# 11mm Size Metal Shaft Low-profile Potentiometer

RK117 Series

3 types available: without switch, with 0.5mm travel or 1.5mm travel push-on switch.

# Potentiometers

Slide Potentiometers

Trimmer

Potentiometers

Multi Control

Devices

**Position Sensors** 

Metal

Shaft

Shaft

Knob

Insulated

Operating





#### Features

- Low-profile (only 7.55mm in height) with a 1.5mm travel push-on switch.
- Rear mounting configuration permits direct mounting on the front side of a PC board.
- Without detent, with center detent, with 41 detents are available.

# Applications

- Sound volume, tone and balance controls for car audio systems and other audio players
- Controls for accessories including dimmers and wipers in vehicle cabins
- Level controls for communication devices including transceivers
- Controls for home appliances

### Typical Specifications

Items	Specifications
Total resistance tolerance	±20%
Maximum operating voltage	50V AC
Total rotational angle	300 +10°
Rotational torque	2 to 25 mN∙m
Operating life	15,000 cycles
Operating temperature range	-10°C to +70°C

# Recommended Products List Single-shaft without switch type

Number of resistor elements	Mounting direction	Products No.	Shaft type	Length of the shaft (mm)	Center detent	Total resistance ( <b>k</b> Ω)	Resistance taper	Minimum packing unit (pcs.)	Drawing No.
	Vertical type	RK117111000N		15	Without	10	1B	- 100	
		RK1171110W04	- Flat		With				1
Single-unit		RK1171110W0D			Without	20	15A		
Single-unit		RK1171110W0L			With	50			
		RK1171110W03		20	\A(''.1 1	10	1B		2
		RK117111000A			Without	20	]		

# Recommended Products List

# Single-shaft push-on (0.5mm stroke) switch type

Number of resistor elements	Mounting direction	Products No.	Shaft type	Length of the shaft (mm)	Center detent	Total resistance ( <b>k</b> Ω)	Resistance taper	Minimum packing unit (pcs.)	Drawing No.
Single-unit	Vertical type	RK117111400C	Flat	20	Without	- 10	1B	100	3
		RK1171114D01			With				3

### Single-shaft push-on (1.5mm stroke) switch type

Number of resistor elements	Mounting direction	Products No.	Shaft type	Length of the shaft (mm)	Number of detent	Total resistance ( <b>k</b> Ω)	Resistance taper	Minimum packing unit (pcs.)	Drawing No.
Single-unit	Vertical type	RK1171114V02	Flat	15	41	50	1B	100	4

# Note

Additional products other than the above recommended products are available. For inquiries, contact our sales department.

# **Product Specifications**

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

# ■ Total Resistance Variety

Total resistance (kΩ)	10	20	50
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# Resistance Taper

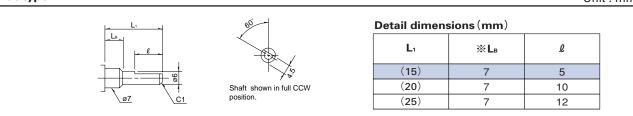
Resistance taper 15A 1B 3B
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### Detent and Attached switch

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

# Dimensions of Shaft

Flat type Unit : mm



# Note

 $\mbox{\ensuremath{\&LB}}$  is only available in 7mm, and does not support M7 (with screws).

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# **Specification for Switch**

### Mechanical Characteristics

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

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# ■ Electrical Characteristics

Model	Contact resistance		Insulation resistance	Voltage proof
5R4411, 5R4511	100m Ω max.	Measured by a 1A 5V DC voltage drop method.	100MΩ min. Measured with a 250V DC megger.	300V AC 1 minute min.

# Durability

Metal Operating life Shaft under load

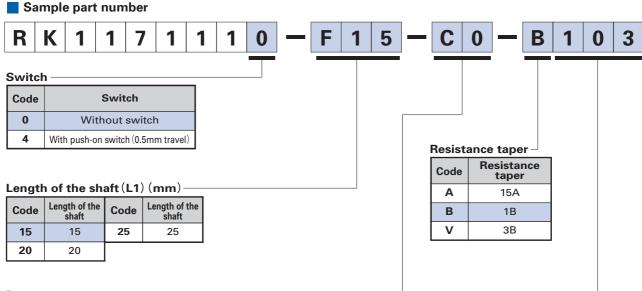
The switch under a rated resistive load shall be subjected to a total of 10,000 cycles of operation at a speed of 600 to 1,000 cycles per hour. The contact resistance after testing should not exceed  $200 \, \mathrm{m} \, \Omega$ .

