

EC60A Series



Large hollow-center structure contributes to multifunctioning.

Hollow Shaft Type Devices



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 order unit(pcs.)	Product No.
22.5	40 ± 20	30	15	Vertical	150	EC60A1520404

Dimensions

Unit:mm








[illegible]

Encoder Type

Potentiometer Type	
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List of Varieties

Hollow Shaft
Type Devices

Type		Encoder						
		21mm size	28mm size	35mm size		40mm size	45mm size	60mm size
Series		EC21A	EC28A	EC35AH	EC35B	EC40A	EC45A	EC60A
Photo								
Output		Incremental		ABC	Incremental/ Self-return switch	Incremental	Absolute	Incremental
Outline specifications	Shaft types	Hollow shaft						
	Operating direction	Vertical						
	Number of pulse/ Number of detent	9/18 15/30	15/30	6×ABC / 18 10×ABC / 30	15/30		31 Position	15 / 30
	Push switch(Travel mm)	Without						
	Optional functions							
	Changeover angle	—			12 °		—	12 °
Dimensions (mm)	W	21.6	28	35	35	40.4	44.5	61.8
	D		29		37	41.6	45	
	H	4		15	21.35	9		11.5
Soldering	Manual soldering	350 max. 3s max.						
	Dip soldering	260 ± 5 , 5 ± 1s				260 max. 5s max.		
	Reflow soldering							
Operating temperature range		-40 to +85						
Electrical performance	Output voltage	2.5V max. at 5V DC, 1mA (resistive load)		2.5V max. at 5V DC, 0.5mA (resistive load)	2.5V max. at 5V DC, 1mA (resistive load)	2.5V max.at 5V DC, 0.5mA (resistive load)		
	Insulation resistance	100M min. 250V DC				10M min. 50V DC		10M min. 500V DC
	Voltage proof	300V AC for 1minute				50V AC for 1minute		500V AC for 1minute
Mechanical performance	Rotational torque		16 ± 7mN· m	12 ± 7mN· m 20 ± 10mN· m	18 ± 7mN· m	20 ± 10mN· m	20 ± 11mN· m	Shall be in accordance with individual specifications. 40 ± 20mN· m
	Terminal strength		5N for 1minute				3N for 10s.	
	Actuator strength	Rotational direction	100N					
		Push direction	100N				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					
Environmental performance	Cold	-40 ± 2 for 240h		-40 ± 3 for 240h				
	Dry heat	85 ± 2 for 240h		85 ± 3 for 240h				
	Damp heat	60 ± 2 , 90 to 95%RH for 240h				40 ± 2 , 90 to 95%RH for 240h		
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Encoder
TypePotentiometer
Type

Self-return Switch Specifications

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

Hollow Shaft Type Device Cautions465, 466, 467

Note

※ The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.