text-align: center;">L<sub>1</sub> 20 25</p>	

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## Products Specifications

Items		Model		RK20B	RK25T	RK271	RK501	
<b>Operating temperature range</b>		-10°C to +105°C		-10°C to +60°C		-10°C to +70°C		
<b>Electrical performance</b>	<b>Total resistance tolerance</b>	±20%						
	<b>Rated power</b>	0.06W		0.05W		0.1W		
	<b>Maximum operating voltage</b>	20V DC		5V DC		30V AC		150V AC
	<b>Residual resistance</b>	_____		_____		$R \leq 10k\Omega$ 20Ω max. $10k\Omega < R \leq 50k\Omega$ 30Ω max. $50k\Omega < R$ 0.1% or less of nominal total resistance		_____
	<b>Maximum attenuation (Volume control)</b>	_____		_____		$5k\Omega \leq R < 10k\Omega$ 70dB min. $10k\Omega \leq R < 50k\Omega$ 80dB min. $50k\Omega \leq R < 100k\Omega$ 90dB min. $100k\Omega \leq R$ 100dB min.		120dB min.
	<b>Insulation resistance</b>	100MΩ min. 250V DC			100MΩ min. 500V DC			
	<b>Voltage proof</b>	1 minute 300V AC			1 minute 500V AC			
<b>Mechanical performance</b>	<b>Total rotational angle</b>	360°		300±5°		300±3° Motor-driven 300±5°		300±3°
	<b>Rotational torque (mN·m)</b>	20 to 80		0.5 to 7.5		5 to 35 Motor-driven 15 to 45		13 to 43
	<b>Stopper strength (N·m)</b>	—		0.5		0.9		1.5
	<b>Push-pull strength</b>	100N max.					150N max.	
	<b>Vibration</b>	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						
	<b>Solder heat resistance</b>	<b>Manual soldering</b>	350°C max. 3s max.					
<b>Dip soldering (Dip available products)</b>		260±5°C 4±1s						
<b>Endurance</b>	<b>Operating life</b>	15,000 cycles		100,000 cycles		15,000 cycles		
<b>Environmental test</b>	<b>Cold</b>	-10°C for 96h						
	<b>Long-term heat resistance</b>	+105°C for 96h		+70°C for 96h				
	<b>Moisture resistance</b>	+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
<b>RK09L</b> <b>RK168</b> <b>RK097</b>	M9		
<b>RK271</b>	M8		
<b>RK097</b> <b>RK098</b> <b>RK163</b>	M7		
<b>RK097</b> <b>RK098</b>	M6		

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