

Encoder 9mm Size Metal Shaft Type

EC09E Series



A compact 9.5mm size and round shape contribute to save space.

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



Typical Specifications

Items	Specifications
Rating	10mA 5V DC
Operating life	15,000cycles
Operating temperature range	-40°C to +85°C

Product Line

Actuator configuration	Actuator length (mm)	Detent torque (mN·m)	Number of detent	Number of pulse	Operating direction	Push-on switch	Travel of push-on switch (mm)	Minimum order unit (pcs.)	Product No.	Drawing No.
Flat	15	8±5	30	15	Vertical	Without	—	1,400	EC09E1520406	1
	With					0.5	EC09E1524405		2	
						1.5	EC09E1524404			

Packing Specifications

Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
700	1,400	374×529×213

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting face)
1	Without switch type		
2	With push-on switch (travel 0.5/1.5mm)		

Notes

- Products other than those listed in the above chart are also available. Please contact us for details.
- Please place purchase orders per minimum order unit N (integer).

ALPS

Refer to P.217 for product specifications.

List of Varieties

	Type		Metal shaft							
			9mm size		11mm size					
	Series		EC09E	EC11B	EC11E		EC111	EC11EH		
Detector	Photo									
Push	Output		Incremental				Self-return switch	ABC switch		
Slide	Outline specifications	Shaft types	Single-shaft			Dual-shaft	Single-shaft			
Rotary		Operating direction	Vertical	Horizontal		Vertical				
Encoders		Number of pulse/ Number of detent	15/30			9/18 15/30 18/36		_____	6×ABC/18 10×ABC/30	
		Push switch (Travel mm)	Without/With (0.5, 1.5)							
Power		Optional functions	_____			Push-lock mechanism Without detent		_____		
Dual-in-line Package Type		Changeover angle	_____				17 to 40°		_____	
TACT Switch™	Dimensions (mm)	W	9.5	11.7						
Custom-Products		D		13.8	12		13	12		
		H	4.5	5.5	4.5	8.5	5	4.5		
	Soldering	Manual soldering	350℃ max. 3s max.							
		Dip soldering	260±5℃, 3±1s		260±5℃, 5±1s					
	Operating temperature range		-40℃ to +85℃							
	Automotive use		○	○	○		○	○		
	Maximum operating current (Resistive load)		10mA							
Metal Shaft	Electrical performance	Output signal	Output of A and B signals, proportionate to phase difference				Self-return switch	Three phase A, B and C		
		Output wave	Please see P.217							
		Sliding noise	Please see P.217							
		Insulation resistance	100MΩ min. 250V DC							
		Voltage proof	300V AC for 1minute							
Hollow Shaft	Mechanical performance	Rotational torque	_____		7 ⁺³ ₋₄ mN·m	—	3~30mN·m		_____	
Ring Type		Detent torque	8±5mN·m	12±7mN·m	10±7mN·m		_____	10±7mN·m		
		Push-pull strength	100N							
	Environmental performance	Cold	-40±3℃ for 240h							
		Dry heat	+85±3℃ for 240h							
		Damp heat	60±2℃, 90 to 95%RH for 240h							
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Push-on Switch Specifications

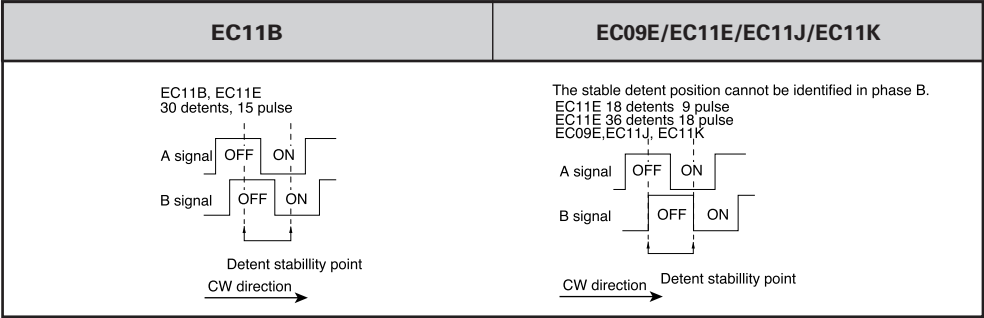
Items	EC09E		EC11B		EC11E		EC111		EC11EH	
Contact arrangement	Single pole and single throw (Push-on)									
Travel (mm)	0.5±0.3	1.5±0.5	0.5 ^{+ 0.4} _{- 0.3}	1.5±0.5	0.5±0.3	1.5±0.5 8±0.8※	0.5±0.3	1.5±0.5	0.5±0.3	1.5±0.5
Operating force (N)	6 ^{+ 2.5} _{- 2}	4±2	6±3	5±2	6 ^{+ 2.5} _{- 2}	4±2 8 max. ※	6 ^{+ 2.5} _{- 2}	4±2	6 ^{+ 2.5} _{- 2}	4±2
Rating	10mA 5V DC		0.1A 5V DC (500μA 5V DC min. ratings)		0.1A 5V DC (500μA 5V DC min. ratings) 0.5A 12V DC ※		0.1A 5V DC (500μA 5V DC min. ratings)			
Contact resistance	100mΩ max. for initial period; 200mΩ max. after operating life.									
Operating life	10,000times min.		25,000 times min.	20,000 times min.	20,000times min. 10,000times min.※		20,000times min.			

