

Encoder 40mm Size Hollow Shaft Type

EC40A Series



Less shaft wobble achieves good operation feel.

Detector
Push
Slide
Rotary
Encoders



Features

- Excellent operation feel when rotating.
- Incremental type.

Applications

- For adjusting temperature and fan speed in air conditioners
- For various control in car audio equipment

Power
Dual-in-line
Package Type
Multi Control
Devices
TACT Switch™
Custom-
Products

Incremental
Type
Absolute
Type

Typical Specifications

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

Product Line

Actuator length (mm)	Detent torque (mN·m)	Number of detent	Number of pulse	Operating direction	Minimum packing unit (pcs.)	Product No.
22	20±11	30	15	Vertical	400	EC40A1520401

Dimensions

Unit:mm

Style	PC board mounting hole dimensions
<p>Technical drawing showing front, side, and mounting views of the encoder. Dimensions include: 2-(24), 3-2.4, 4-1.2, $\phi 4.0$, 3-R3, 2-22.1, 3.4, 12, 22.8, 21.4, 2.5, 8.5, 22, 9, 7.6, 3-$\phi 2.6$ holes, $\phi 31.4$, $\phi 29.4$, 3.5, Mounting surface.</p>	<p>Technical drawing showing PC board mounting hole dimensions. Dimensions include: 110°, 42.3, 33.4, 1.8, 2-$\phi 2.1$ holes, 3-3.5 holes, 30°, 30°, 22.8, 3.1, 20.2, 2-22.1, ACB, 2.5, 2.5, 3-$\phi 1$ holes.</p>

Refer to P.214 for product specifications.

Product Specifications

Type		EC40A	EC45A	RK45A RK45B	EC60A	EC35B	EC35AH	
Items		EC40A	EC45A	RK45A RK45B	EC60A	EC35B	EC35AH	
Operating temperature range		-40°C to +85°C						
Detector	Rating	0.5mA 5V DC		0.05W	0.5mA5V DC	10mA5V DC		
Push	Electrical performance	Output voltage		2.5V max. at 5V DC, 0.5mA (resistive load)	2.5V max. at 5V DC, 0.5mA (resistive load)	2.5V max. at 5V DC, 1mA (resistive load)		
Slide		Insulation resistance		10MΩ min. 50V DC		100MΩ min. 250V DC	250V DC 100MΩ min.	
Rotary		Voltage proof		50V AC for 1minute		500V AC for 1minute	300V AC for 1minute	
Encoders	Mechanical performance	Detent torque		20±11mN·m	Shall be in accordance with individual specifications.	40±20mN·m	20±10mN·m	
Power		Terminal strength		3N for 10s		5N for 1minute		
Dual-in-line Package Type		Actuator strength	Pushing direction		100N			
Multi Control Devices			Pulling direction		50N		100N	
TACT Switch™		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				
Custom-Products		Resistance to soldering heat	Manual soldering		350°C max. 3s max.			
Incremental Type	Dip soldering		260°C max. 5s max.		260±5°C, 5±1s			
	Reflow soldering							
Absolute Type	Durability	Operating life without load		30,000cycles			50,000cycles	
		Operating life with load		30,000cycles			50,000cycles	
Environmental performance	Cold		-40±3°C for 240h					
	Dry heat		85±3°C for 240h					
	Damp heat		40±2°C, 90 to 95% RH for 240h			60±2°C, 90 to 95% RH for 240h		

Self-return Switch Specifications

Items	EC35B
circuit · number of contacts	Single pole and single throw (Push-on)
Travel(mm)	2.8±0.5
Push operating force(N)	3.8±1.5
Switch ON position	15±5°
Ratational torque	40±25mN·m
Rating	10mA 5V DC
Contact resistance	200mΩ max.
Operating life	15,000cycles