

# Metal Shaft Potentiometer Rotary Motor-driven Type

RK168/RK271 Series



Remote controllable and available in a wide variety of products.

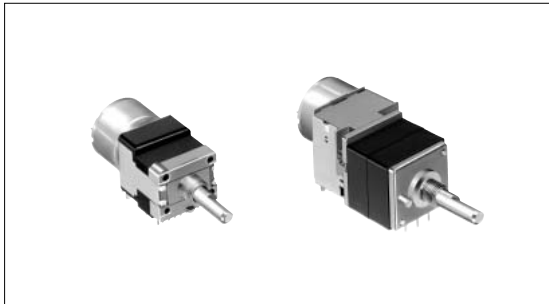
Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating



## Typical Specifications

Items	Specifications	
	RK168	RK271
Total resistance tolerance	± 20%	
Maximum operating voltage	50V AC	30V AC
Total rotational angle	300 ± 5 °	
Rotational torque	10 to 40mN·m	15 to 45mN·m
Operating life	15,000cycles	
Operating temperature range	- 10 to + 70	
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	

## Product Line

Type	Model	Number of resistor elements	Shaft type	Length of the shaft ( mm )	Total resistance ( k )	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
		Quad-unit			20	15A	Without		RK16814MG02R	2
		6 ganged-unit			100	3B	With		RK16816MGA04	3
27mm size	RK27112MC0	Dual-unit			100	15A	Without	150	RK27112MC030	4

## Dimensions

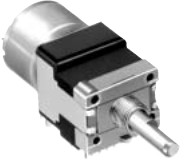
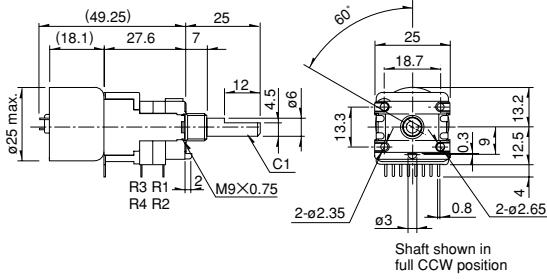
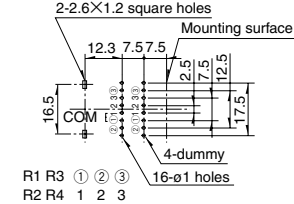

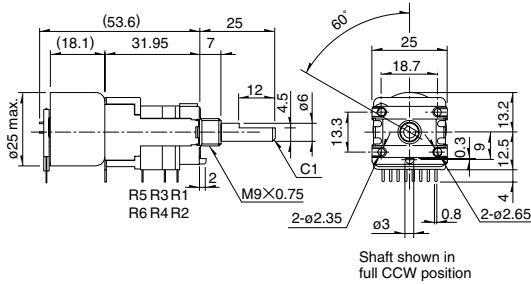
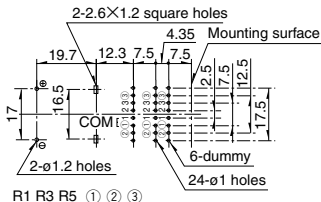
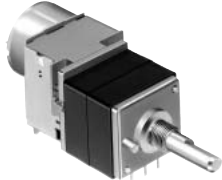
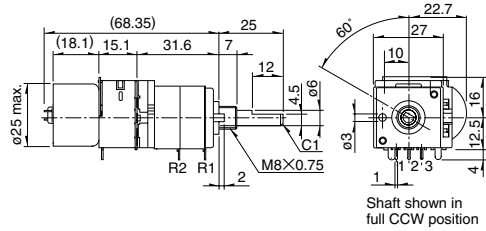
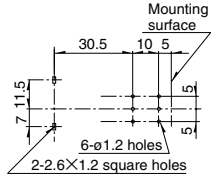
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions ( Viewed from mounting side )
1	<p>16mm size Single-shaft, dual-unit RK16812MG</p>	<p>Shaft shown in full CCW position</p>	<p>2-2.6x1.2 square holes Mounting surface 19.7 15.5 7.5 17 16.5 16 2-ø1.2 holes COM 8-ø1 holes 2-dummy 12.5 17.5 17.5 4 0.8 2-ø2.65 R1 ① ② ③ R2 1 2 3</p>

Refer to P.363 for attached parts.

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
2	<p>16mm size Single-shaft, quad.-unit RK16814MG</p> 	 <p>Shaft shown in full CCW position</p>	 <p>2-2.6X1.2 square holes Mounting surface</p> <p>R1 R3 ① ② ③ R2 R4 1 2 3</p> <p>4-dummy 16-ø1 holes</p>
3	<p>16mm size Single-shaft, 6-ganged unit RK16816MG</p> 	 <p>Shaft shown in full CCW position</p>	 <p>2-2.6X1.2 square holes Mounting surface</p> <p>R1 R3 R5 ① ② ③ R2 R4 R6 1 2 3</p> <p>6-dummy 24-ø1 holes</p> <p>2-ø1.2 holes</p>
4	<p>27mm size Single-shaft, dual-unit RK27112MC</p> 	 <p>Shaft shown in full CCW position</p>	 <p>Mounting surface</p> <p>6-ø1.2 holes</p> <p>2-2.6X1.2 square holes</p>

