

Metal Shaft Potentiometer Rotary Motor-driven Type

RK168 Series



Remote controllable and available in a wide variety of products.

Rotary Potentiometers

Slide Potentiometers



Typical Specifications

Items	Specifications
Total resistance tolerance	±20%
Maximum operating voltage	50V AC
Total rotational angle	300±5°
Rotational torque	10 to 40mN·m
Operating life	15,000cycles
Motor voltage	4 to 6V DC (Standard : 4.5V DC)
Potentiometer rotational speed (sec/300°)	12±3 (4.5V DC)
Maximum operating current	At rotation : 100mA / At end slip : 150mA
Operating temperature range	-10°C to +70°C

Metal Shaft

Insulated Shaft

Knob Operating

Product Line

Type	Model	Number of resistor elements	Shaft type	Length of the shaft (mm)	Total resistance (kΩ)	Resistance taper	Motor print terminal	Minimum order unit (pcs.)	Products No.	Drawing No.
16mm size	RK1681□MG0	Dual-unit	Flat	25	100	3B	With	200	RK16812MG099	1
		15A				Without	RK16814MGA0K		2	

Packing Specifications

Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case/export packing	
200	200	389×563×195

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1	<p>16mm size Single-shaft, dual-unit RK16812MG</p>		
2	<p>16mm size Single-shaft, quad.-unit RK16814MG</p>		

Notes

Please place purchase orders per minimum order unit N (integer).

Refer to P.376 for product varieties.
Refer to P.376, 456 for resistance taper.
Refer to P.377 for attached parts.

Product Varieties

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

Basic Motor Specifications

Type	Number of unit	Model	Motor type		Motor voltage	Potentiometer rotational speed	Max. operating current
			Sealed case	Motor printed terminal			
16mm size	Single-shaft, dual-unit	RK16812MG	Available	Available	4 to 6V DC (Standard:4.5)	12±3sec/300° (4.5V DC)	At rotation 100mA At end slip 150mA (4.5V DC)
	Single-shaft, quad.-unit	RK16814MG					
	Single-shaft, 5-ganged-unit	RK16815MG					
	Single-shaft, 6-ganged-unit	RK16816MG					

Total Resistance Variety

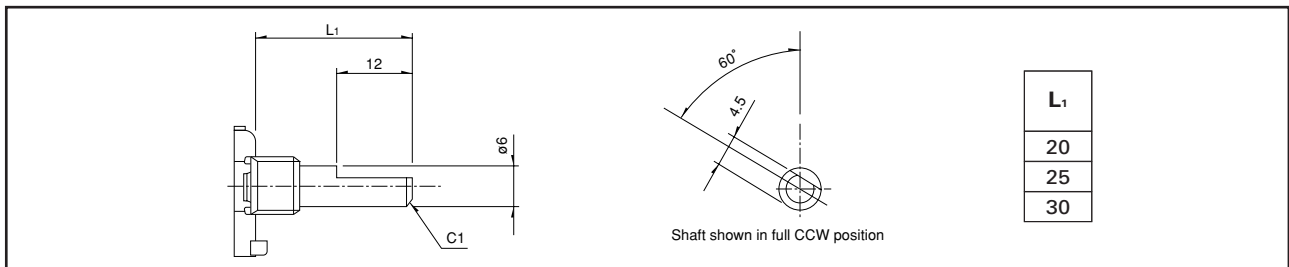
Total resistance (kΩ)	10	20	50	100
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Resistance Taper

Resistance taper	15A	3B
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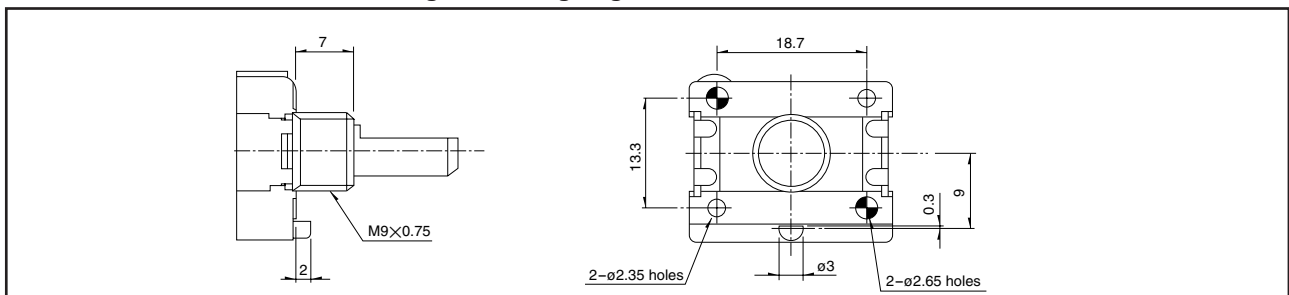
Shaft Variety

Unit:mm



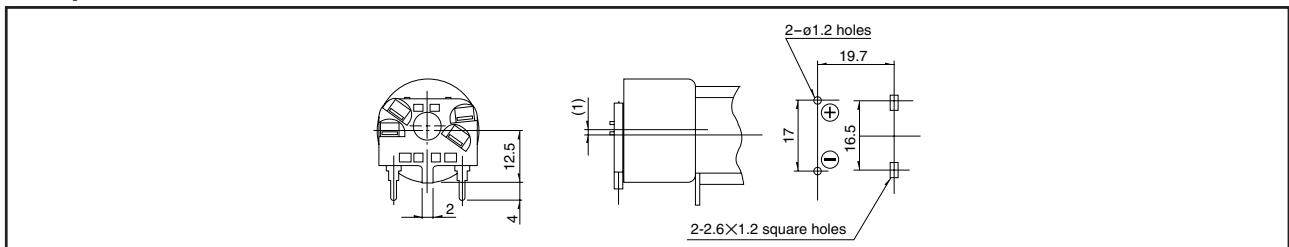
Standard Dimensions of Bushing and Fixing Lug

Unit:mm



Style of Printed Terminal for Motor

Unit:mm



Note

marked are specifications recommended by ALPS.

