

# Metal Shaft Potentiometer 11mm Size Metal Shaft Low-profile Type

RK117 Series



Available in without switch, 0.5mm-travel and 1.5mm-travel with push-on switch.



## Typical Specifications

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

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
Insulated Shaft  
Knob Operating

## Product Line

### Single-shaft without switch type

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k )	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.
Single-unit	Vertical type	Flat	15	Without	10	1B	1,200	RK117111000N	1
				With				RK1171110W04	
				Without	20	15A		RK1171110W0D	
				With				RK1171110W0L	
			20	Without	10	1B	RK1171110W03	2	
							20		RK117111000A

### Single-shaft momentary push(0.5mm travel)switch type

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (k )	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.
Single-unit	Vertical type	Flat	20	Without	10	1B	1,000	RK117111400C	3
				With				RK1171114D01	

### Single-shaft momentary push(1.5mm travel)switch type

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft (mm)	Number of detent	Total resistance (k )	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.
Single-unit	Vertical type	Flat	20	Without	10	3B	1,200	RK1171114W0W	4

## Note

Products other than those listed in the above products are also available. Please contact us for details.

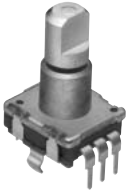
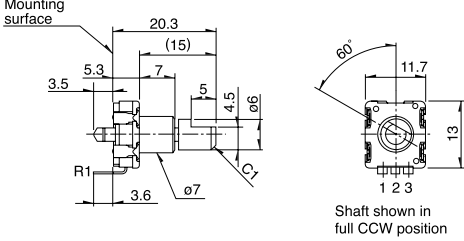
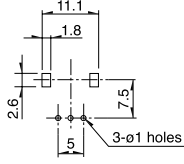

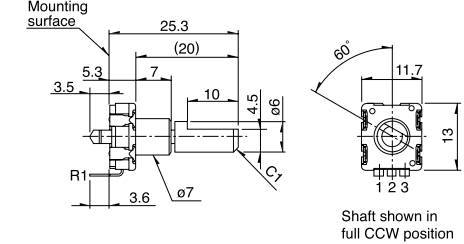
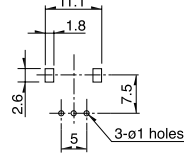

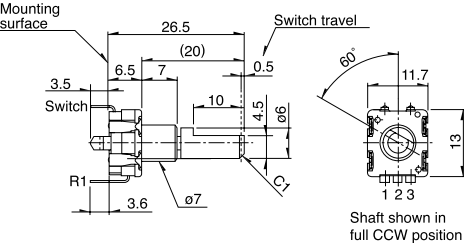
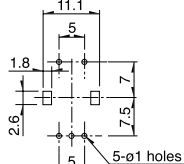
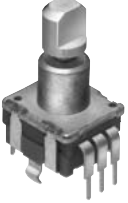
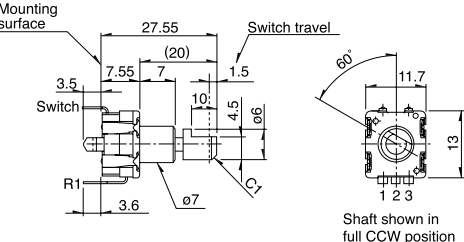
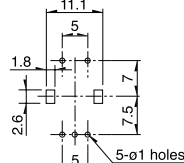
# Metal Shaft Potentiometer 11mm Size Metal Shaft Low-profile Type | RK117 Series

## Dimensions

Unit:mm

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
Insulated Shaft  
Knob Operating

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1			
2			
3			
4			

## Product Varieties

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

### Total Resistance Variety

Total resistance( k )	10	20	50
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### Resistance Taper

Resistance taper	15A	1B	3B
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### Detent and Attached Switch

Variety	Items	Detent		Attached switches travel
Single-shaft, Single-unit	Without	Center	41	0.5, 1.5mm

### Dimensions of Shaft

#### Flat type

Unit:mm

Shaft shown in full CCW position.

L <sub>1</sub>	L <sub>b</sub>	l
15	7	5
20	7	10
25	7	12

#### Notes

1.   marked are specifications recommended by ALPS.
2. L<sub>b</sub> is only available in 7mm, and does not support M7( with screws )

## Specifications for the Switch

### Mechanical Characteristics

Switch type		Pole-position	Rating	Changeover torque ( Operating force )	Travel( mm )
Momentary push	5R4411	SPST	3A 16V DC	6 ± 3N	0.5
	5R4511			5 ± 2N	1.5

### Electrical Characteristics

Model	Contact resistance	Insulation resistance	Voltage proof
5R4411, 5R4511	100m for initial period, 200m after operating life	100M min. Measured with a 250V DC megger.	300V AC 1 minute min.

### Durability

Operating life under load	5R4411	The switch under a rated resistive load shall be subjected to a total of 25,000 cycles of operation at a speed of 600 to 1,000 cycles per hour. The contact resistance after testing should not exceed 200m .
	5R4511	The switch under a rated resistive load shall be subjected to a total of 20,000 cycles of operation at a speed of 600 to 1,000 cycles per hour. The contact resistance after testing should not exceed 200m .