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## 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					
27mm size	Single-shaft, dual-unit	RK27112MC					
	Single-shaft, quad.-unit	RK27114MC					

### Total Resistance Variety

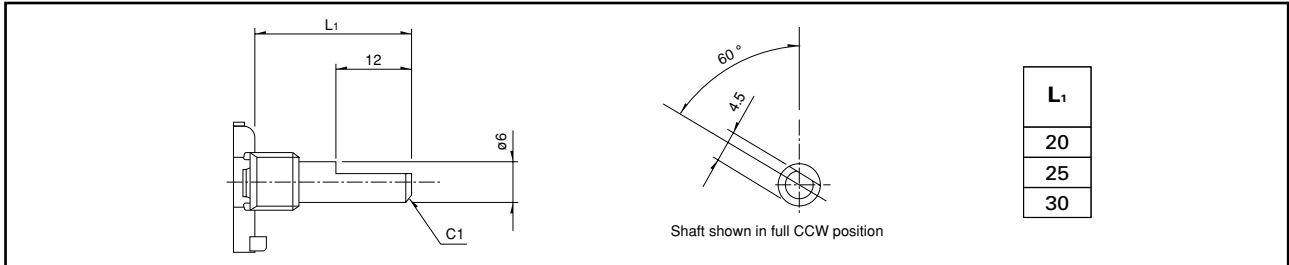
Total resistance(k )	10	20	50	100

### Resistance Taper

Resistance taper	15A	3B

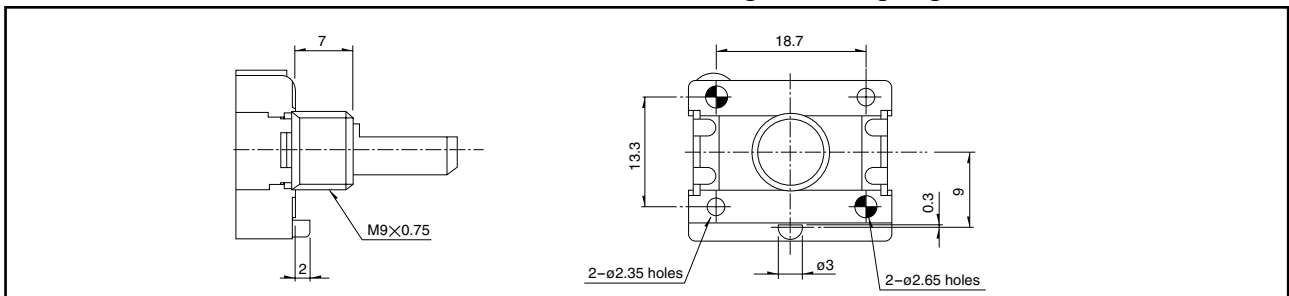
### 16mm Size(RK168 Series) Shaft Variety

Unit:mm



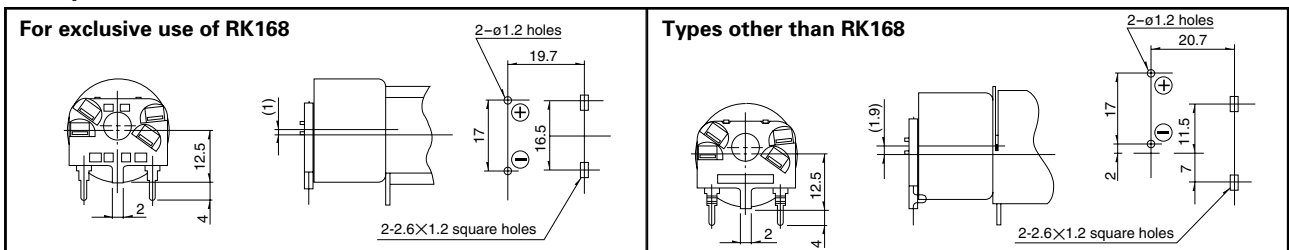
### 16mm Size(RK168 Series) Standard Dimensions of Bushing and Fixing Lug

Unit:mm



### Style of Printed Terminal for Motor






Unit:mm



### Note

marked are specifications recommended by ALPS.

