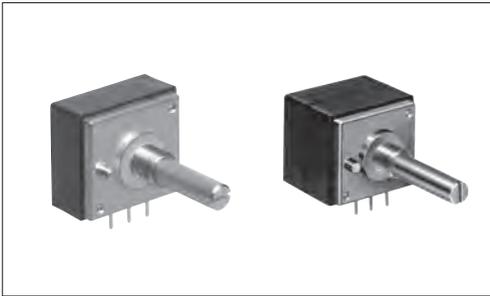


RK271 27mm Size Metal Shaft Type

High performance potentiometer with excellent operational feel



Typical Specifications

Items	Specifications
Total resistance tolerance	±20%
Maximum operating voltage	30V AC
Total rotational angle	300° ±3°
Rotational torque	8 to 35mN·m
Operating life	15,000 cycles
Operating temperature range	-10°C to +70°C

Rotary Potentiometers
Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Through Shaft Type

Ring Type

Product Line

Number of resistor elements	Shaft type	Length of the shaft L ₁ (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.
						Japan	Export		
Single-unit	Slotted	25	31	100	15A	100	500	RK2711120026	1
			Without					RK271111001T	
Dual-unit	Slotted	20	Without	100	15A	100	500	RK27112A00AK	2
		25						RK27112A00CC	
	Flat	20						RK27112A0A16	3
		25						RK27112A00B9	

Note

Other varieties are also available. Refer to "Other Specifications" (P.303).

Packing Specifications

Bulk

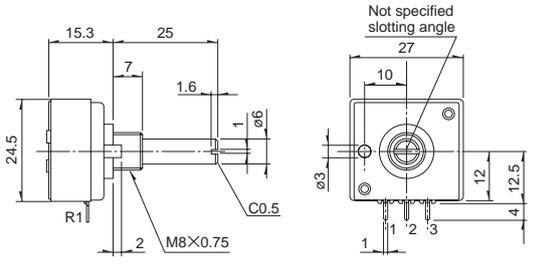
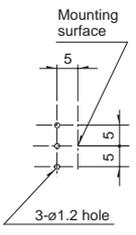
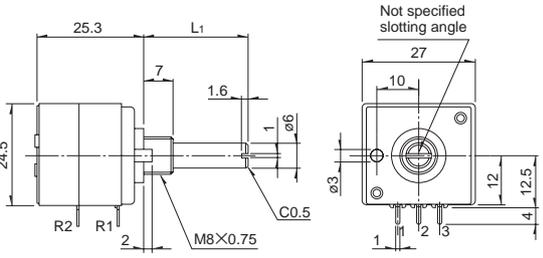
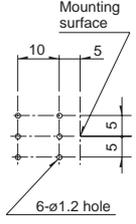
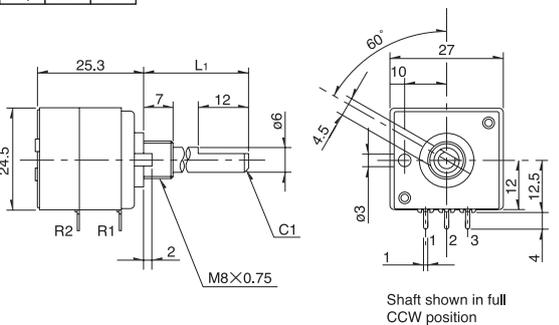
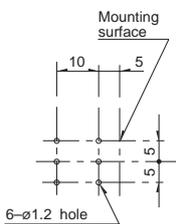
Number of resistor elements/ Shaft length	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case /export packing	
Single-unit / 25mm Dual-unit / 20mm	100	500	540×380×314
Dual-unit / 25mm			510×360×359

Refer to P.302 for attached parts.
Refer to P.303 for other specifications.
Refer to P.304 for ordering products not listed.
Refer to P.311 for soldering conditions.

RK271 27mm Size Metal Shaft Type

Dimensions

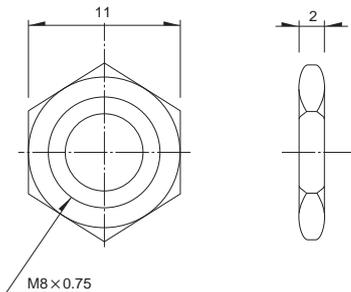
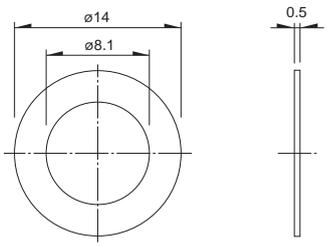
Unit:mm

No.	Photo	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>L_1 20 25</p> 	
3	 <p>Single-shaft, dual-unit RK27112</p>	<p>L_1 20 25</p> 	

27mm Size Metal Shaft Type / Attached Parts

The following parts are included with the product.

