

Ring Type Device 28mm Size Ring Encoder

EC28A Series



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

Ring Type
Devices



Typical Specifications

Items	Specifications
Rating	10mA 5V DC
Operating life	50,000cycles
Operating temperature range	-40°C to +85°C

Product Line

Actuator length (mm)	Detent torque (mN·m)	Number of detent	Number of pulse	Operating direction	Minimum order unit (pcs.)	Product No.
15	7±5	30	15	Vertical	400	EC28A1520401
	12±7					EC28A1550401
	20±10					EC28A1560401

Packing Specifications

Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
400	800	370×520×261

Ring Encoder
Ring Potentiometer








Dimensions

Unit:mm

Style	PC board mounting hole dimensions
<p>Technical drawings of the EC28A Ring Encoder. 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 a 17mm inner diameter and 120-degree segments. Mounting holes are 3-3.05mm in diameter. The bottom view shows a 10.75mm diameter for the pulse outputs labeled A, C, and B.</p>	<p>PC board mounting hole dimensions diagram showing a 28.9mm square footprint with 2-ø1.5 holes. The mounting holes are 3-ø1 holes. The distance between the mounting holes is 16mm, and the distance from the center to the mounting holes is 2.6mm. The distance between the pulse outputs A, C, and B is 1.6mm.</p>

Automotive
Use

List of Varieties

Type	Ring 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								
	Ring								
	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	43	45		
	H	4		4.5	12.1	9		11.5	
Soldering	Manual soldering	350°C max. 3s max.							
	Dip soldering	260±5°C, 5±1s			260°C max. 5s max.				
	Reflow soldering	-----							
Operating temperature range		-40°C to +85°C							
Electrical performance	Output voltage	2.5V max. at 1mA 5V DC (resistive load)		2.5V max. at 0.5mA 5V DC (resistive load)	2.5V max. at 1mA 5V DC, (resistive load)	2.5V max. at 0.5mA 5V DC (resistive load)			
	Insulation resistance	100MΩ min. 250V DC				10MΩ min. 50V DC		10MΩ min. 500V DC	
	Voltage proof	300V AC for 1minute				50V AC for 1minute		500V AC for 1minute	
Mechanical performance	Rotational torque	7±5mN·m 16±7mN·m	7±5mN·m 12±7mN·m 20±10mN·m	12±5mN·m 18±7mN·m 30±15mN·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	Pushing direction	100N						
		Pulling 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°C for 240h		-40±3°C for 240h					
	Dry heat	85±2°C for 240h		85±3°C for 240h					
	Damp heat	60±2°C, 90 to 95%RH for 240h				40±2°C, 90 to 95%RH for 240h			
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Self-return Switch Specifications

Items	EC35B
Contact arrangement	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°
Ratational torque	40±25mN·m
Rating	10mA 5V DC
Contact resistance	200mΩ max.
Operating life	15,000cycles

● Ring Type Device Cautions476, 477, 478

Note

※ The operating temperature range for automotive applications can be raised upon request. Please contact us for details.