## List of Varieties

Type	20mm size metal shaft	27mm size metal shaft	50mm size metal shaft high-quality-audio	Rotary motor-driven		
Number of drive shafts	Single-shaft					
Model	RK203 / EC20A	RK2711	RK5011 A	RK1681 / MG0	RK2711 MC0	
Photo						
Fixing method of bushing	The bushing can be fastened by use of screws	Bushing screw clamp	The bushing can be fastened by use of screws			
Terminal mounting	Vertical type	Horizontal type				
Attached switch	Without					
Gang error applicable to Dual-unit parts for audio volume control purposes	—	- 60dB to 0dB 3dB max.	- 100dB to 0dB 2dB max.	- 40dB to 0dB 3dB max.	- 60dB to 0dB 3dB max.	
Solder heat resistance	Manual soldering	300 max. 3s max.	350 max. 5s max.	350 ± 10 , 5 <sup>+1</sup> s	350 max. 3s max. Motor terminal: 350 <sup>0</sup> max 2s max.	
	Dip soldering	260 ± 5 , 5 ± 1s	—	260 ± 5 , 5 ± 1s	—	
	Reflow soldering	—				
Operating temperature range	- 30 to + 80		- 10 to + 70			
Electrical performance	Rated power	0.05W		0.1W	0.05W	
	Residual resistance	—	R 10k 20 max. 10k < R 50k 30 max. 50k < R Nominal total resistance of 0.1% or less	—	R 10k 20 max. 10k < R 50k 30 max. 50k < R Nominal total resistance of 0.1% or less	
	Maximum attenuation (Volume control)	—	5k R < 10k 70dB min. 10k R < 50k 80dB min. 50k R < 100k 90dB min. 100k R 100dB min.	120dB min.	5k R < 10k 70dB min. 10k R < 50k 80dB min. 50k R < 100k 90dB min. 100k R 100dB min.	
	Insulation resistance	100M min. 250V DC	100M min. 500V DC		100M min. 250V DC	100M min. 500V DC
	Voltage proof	300V AC for 1minute	500V AC for 1minute		300V AC for 1minute	500V AC for 1minute
Mechanical performance	Stopper strength(N·m)	0.5	0.9	1.5	0.9	
	Push-pull strength	100N max.		150N 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				
Environmental performance	Cold	- 40 ± 2 for 192h	- 30 ± 3 for 96h	- 20 ± 3 for 240h	- 20 ± 2 for 96h	- 30 ± 3 for 96h
	Dry heat	85 ± 2 for 192h	70 ± 2 for 96h	70 ± 2 for 240h	70 ± 2 for 96h	
	Damp heat	60 ± 3 , 90 to 95%RH for 240h	40 ± 2 , 90 to 95%RH for 96h	60 ± 2 , 90 to 95%RH for 240h	40 ± 2 , 90 to 95%RH for 96h	
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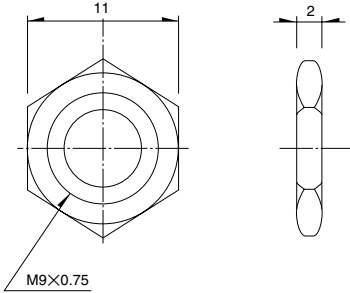
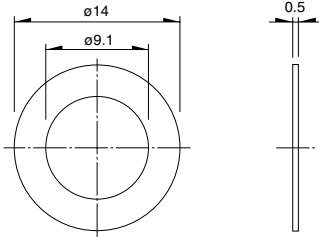
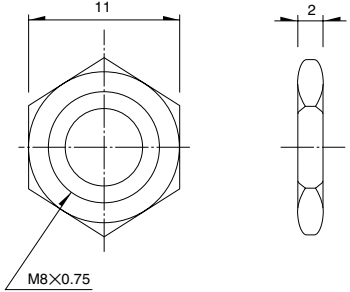
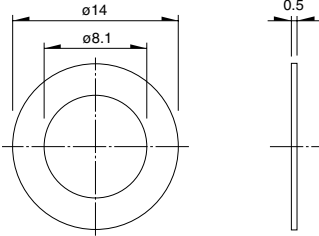
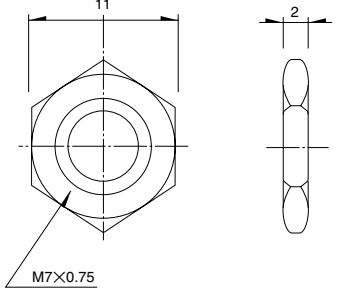
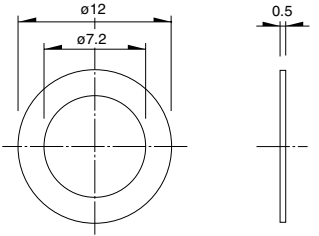
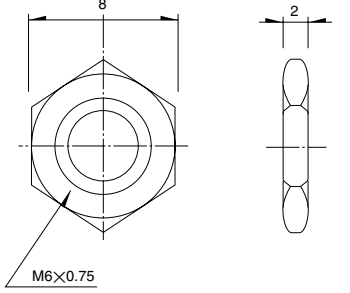
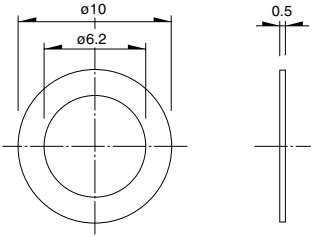
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## Attached Parts

The following parts are included with the product.

Unit:mm

Applicable products	Bearing screw diameter	Hexagonal nut	Flat washer
<p>RK09L RK168 RK097 RK203</p>	<p>M9</p>		
<p>RK271</p>	<p>M8</p>		
<p>RK097 RK098 RK163</p>	<p>M7</p>		
<p>RK097 RK098</p>	<p>M6</p>		

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