Notes

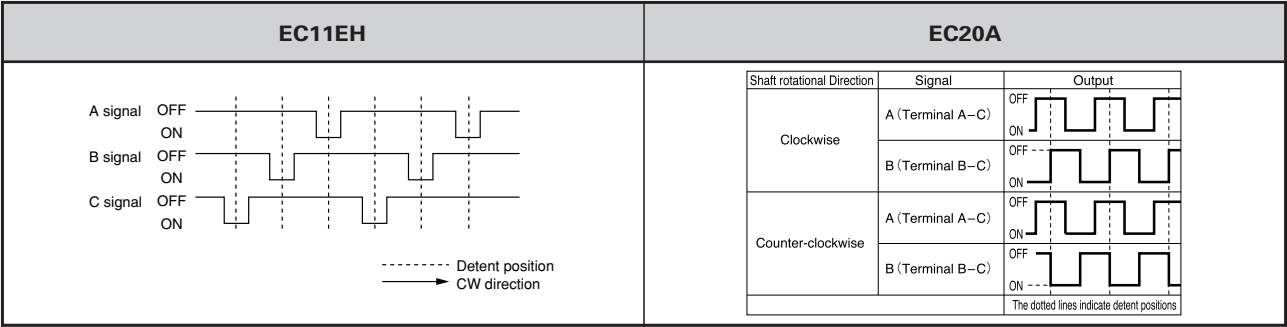
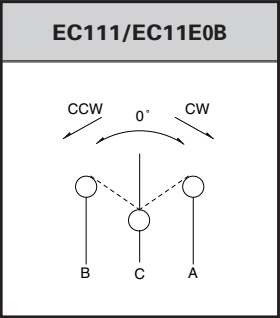
- ※marked specification is only applicable to EC11E152U402.
- marks in "Available for automotive use" indicate that some of the series products can work at the operating temperature range from -40°C to +85°C.

Product Specifications

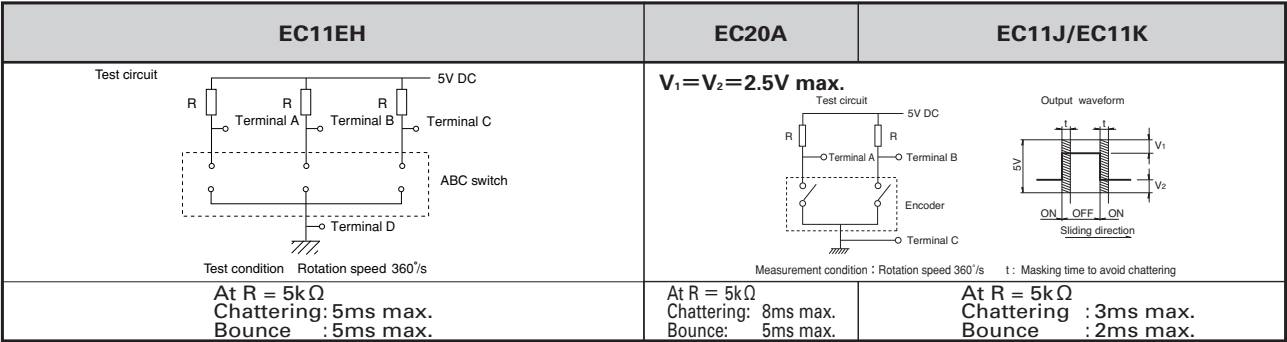
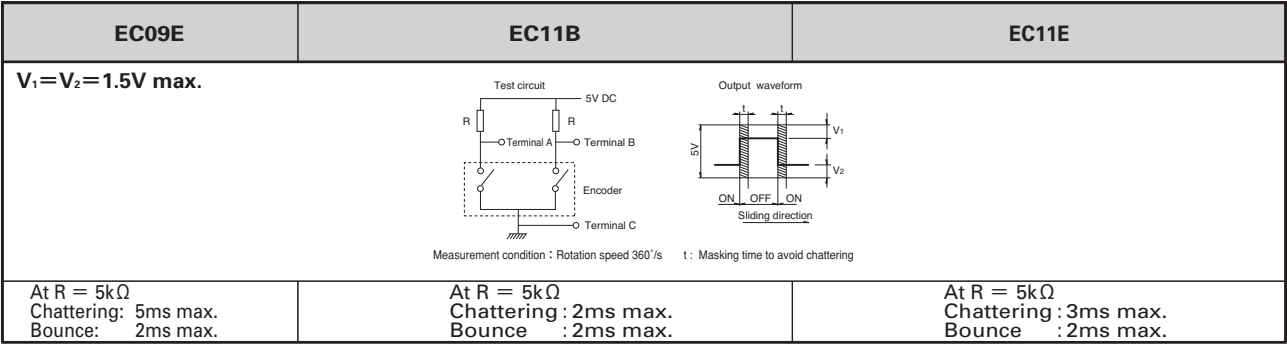
Output Wave



Circuit Diagram



Sliding Noise



Attached Parts

EC11B Series

Unit:mm