Unit:mm

Nut	Washer
	

27mm Size Metal Shaft Type / Other Specifications

In addition to the Product Line, we accommodate the following specifications. Combinations not included in the Product Line are treated as semi-standard products.

Products Specification

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

Total Resistance Variety

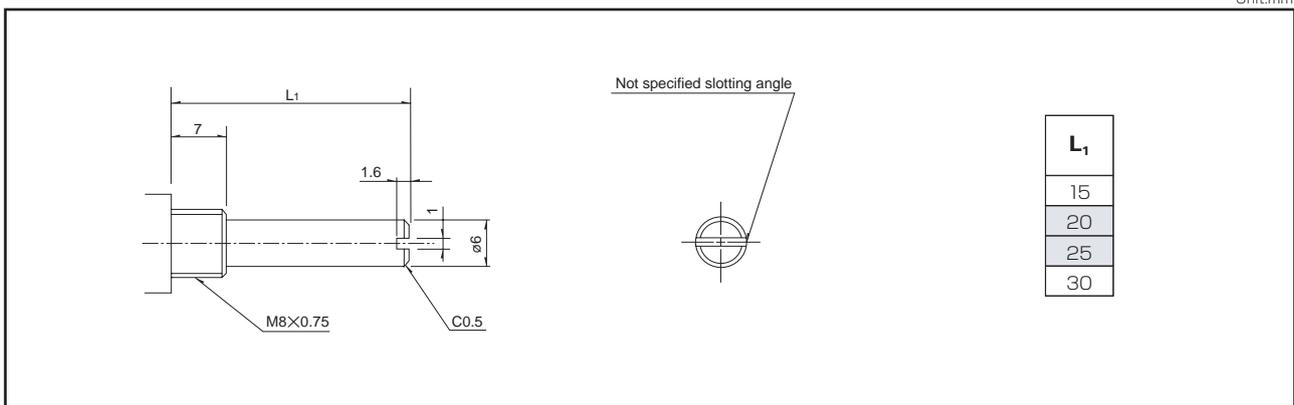
Total resistance (kΩ)	5	10	20	50	100	250

Resistance Taper

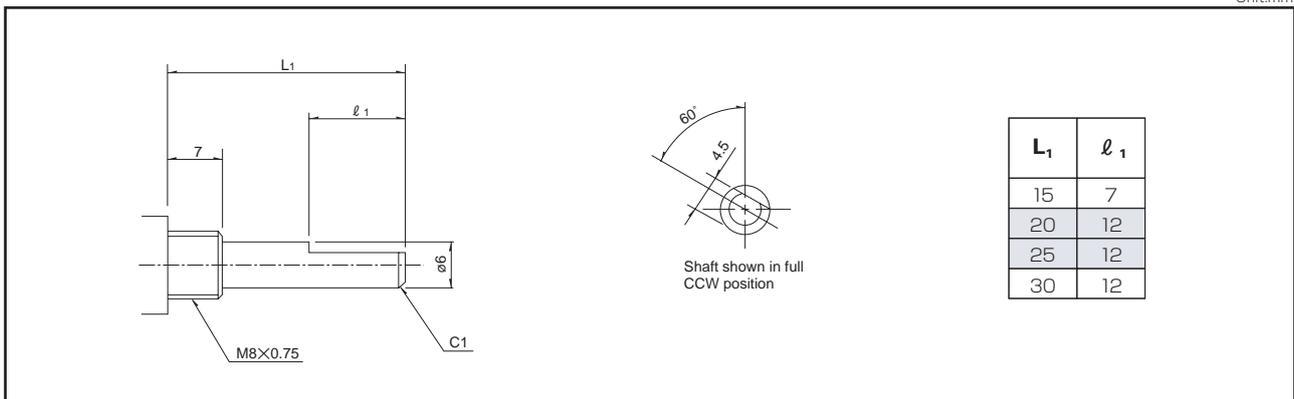
Resistance taper	15A	3B

Dimensions of Shaft

1) Slotted type



2) Flat type



Note

Marked are specifications recommended by Alps Alpine.

※ The gang error of single-shaft, 4-gang potentiometers is the gang error between R1 and R2 and between R3 and R4. The gang error for 5kΩ is within 3dB at —50dB to 0dB.

27mm Size Metal Shaft Type / Ordering Products Not Listed

In addition to the Product Line, we accommodate the following specifications. Combinations not included in the Product Line are treated as semi-standard products. Please refer to the notation example below.

