

Hollow Shaft Type Devices 28mm Size Encoder Type

EC28A Series



A low-profile unit with 4mm height with good operation feel.

Hollow Shaft
Type Devices



Typical Specifications

Items		Specifications
Rating		10mA 5V DC
Operating life	Without load	50,000cycles
	With load	50,000cycles

Product Line

Actuator length (mm)	Detent torque (mN·m)	Number of detent	Number of pulse	Operating direction	Push-on switch	Minimum order unit(pcs.)	Product No.
15	7 ± 5	30	15	Vertical	Without	400	EC28A1520401
	12 ± 7						EC28A1550401
	20 ± 10						EC28A1560401

Dimensions








Unit:mm

Encoder
Type
Potentiometer
Type

Style	PC board mounting hole dimensions
<p>Technical drawings of the encoder showing side and top views with dimensions. The side view shows a total height of 15mm, with a 4mm actuator length and a 3-4mm mounting flange. The top view shows a 28mm diameter with 120-degree segments and a 10.75mm mounting hole pitch.</p>	<p>PC board mounting hole dimensions diagram showing a 28.9mm diameter with 2-ø1.5 holes and a 16mm mounting hole pitch. The mounting holes are spaced 10.75mm apart.</p>

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
Type

Potentiometer
Type

Self-return Switch Specifications

Items	EC35B
Circuit · number of contacts	Single pole and double throw(Self-return)
Trave(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	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.