### Note

The operating current should be 10mA or greater.

# Orders other than recommended products

Specify orders for varieties that are not listed in the Recommended Product List, referring to the following example.



#### Detent

Code	Detent	Code	Detent
C0	Without	41	41
C1	Center		
		•	

# **Total resistance**

Code	Total resistance $(\mathbf{k}\Omega)$	Code	Total resistance $(\mathbf{k}\Omega)$
103	10	503	50
203	20		

#### Notes

- Shows the specification recommended by us.
- 2. Please specify if you need a 1.5mm travel push-on switch.

**Dimensions**Unit: mm

Din	nensions		Unit : mm
No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting side)
1	Single-shaft, single-unit RK1171110	Mounting surface 20.3  (15)  3.5  7  5  9  11,7  123  Shaft shown in full CCW position	11.1 1.8 9 2 15 3-ø1 holes
2	Single-shaft, single-unit RK1171110	Mounting surface 25.3 (20) 3.5 7 10 0 11.7 12.3 Shaft shown in full CCW position	11.1 1.8 1.8 1.9 2.0 2.0 3-ø1 holes
3	Single-shaft, single unit with push-on switch travel 0.5mm RK1171114-5R4411	Mounting surface 26.5 Switch travel  (20) 0.5 Switch travel  (20) 0.5 Switch travel  (21) 1.7 Switch travel  (22) 1.2 3 Shaft shown in full CCW position	11.1 5 1.8 2 2 2 2 2 5 5-ø1 holes
4	Single-shaft, single unit with push-on switch travel 1.5mm RK1171114-5R4511	Mounting surface 22.55 Switch travel  3.5 7,55 7  Switch travel  11.7  Switch travel  22.55 Switch travel  12.3  Shaft shown in full CCW position	11.1 5 1.8 2 2 5 5-Ø1 holes

Rotary Potentiometers

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# **Products Specifications**

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				BV007				
Items		Model	RK09L	RK097 RK098	RK117	RK16		
Operating t	emper	ature range	−10°C to +70°C					
	resista	Total ince tolerance		±2	0%			
	Rat	ted power		0.0	5W			
		laximum iting voltage		50V AC		150V AC		
Electrical		Residual esistance	10kΩ < 50kΩ <	R≦10kΩ 20Ωmax. ⟨R≦50kΩ 30Ωmax. ⟨R Nominal t	otal resistance of 0.1%	6 or less		
performance	att	laximum tenuation ime control)		$\begin{array}{lll} 5k\Omega \leqq R < \ 10k\Omega & 70dB \ min. \\ 10k\Omega \leqq R < \ 50k\Omega & 80dB \ min. \\ 50k\Omega \leqq R < 100k\Omega & 90dB \ min. \\ 100k\Omega \leqq R & 100dB \ min. \\ \end{array}$				
		sulation esistance		100MΩ min. 500V DC				
	Vol	tage proof		1 minute 500V AC				
	Total rotational angle		RK09L 300 $\pm$ 5° RK097 300 $\pm$ 5°(Axis movement type is 300 $^{+10^{\circ}}_{-5^{\circ}}$ ) 300 $^{+10^{\circ}}_{-5^{\circ}}$		300±5°			
	Rotat	ional torque	2 to 25mN ⋅ m					
	Stop	per strength	0.5N·m (F	0.9N • m (For dual-shaft type, 0.6N • m)				
	Push-	pull strength	80N max.	80N max. 100N max.				
Mechanical performance	V	ibration	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					
	So	lderability	230±5℃, 3±0.5s					
		Manual soldering	350℃ or less and within 3 seconds					
	Solder heat resistance	Dip soldering (Dip available products)	260±5℃ 4±1s					
Endurance	Оре	erating life	15,000 cycles					
		Cold	−10°C for 96h					
Environ- mental test		g-term heat esistance	+70℃ for 96h					
		/loisture esistance		+40±2℃, 90 to	95%RH for 96h			