

60mm Size Hollow Shaft Encoder

EC60A Series

Incremental encoder with large size hollow to support multifunction requirements.



Car Use

Features

- Hollow construction with a large hole diameter can be arranged in various ways.
- Good rotational operational touch.
- Incremental type.

Applications

- For temperature / fan speed control of air conditioners for automobiles
- For various controllers for on-board audio equipment, etc.

Typical Specifications

Items	Specifications
Rating	0.5mA 5V DC
Operating life	30,000 cycles

Products Line

Length of operating section (mm)	Detent torque	Number of detent	Resolution	Operating direction	Minimum packing unit (pcs.)	Products No.
22.5	40±20 mN·m	30	15	Vertical	150	EC60A1520404

Power

Push

Slide

Rotary

Encoders

Jog Shuttle

Telephone-hook

Detector

Vibration Sensors

Dual-in-line Package Type

Multi Control Devices

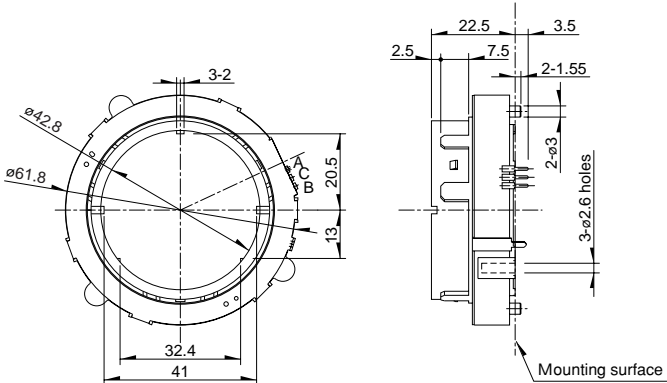
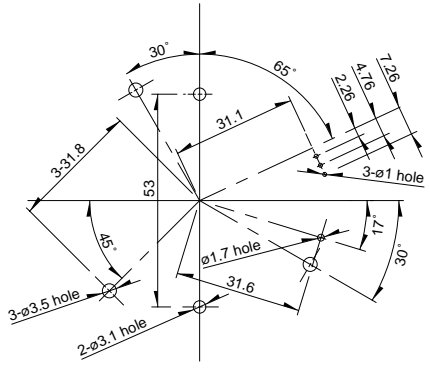
TACT

Incremental Type

Absolute Type

Dimensions

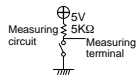
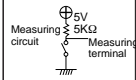
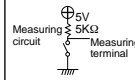
Unit : mm

Style	PC board mounting hole dimensions
 <p>Technical drawings of the EC60A encoder. The front view shows a circular encoder with an outer diameter of 61.8 mm and an inner diameter of 42.8 mm. The total width is 41 mm, and the mounting flange thickness is 13 mm. The side view shows a total height of 22.5 mm, with a mounting surface offset of 2.5 mm. The shaft diameter is 2.6 mm, and there are 3-ø2.6 holes. The PC board mounting view shows a circular pattern of holes with a diameter of 53 mm. The holes are arranged in three groups: 3-ø3.5 holes at 30° intervals, 2-ø3.1 holes at 45° intervals, and 3-ø1 holes at 65° intervals. Other dimensions include 31.1, 31.6, 17, 2.96, 1.76, and 1.26 mm.</p>	 <p>PC board mounting hole dimensions diagram. The diagram shows a circular pattern of holes with a diameter of 53 mm. The holes are arranged in three groups: 3-ø3.5 holes at 30° intervals, 2-ø3.1 holes at 45° intervals, and 3-ø1 holes at 65° intervals. Other dimensions include 31.1, 31.6, 17, 2.96, 1.76, and 1.26 mm.</p>

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Products Specifications

Items		Type	SRGP30	SRGP40	EC21A	SRGP20	EC28B	SRGPWJ	EC60A	
Operating temperature range			-40°C to +85°C	-10°C to +60°C	-40°C to +85°C	-10°C to +60°C	-40°C to +85°C	-10°C to +60°C	-30°C to +80°C	
Rating			10mA 5V DC	1mA 5V DC	10mA 5V DC				0.5mA 5V DC	
Electrical performance	Output voltage		1V max.at 5V DC,1mA (resistive load) 	2.5V max.at 5V DC,1mA (resistive load)	1V max.at 5V DC,1mA (resistive load) 	2.5V max.at 5V DC,1mA (resistive load)	1V max.at 5V DC,1mA (resistive load) 	2.5V max.at 5V DC,0.5mA (resistive load)		
	Insulation resistance		100MΩ min. 100V DC	100MΩ min. 250V DC	100MΩ min. 100V DC	100MΩ min. 250V DC	100MΩ min. 100V DC	10MΩ min. 50V DC		
	Voltage proof		100V AC for 1 min.	300V AC for 1 min.	100V AC for 1 min.	300V AC for 1 min.	100V AC for 1 min.	50V AC for 1 min.		
Mechanical performance	Rotational torque		5±2.5mN·m	2±1mN·m	16±7mN·m	7±3mN·m	5 ± ₃ mN·m 7±5mN·m 12±7mN·m 20±10mN·m	13±4mN·m/ 6.5±4mN·m	40±20mN·m	
		Robustness of terminal	—				5N for 1 min.			3N for 10s
		Robustness of actuator	Pushing direction	20N		100N	40N	100N	40N	100N
			Pulling direction	20N		100N	40N	100N	40N	50N
	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								
	Solderability	230±5°C, 3±0.5s								
	Resistance to soldering heat	Manual soldering	350±5°C, 3s max.		300±10°C, 3 [±] 1s				350±5°C, 3s max.	
Dip soldering		—		260±5°C, 5±1s				260°C 5s max.		
Reflow soldering		150°C 2min max., 230°C 20s max.	150°C 150s max., 230°C 40s max. peak 260°C max.	—						
Durability	Operating life without load	50,000 cycles	100,000 cycles	50,000 cycles				30,000 cycles		
	Operating life with load	50,000 cycles	100,000 cycles	50,000 cycles				30,000 cycles		
Environmental performance	Cold	-40±2°C for 96h	-20±2°C for 96h	-40±2°C for 240h	-20±2°C for 96h	-40±2°C for 240h	-20±2°C for 96h	-40±3°C for 240h		
	Dry heat	85±2°C for 96h		85±2°C for 240h	85±2°C for 96h	85±2°C for 240h	85±2°C for 96h	85±3°C for 240h		
	Damp heat	40±2°C, 90 to 95%RH for 96h		60°C±2°C, 90 to 95% RH for 240h	40±2°C, 90 to 95% RH for 96h	60°C±2°C, 90 to 95% RH for 240h	40±2°C, 90 to 95% RH for 96h	40°C±2°C, 90 to 95% RH for 240h		

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