

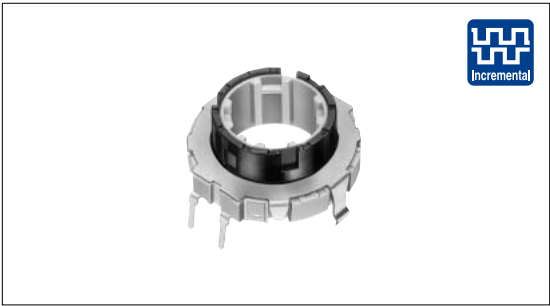
Hollow Shaft Type Devices

21mm Size Encoder Type

EC21A Series



Hollow-center shaft encoder with 4mm height contribute to space saving and multifunctioning.



Typical Specifications

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

Hollow Shaft
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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.	No.
9	7±5	30	15	Vertical	Without	600	EC21A1540401	1
	16±7						EC21A1520401	
		18	9					EC21A0920401

Dimensions

Unit:mm

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

Encoder
Type

Potentiometer
Type

List of Varieties

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	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		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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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	200mΩ 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.