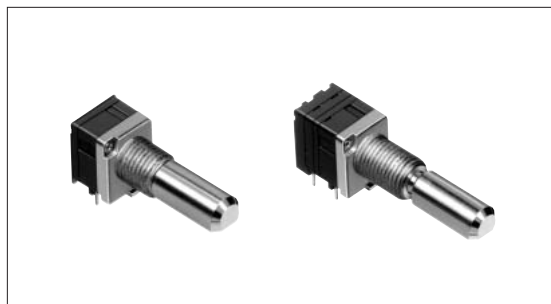


# Encoder 9mm Size Metal Shaft Type

RK097 Series



Combination with a 9mm metal shaft potentiometer is available thanks to the same size.



## Features

- Combinations with a 9mm metal shaft potentiometer and switch are also available.
- High-precision, compact, sliding contact type encoder.
- Incremental type.

## Applications

- Controls for image / sound devices, including DVD players, car audio systems and other audio systems
- Level controls for communication devices including transceivers and industrial wireless radios

## Typical Specifications

Items	Specifications
Rating	1mA 5V DC
Operating life	30,000 cycles

## Products Line

Operating section	Length of operating section (mm)	Detent torque (mN·m)	Number of detent	Resolution	Operating direction	Push-on switch	Travel of push-on switch (mm)	Minimum packing unit (pcs.)	Products No.	Drawing No.
Flat	20	10±8	18	9	Horizontal	Without	—	1,200	RK09710EHC08	1
						With	0.5	700	RK09710ELC09	2
							1.5		RK09710ELC0A	3
			Without	—		1,200	RK09710EHC09	1		
				With		0.5	700	RK09710ELC07	2	
						1.5		RK09710ELC0B	3	

## Note

Additional products other than listed above are also available. Contact our Sales Department for other products.

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line Package Type

Multi Control Devices

TACT Switch™

Custom-Products


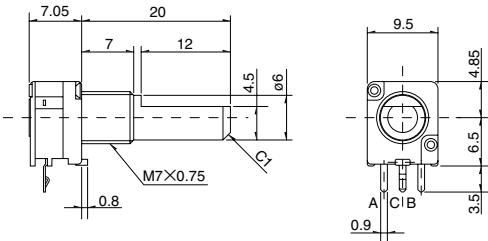
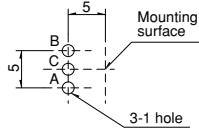

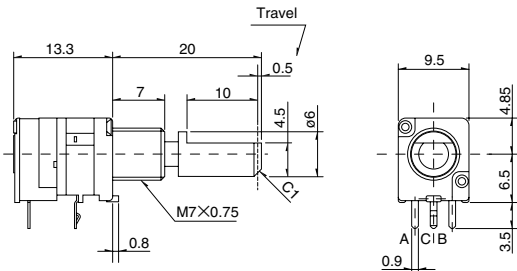
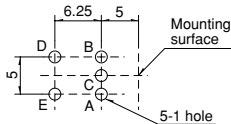

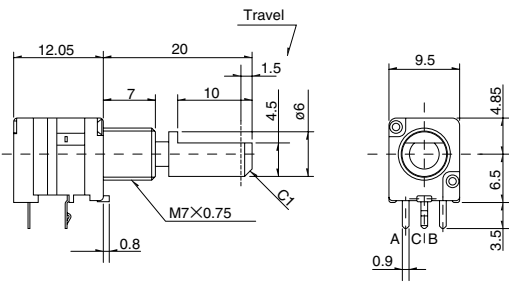
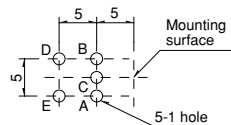
Incremental Type

Absolute Type

For other specifications, see P.183  
For attached parts, see P.233

### Dimensions

Unit:mm

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

- Detector
- Push
- Slide
- Rotary
- Encoders**
- Power
- Dual-in-line Package Type
- Multi Control Devices
- TACT Switch™
- Custom-Products
- Incremental Type
- Absolute Type

## Products Specifications

Items		9mm size metal shaft encoders			
		EC09E		RK097	
Operating temperature range		-30°C to +85°C		-30°C to +70°C	
Maximum operating current (Resistive load)		10mA			
Electrical performance	Rating	10mA 5V DC		1mA 5V DC	
	Output signal	Output of A and B signals, proportionate to phase difference			
	Output wave				
	Sliding noise	$V_1 = V_2 = 1.5V$ max. <p>Measurement condition : Rotation speed 360°/s    t : Masking time to avoid chattering</p>			
		At R = 5 kΩ Chattering : 5ms max. Bounce : 2ms max.		At R = 5 kΩ Chattering : 5ms max. Bounce : 5ms max.	
	Insulation resistance	100MΩ min. 250V DC			
	Voltage proof	300V AC			
Mechanical performance	Rotational torque	—			
	Detent torque	8±5 mN · m		10±8 mN · m	
	Push-pull strength	100N			
	Resistance to soldering heat	Manual soldering	350°C max. 3s max.		
Dip soldering		260±5°C, 3±1s			
Reflow soldering		—			
Durability	Rotational life	15,000 cycles		30,000 cycles	
Environmental performance	Cold	-40±3°C for 240h			
	Dry heat	85±3°C for 240h			
	Damp heat	60±2°C, 90 to 95%RH for 240h			

