

# 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  $\pm 1$ 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	$-10^\circ\text{C}$ to $+70^\circ\text{C}$

## Recommended Products List

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k $\Omega$ )	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



## Product Specifications

Model		RK203	RK20B	RK271	RK501	
Items						
<b>Operating temperature range</b>		-30°C to +80°C	-10°C to +105°C	-10°C to +70°C		
<b>Electrical performance</b>	<b>Total resistance tolerance</b>	±20%				
	<b>Rated power</b>	0.05W	0.06W	0.05W	0.1W	
	<b>Maximum operating voltage</b>	50V AC 30V DC	20V DC	30V AC	150V AC	
	<b>Residual resistance</b>	_____		R ≤ 10kΩ 20Ω max. 10kΩ < R ≤ 50kΩ 30Ω max. 50kΩ < R 0.1% or less of nominal total resistance	_____	
	<b>Maximum attenuation (Volume control)</b>	_____		5kΩ ≤ R < 10kΩ 70dB min. 10kΩ ≤ R < 50kΩ 80dB min. 50kΩ ≤ R < 100kΩ 90dB min. 100kΩ ≤ R 100dB min.	120dB min.	
	<b>Insulation resistance</b>	100MΩ min. 250V DC		100MΩ min. 500V DC		
<b>Voltage proof</b>		300V AC (for 1minute)		500V AC (for 1minute)		
<b>Mechanical performance</b>	<b>Total rotational angle</b>	240° max.	360°	300±3° Motor-driven 300±5°	300±3°	
	<b>Rotational torque (mN·m)</b>	Shall be in accordance with individual specifications.	20 to 80	8 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>	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 <sup>+1</sup> / <sub>0</sub> s
<b>Dip soldering</b>		260±5°C, 5±1s	260°C max., 5s max.	_____	260±5°C, 5±1s	
<b>Reflow soldering</b>		_____				
<b>Endurance</b>	<b>Operating life</b>	30,000cycles	15,000cycles			
<b>Environmental test</b>	<b>Cold</b>	-40±2°C for 192h	-30±3°C for 96h	-30±3°C for 96h	-20±3°C for 240h	
	<b>Long-term heat resistance</b>	+85±2°C for 192h	+105±2°C for 96h	+70±2°C for 96h	+70±2°C for 240h	
	<b>Moisture resistance</b>	+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	

Rotary Potentiometers

Slide Potentiometers

Multi Control Devices

Sensors

Metal Shaft

Insulated Shaft

Hollow Type

Knob Operating

### Note

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