

Metal Shaft Potentiometer 50mm Size Metal Shaft High-quality-audio Type

RK50 Series



High sound quality, good response and high grade for high end audio devices.



Features

- Employment of low-distortion carbon ink provides high fidelity sound reproduction.
- Gold plated multi contact point wire brushes reduce distortion in sound reproduction.
- Employment of low resistance ink provides a gang error of ± 1 dB for the range between -100 and 0 dB.
- Solid brass lathe-carved case improves channel separation performance.
- Employment of mirror surface-treated resistor materials reduces slide noise.
- Unique torque mechanism adds a good operational feel to audio equipment.

Applications

- For volume control in amplifiers and high quality audio equipment

Rotary Potentiometers

Slide Potentiometers

Multi Control Devices

Sensors

Metal Shaft

Insulated Shaft

Hollow Type

Knob Operating

Typical Specifications

Items	Specifications
Total resistance tolerance	$\pm 20\%$
Maximum operating voltage	150V AC
Total rotational angle	$300 \pm 3^\circ$
Rotational torque	13 to 43mN·m
Operating life	15,000cycles
Operating temperature range	-10°C to +70°C

Recommended Products List


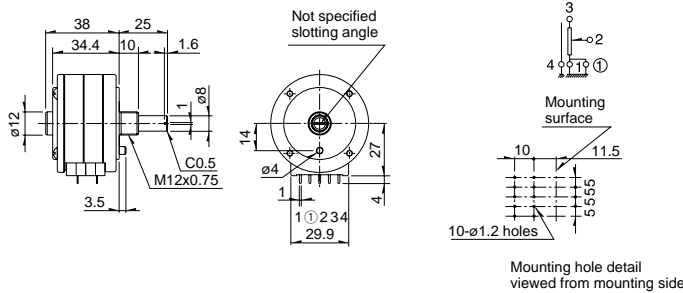

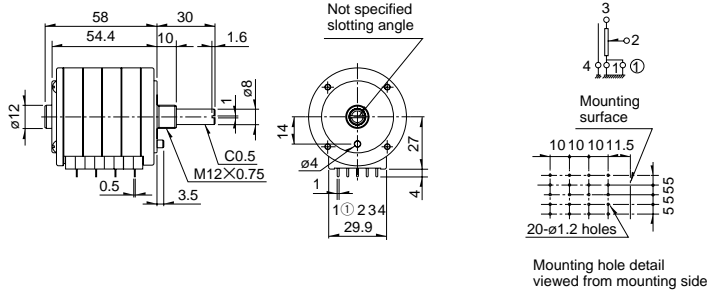
Number of resistor elements	Mounting direction	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k Ω)	Resistance taper	Minimum packing unit (pcs.)	Products No.	Drawing No.
Dual-unit	Horizontal type	Slotted	25	Without	100	15A	1	RK50112A0004	1
Quad-unit			30		50			RK50114A0001	2

Dimensions

Unit:mm

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No.	Photo	Style
1	<p>Single-shaft, dual-unit RK50112</p> 	 <p>Not specified slotting angle</p> <p>Circuit diagram</p> <p>Mounting surface</p> <p>Mounting hole detail viewed from mounting side</p>
2	<p>Single-shaft, quad.-unit RK50114</p> 	 <p>Not specified slotting angle</p> <p>Circuit diagram</p> <p>Mounting surface</p> <p>Mounting hole detail viewed from mounting side</p>

Product Varieties

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

Total Resistance Variety

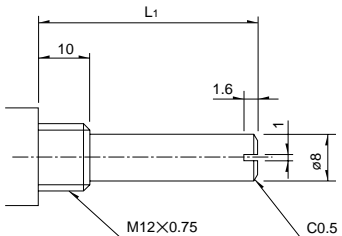
Total resistance (kΩ)	10	20	50	100	250
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Resistance Taper

Resistance taper	15A	3B
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Dimensions of Shaft
Slotted type

Unit:mm

 <p>Not specified slotting angle</p>	<table border="1"> <tr><td>L₁</td></tr> <tr><td style="text-align: center;">20</td></tr> <tr><td style="text-align: center; background-color: #d3d3d3;">25</td></tr> <tr><td style="text-align: center;">30</td></tr> <tr><td style="text-align: center;">40</td></tr> </table>	L ₁	20	25	30	40
L ₁						
20						
25						
30						
40						

Note
 marked are specifications recommended by ALPS.

Refer to P.53 for product specifications.
 Refer to P.211 for resistance taper.

Product Specifications

Model		RK203	RK20B	RK271	RK501	
Items						
Operating temperature range		-30°C to +80°C	-10°C to +105°C	-10°C to +70°C		
Electrical performance	Total resistance tolerance	±20%				
	Rated power	0.05W	0.06W	0.05W	0.1W	
	Maximum operating voltage	50V AC 30V DC	20V DC	30V AC	150V AC	
	Residual resistance	_____		R ≤ 10kΩ 20Ω max. 10kΩ < R ≤ 50kΩ 30Ω max. 50kΩ < R 0.1% or less of nominal total resistance	_____	
	Maximum attenuation (Volume control)	_____		5kΩ ≤ R < 10kΩ 70dB min. 10kΩ ≤ R < 50kΩ 80dB min. 50kΩ ≤ R < 100kΩ 90dB min. 100kΩ ≤ R 100dB min.	120dB min.	
	Insulation resistance	100MΩ min. 250V DC		100MΩ min. 500V DC		
	Voltage proof	300V AC (for 1minute)		500V AC (for 1minute)		
Mechanical performance	Total rotational angle	240° max.	360°	300±3° Motor-driven 300±5°	300±3°	
	Rotational torque (mN·m)	Shall be in accordance with individual specifications.	20 to 80	8 to 35 Motor-driven 15 to 45	13 to 43	
	Stopper strength (N·m)	0.5	_____	0.9	1.5	
	Push-pull strength	100N max.			150N 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	300°C max. 3s max.	350°C max., 3s max.	350°C max. 5s max. Motor terminal: 350°C max. 2s max.	350±10°C, 5 ^{±1} s
		Dip soldering	260±5°C, 5±1s	260°C max., 5s max.	_____	260±5°C, 5±1s
Reflow soldering		_____				
Endurance	Operating life	30,000cycles	15,000cycles			
Environmental test	Cold	-40±2°C for 192h	-30±3°C for 96h	-30±3°C for 96h	-20±3°C for 240h	
	Long-term heat resistance	+85±2°C for 192h	+105±2°C for 96h	+70±2°C for 96h	+70±2°C for 240h	
	Moisture resistance	+60±3°C, 90 to 95%RH for 240h	+60±2°C, 90 to 95%RH for 240h	+40±2°C, 90 to 95%RH for 96h	+60±2°C, 90 to 95%RH for 240h	

Note

The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.

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