#### Note

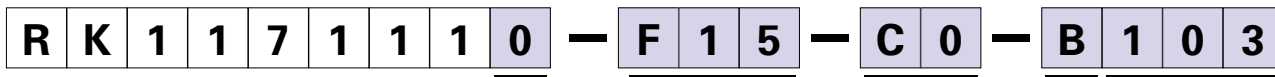
The operating current should be 10mA or greater.

Refer to P.342, 502 for resistance taper.

## Orders Other Than Recommended Products

When ordering product varieties that are not listed in the Product Line, please specify by referring to the below example.

### Sample Part Number



#### Switch

Code	Switch
0	Without switch
4	With push-on switch( 0.5mm travel )

#### Length of the shaft(L, X mm)

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

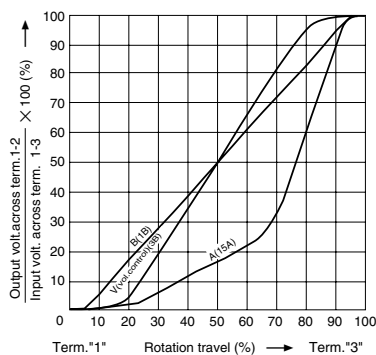
#### Detent

Code	Detent	Code	Detent
C0	Without	41	41
C1	Center		

#### Resistance taper

Code	Resistance taper
A	15A
B	1B
V	3B

B:For tone & general  
V:For vol.



#### Total resistance

Code	Total resistance (kΩ)	Code	Total resistance (kΩ)
103	10	503	50
203	20		

### Notes

1.   marked are specifications recommended by ALPS.
2. For 1.5mm-travel push-on switch requirements, please indicate separately.

Rotary Potentiometers

Slide Potentiometers

Metal Shaft







Insulated Shaft

Knob Operating

## List of Varieties

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
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Knob Operating

Type	9mm size metal shaft snap-in	9mm size metal shaft multi-ganged	11mm size metal shaft low-profile	11mm size metal shaft reflow	16mm size metal shaft	
Number of drive shafts	Single-shaft		Dual-shaft	Single-shaft		
Model	RK09L1	RK0971 RK0981	RK0972	RK117111	RK119	RK1631 1 RK1631 A
Photo						
Fixing method of bushing	The bushing can be screwed down		Bushing screw clamp	Bushing guide type		
Terminal mounting	Horizontal type	Vertical type	Horizontal type	Vertical type		
Attached switch	Without		Rotary switch 1	Momentary push switch		Without
			Push-on push-off switch 1			
			Momentary push switch 1			
Gang error applicable to Dual-unit parts for audio volume control purposes	- 40dB to 0dB 3dB max.		—————		- 40dB to 0dB 3dB max.	
Solder heat resistance	Manual soldering	350 max. 3s max.			350 ± 10 3 <sup>+1</sup> / <sub>0</sub> s	350 max. 3s max. Motor terminal: 360 max 2s max.
	Dip soldering	260 ± 5 , 5 ± 1s			—————	
	Reflow soldering	—————			Please see P.347	—————
Operating temperature range	- 10 to + 70	- 20 to + 70	- 30 to + 70	- 40 to + 85	- 10 to + 70	
Electrical performance	Rated power	0.05W				
	Residual resistance	10k < R < 50k 50k < R	20 max. 30 max. Nominal total resistance of 0.1% or less		R 10k 50 max. 10k < R 50k 80 max. 50k < R Nominal total resistance of 0.2% or less	R 10k 20 max. 10k < R 50k 30max. 50k < R Nominal total resistance of 0.1% or less
	Maximum attenuation (Volume control)		5k R < 10k 10k R < 50k 50k R < 100k 100k R		70dB min. 80dB min. 90dB min. 100dB min.	
	Insulation resistance	100M min. 250V DC				100M min. 500V DC
	Voltage proof	300V AC for 1minute				500V AC for 1minute
Mechanical performance	Stopper strength	0.5N·m( With push-lock mechanism type: 0.4N·m )			0.5N·m	0.9N·m
	Push-pull strength	80N 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	- 20 ± 2 for 96h	- 30 ± 2 for 96h		- 40 ± 2 for 240h	- 20 ± 2 for 96h
	Dry heat	70 ± 2 for 96h			85 ± 2 for 240h	70 ± 2 for 96h
	Damp heat	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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### Push-on Switch Specifications

Items	RK097		RK117		RK119	
Contact arrangement	Single pole and single throw ( Push on )					
Travel ( mm )	0.5	1.5	0.5	1.5	0.5 ± 0.3	1.5 ± 0.5
Operating force ( N )	4 <sup>+1</sup> / <sub>2</sub>	5 ± 2	6 ± 3	5 ± 2		4 ± 2
Rating	0.5A 12V DC		3A 16V DC		0.1A 5V DC (1mA 5V DC min.ratings)	
Contact resistance	100m for initial period;200m after operating life					
Operating life	10,000 times min.	20,000 times min.	10,000 times min.	20,000 times min.	100,000 times min.	20,000 times min.

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### Notes

1. For the switch attached, the single-shaft or inner shaft of the dual-shaft type can be chosen.
2. The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.