Rotary Potentiometers

Slide Potentiometers





Metal Shaft

Insulated Shaft

Knob Operating

Refer to **P.456** for resistance taper.
Refer to **P.377** for attached parts.

List of Varieties

Type	16mm size metal shaft	20mm size metal shaft	27mm size metal shaft	Rotary motor-driven	
Number of drive shafts	Single-shaft				
Model	RK1631□1 RK1631□A	RK203 / EC20A	RK2711	RK1681□ MG0	
Photo					
Fixing method of bushing	Bushing screw clamp	The bushing can be fastened by use of screws	Bushing screw clamp	The bushing can be fastened by use of screws	
Terminal mounting	Horizontal type	Vertical type	Horizontal type		
Attached switch	Without				
Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max.	—————	-60dB to 0dB 3dB max.	-40dB to 0dB 3dB max.	
Solder heat resistance	Manual soldering	350°C max. 5s max.	300°C max. 3s max.	350°C max. 5s max.	
	Dip soldering	—————	260±5°C, 5±1s	—————	
	Reflow soldering	—————			
Operating temperature range	-10°C to +70°C	EC20A : -30°C to +85°C RK203 : -40°C to +85°C	-10°C to +70°C		
Electrical performance	Rated power	0.05W			0.05W
	Residual resistance	$R \leq 10k\Omega$ 20Ω max. $10k\Omega < R < 50k\Omega$ 30Ω max. $50k\Omega \leq R$ Nominal total resistance of 0.1% or less	—————	$R \leq 10k\Omega$ 20Ω max. $10k\Omega < R < 50k\Omega$ 30Ω max. $50k\Omega \leq R$ 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.	—————	$5k\Omega \leq R < 10k\Omega$ 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. 500V DC	100MΩ min. 250V DC	100MΩ min. 500V DC	100MΩ min. 250V DC
	Voltage proof	500V AC for 1minute	300V AC for 1minute	500V AC for 1minute	300V AC for 1minute
Mechanical performance	Stopper strength(N·m)	0.9	0.5	0.9	
	Push-pull strength	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			
Environmental performance	Cold	-20±2 for 96h	-40±3°C for 192h	-20±3°C for 96h	-20±2 for 16h
	Dry heat	70±2°C for 96h	85±3°C for 192h	70±2°C for 96h	70±2°C for 96h
	Damp heat	40±2°C, 90 to 95%RH for 96h	60±3°C, 90 to 95%RH for 240h	40±2°C, 90 to 95%RH for 96h	40±2°C, 90 to 95%RH for 96h
Page	365	369	371	375	

Rotary Potentiometers
Slide Potentiometers

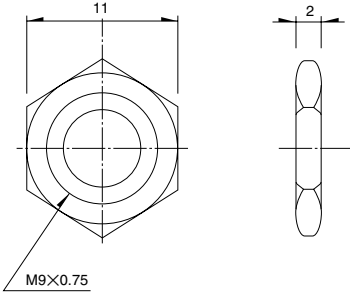
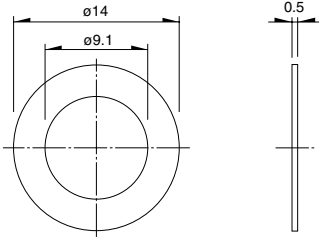
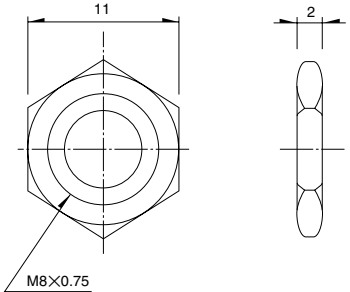
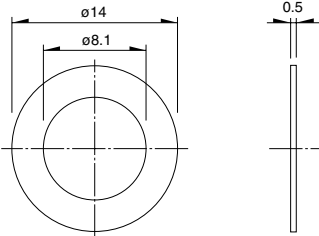
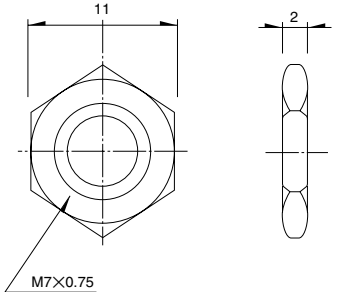
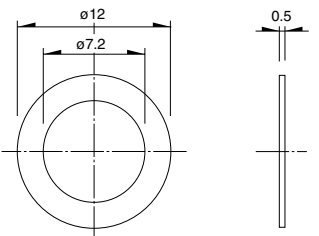
Metal Shaft
Insulated Shaft
Knob Operating

- Metal Shaft Potentiometers Attached Parts377
- Metal Shaft Potentiometers Cautions378, 379

Attached Parts

The following parts are included with the product.

Unit:mm

Applicable products	Bearing screw diameter	Hexagonal nut	Flat washer
Rotary Potentiometers Slide Potentiometers RK09L RK168 RK097 RK203	M9		
Metal Shaft Insulated Shaft Knob Operating	M8		
RK097 RK163	M7		
RK097	M6	