Sample Part Number

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

Model type

Code	Model type
111	Single-unit without detent
112	Single-unit, with detent
12A	Dual-unit for vol. (without detent)
12B	Dual-unit for vol. (with detent)
14A	Quad-unit for vol. (without detent)
14B	Quad-unit for vol. (with detent)

Shaft type

Code	Shaft type
F	Flat
S	Slotted

Length of the shaft L₁ (mm)

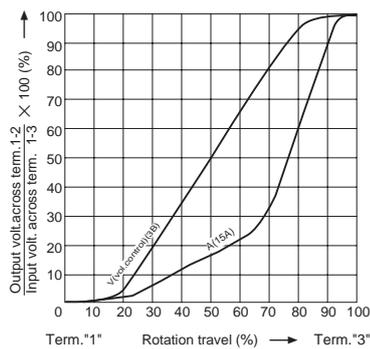
Code	Length of the shaft	Code	Length of the shaft
15	15	25	25
20	20	30	30

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

Note

Marked are specifications recommended by Alps Alpine.

Rotary
Potentiometers

Slide
Potentiometers

Metal Shaft

Insulated
Shaft

Knob
Operating

Through
Shaft Type

Ring Type

Type	16mm size	27mm size	50mm size	Rotary motor-driven	
Series	RK163	RK271	RK501	RK168	
	Single-shaft				
Number of resistor elements	Single/dual	Single/dual/quad	Dual/quad		
Photo					
Control part orientation	Horizontal				
Fixing method of bushing	Bushing screw clamp				
Operating temperature range	-10°C to +70°C				
Operating life	15,000 cycles				
Available for automotive use	—	—	—	—	
Life cycle (availability)					
Electrical performance	Total resistance (kΩ)	5, 10, 20, 50, 100, 200	5, 10, 20, 50, 100, 250	10, 20, 50, 100	
	Resistance taper	15A, 1B, 3B, 15C	15A, 3B		
	Rated Power	0.1W 0.05W (15A)	0.05W	0.1W	0.05W
	Residual resistance	R≤10kΩ 20Ω max. 10kΩ<R≤50kΩ 30Ω max. 50kΩ<R Nominal total resistance of 0.1% or less	R≤10kΩ 20Ω max. 10kΩ<R≤50kΩ 30Ω max. 50kΩ<R Nominal total resistance of 0.1% or less	—	
	Maximum attenuation (Volume control)	5kΩ≤R< 10kΩ 70dB min. 10kΩ≤R< 50kΩ 80dB min. 50kΩ≤R<100kΩ 90dB min. 100kΩ≤R 100dB min.	5kΩ≤R< 10kΩ 70dB min. 10kΩ≤R< 50kΩ 80dB min. 50kΩ≤R<100kΩ 90dB min. 100kΩ≤R 100dB min.	120dB min.	
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max.	-70dB to -60dB 3dB max. -60dB to 0dB 2dB max.	-100dB to 0dB 3dB max. ※	
	Insulation resistance	100MΩ min. 500V DC			100MΩ min. 250V DC
	Voltage proof	500V AC for 1 minute			300V AC for 1 minute
	Center-taps	Without			
Mechanical performance	Detent	Without, Cente	Without, Center, 21, 31, 41	Without	
	Stopper strength	0.9 N·m		1.5 N·m	0.9 N·m
	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 for 2 hours respectively			
Shaft style	Serrated type, Flat type, Slotted type	Slotted type, Flat type	Slotted type	Flat type	
Terminal style	Insertion, Lead		Insertion		
Attached switch	—				
Page	296	301	305	307	

Metal Shaft Potentiometers Soldering Conditions	311
Potentiometers Cautions	384
Potentiometers Measurement and Test Methods	386
Potentiometers Resistance Taper	388

Note

○ Indicates applicability to some products in the series.

※ Gang error of 4-gang (quad) model: - 100dB to 0dB 3dB max. (applies only between R1 and R2 and between R3 and R4)

Reference for Manual Soldering

Series		Tip temperature	Soldering time	No. of solders
RK09L, RK097		350°C max.	3s max.	1 time
RK271		350°C max.	5s max.	1 time
RK501		350±10°C	5 ⁺¹ ₀ s	1 time
RK163		350°C max.	5s max.	1 time
RK168	Potentiometer terminal	300°C max.	3s max.	1 time
	Motor terminal	350°C max.	2s max.	

Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
RK09L, RK097	100°C max.	2 min. max.	260±5°C	5±1s	2 times max.
RK501	120±10°C	2 min. max.	260±5°C	5±1s	2 times