

Ring Type Device 28mm Size Ring Encoder

EC28A Series



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



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	Minimum order unit (pcs.)	Product No.
15	7 ± 5	30	15	800	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	366 × 509 × 287

Dimensions

Unit:mm

Style	PC board mounting hole dimensions

Note

Please place purchase orders per minimum order unit N (integer).

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

Metal
Shaft

Insulated
Shaft









Hollow
Shaft

Ring
Type



Automotive
Use

List of Varieties

Type		Ring Type							
		21mm size	28mm size	35mm size			40mm size	45mm size	60mm size
Series		EC21A	EC28A	EC35A	EC35AH	EC35B	EC40A	EC45A	EC60A
Photo									
Output		Incremental			ABC	Incremental/ Self-return switch	Incremental	Absolute	Incremental
Outline specifications	Number of pulse/ Number of detent	9/18 15/30	15/30		6×ABC/18 10×ABC/30	15/30		31 Position	15/30
	Changeover angle	—		12°	—	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 ~ +85°C							
Automotive use		○							
Electrical performance	Output voltage	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	Detent torque	7±5mN·m 16±7mN·m	7±5mN·m 12±7mN·m 20±10mN·m	18±7mN·m	12±5mN·m 18±7mN·m 30±15mN·m	20±10mN·m	20±11mN·m	30±14 mN·m 36±16 mN·m	40±20mN·m
	Rotational torque	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 ~ 95%RH for 240h				40±2°C, 90 ~ 95%RH for 240h			
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Detector

Push

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Rotary

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TACT Switch™

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Shaft

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Shaft

Hollow
Shaft

Ring
Type

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 Cautions244, 245

Note

- ※ The operating temperature range for automotive applications can be raised upon request. Please contact us for details.
- marks in "Available for automotive use" indicate that some of the series products can work at the operating temperature range from -40°C to +85°C.