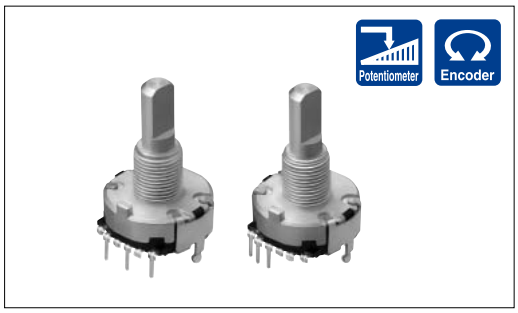
Metal Shaft Potentiometer
20mm Size Metal Shaft Type
RK203/EC20A Series

Car Use | RoHS compliant

Heavy rotation torque and good operational feel, available in potentiometer and encoder type.



Typical Specifications

Items	Specifications	
	Potentiometer	Encoder
Rating	0.05W	1mA 5V DC
Operating life	30,000cycles	

Products Line

Potentiometer

Operating section	Length of operating section (mm)	Detent torque (mN•m)	Number of detent	Rotational angle	Operating direction	Minimum order unit (pcs.)	Products No.	Drawing No.
Flat	30	Depending on individual specification		240°max	Vertical	400	RK2031110	1

Encoder

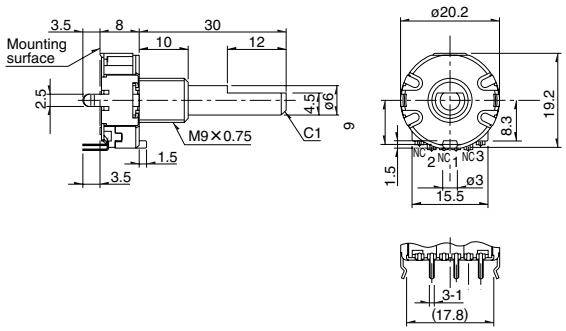
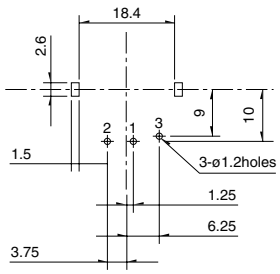
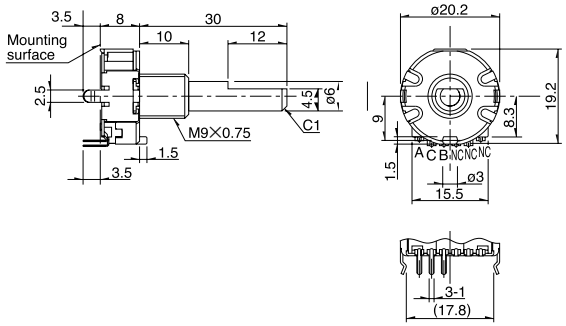
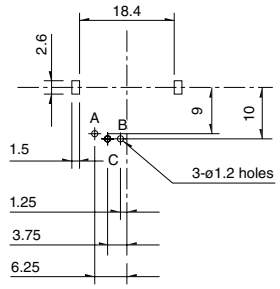
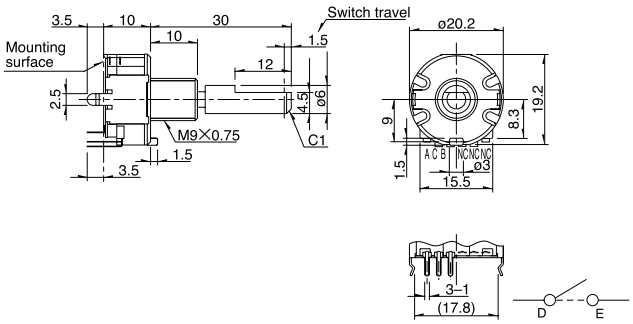
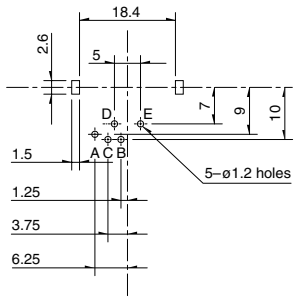
Operating section	Length of operating section (mm)	Detent torque (mN•m)	Number of detent	Number of pulse	Travel of push-on switch (mm)	Operating direction	Minimum order unit (pcs.)	Products No.	Drawing No.
Flat	30	40±20	18	18	—	Vertical	400	EC20A1820401	2
					1.5			EC20A1824401	3

Notes

1. All the potentiometer types can be customized. Contact us with the detailed specifications if you have such requirements.
2. The same size of the non-switch type can be used as an encoder type. The switch type is an incremental encoder type only.

Dimensions

Unit:mm

Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
RK203 **Without switch type,** **Potentiometer type**		
EC20A **Without switch type,** **Incremental type**		
EC20A **With push-on switch** **(travel 1.5mm),** **Incremental type**		

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^{+1}_{0}s	350℃ max. 3s max. Motor terminal : 350℃ max 2s max.	350℃ max. 5s max. Motor terminal:350℃ 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≦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.	120dB min.	5kΩ ≦R< 10kΩ 70dB min. 10kΩ ≦R< 50kΩ 80dB min. 50kΩ ≦R< 100kΩ 90dB min. 100kΩ ≦R 100dB min.	
	Insulation resistance	100MΩ min. 250V DC	100MΩ min. 500V DC		100MΩ min. 250V DC	100MΩ 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	
Page		352	354	358	360	

● Metal Shaft Potentiometers Attached Parts ·····363
● Metal Shaft Potentiometers Cautions ·····364, 365