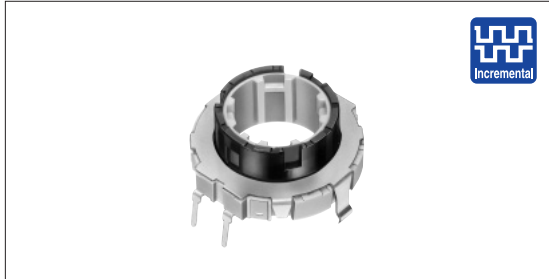


# Ring Type Device 21mm Size Ring Encoder

EC21A Series



Ring encoder with 4mm height contribute to space saving and multifunctioning.



## Typical Specifications

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

Ring Type  
Devices

## Product Line

Actuator length (mm)	Detent torque (mN·m)	Number of detent	Number of pulse	Operating direction	Minimum order unit (pcs.)	Product No.	No.
9	7±5	30	15	Vertical	600	EC21A1540401	1
	16±7					EC21A1520401	
		18	9		240	EC21A0920401	2

## Packing Specifications

Tray

Products No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case /export packing	
EC21A09	240	480	375×285×223
EC21A15	600	1200	373×540×181

Ring  
Encoder

Ring  
Potentiometer

## Dimensions








Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Do not wire the shaded area)
1			
2			



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			
	Push switch (Travel mm)										
Without											
Dimensions (mm)	Optional functions										
	Changeover angle										
	—		12°		—		12°				
Soldering	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	
Operating temperature range	Manual soldering										
	350°C max. 3s max.										
	Dip soldering										
260±5°C, 5±1s											
Reflow soldering											
260°C max. 5s max.											
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 Cautions .....476, 477, 478

#### Note

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