Detector

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Type

Absolute  
Type

### Push-on Switch Specifications

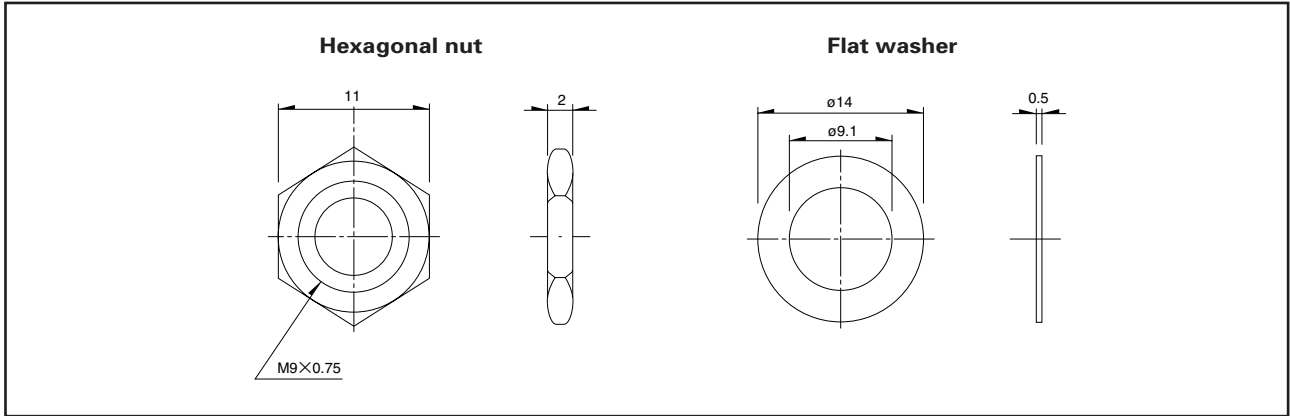
Items		9mm size metal shaft encoders			
		EC09E		RK097	
Switch circuit · the number of contact		Single pole and single throw (Push-on)			
Travel of switch		0.5±0.3mm	1.5±0.5mm	0.5 <sup>+0.7</sup> <sub>-0.3</sub> mm	1.5±0.5mm
Operating force of switch		6 <sup>+2.5</sup> <sub>-2</sub> N	4±2N	4 <sup>+4</sup> <sub>-2</sub> N	5±2N
Rating		10mA 5V DC		10mA 12V DC	
Contact resistance		100mΩ for initial period; 200mΩ after rotational life.			
Operating life		10,000 times min.			20,000 times min.

## Attached Parts

These parts are attached to the following products.

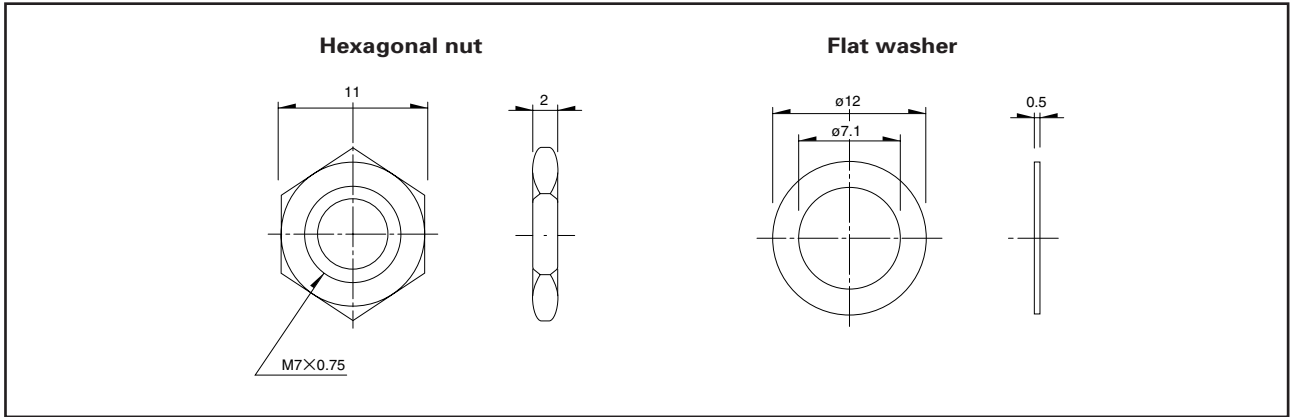
**SRGH Series**

Unit:mm



**RK097, EC11B Series**

Unit:mm



Detector

Push

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Rotary

**Encoders**

Power

Dual-in-line  
Package Type

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Custom-  
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Incremental  
Type

**Absolute  
Type**