

Encoder 9mm Size Metal Shaft Type

EC09E Series



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



Typical Specifications

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

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

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	—	700	EC09E1520406	1
	20					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			
2			

Incremental
Type

Absolute
Type










Automotive
Use

Notes

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

List of Varieties

Type		Metal shaft								
		9mm size		11mm size						
Series		EC09E	EC11B	EC11E		EC111	EC11EH			
Photo										
Output		Incremental				Self-return switch		ABC		
Outline specifications	Shaft types	Single-shaft			Dual-shaft		Single-shaft			
	Operating direction	Vertical	Horizontal		Vertical					
	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)								
	Optional functions	—			Push-lock mechanism Without detent		—			
Changeover angle	—				17 to 40°		—			
Dimensions (mm)	W	9.5		11.7						
	D	—		13.8	12		13	12		
	H	4.5	5.5	4.5	8.5	5		4.5		
Soldering	Manual soldering	350°C max. 3s max.								
	Dip soldering	260±5°C, 3±1s		260±5°C, 5±1s						
Operating temperature range		-40°C to +85°C								
Maximum operating current (Resistive load)		10mA								
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.220								
	Sliding noise	Please see P.220								
	Insulation resistance	100MΩ min. 250V DC								
	Voltage proof	300V AC for 1minute								
Mechanical performance	Rotational torque	—		7 ⁺³ / ₄ mN·m		—	3~30mN·m		—	
	Detent torque	8±5mN·m	12±7mN·m	10±7mN·m		—		10±7mN·m		
	Push-pull strength	100N								
Environmental performance	Cold	-40±3°C for 240h								
	Dry heat	+85±3°C for 240h								
	Damp heat	60±2°C, 90 to 95%RH for 240h								
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Detector

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TypeAbsolute
Type

Push-on Switch Specifications

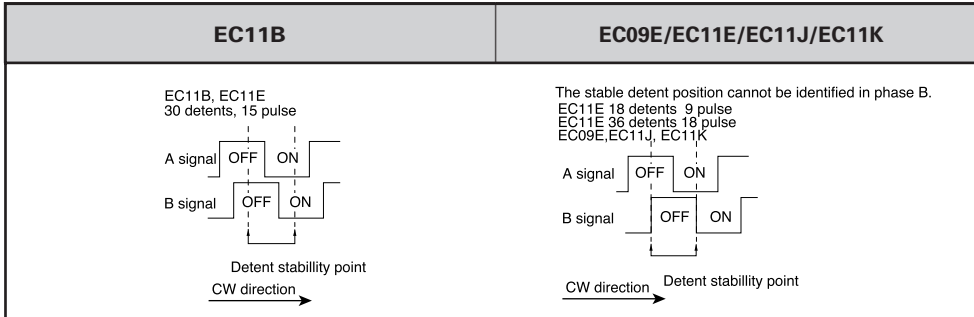
Items	EC09E		EC11B		EC11E		EC111		EC11EH	
Contact arrangement	Single pole and single throw (Push-on)									
Travel (mm)	0.5±0.3	1.5±0.5	0.5 ^{+0.4} / _{-0.3}	1.5±0.5	0.5±0.3	1.5 ^{+0.5} / _{8±0.8} ※	0.5±0.3	1.5±0.5	0.5 ^{+0.4} / _{-0.3}	1.5±0.5
Operating force (N)	6 ^{+2.5} / ₋₂	4±2	6±3	5±2	6 ^{+2.5} / ₋₂	4 ⁺² / _{8 max.} ※	6 ^{+2.5} / ₋₂	4±2	6±2.5	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.			

Note

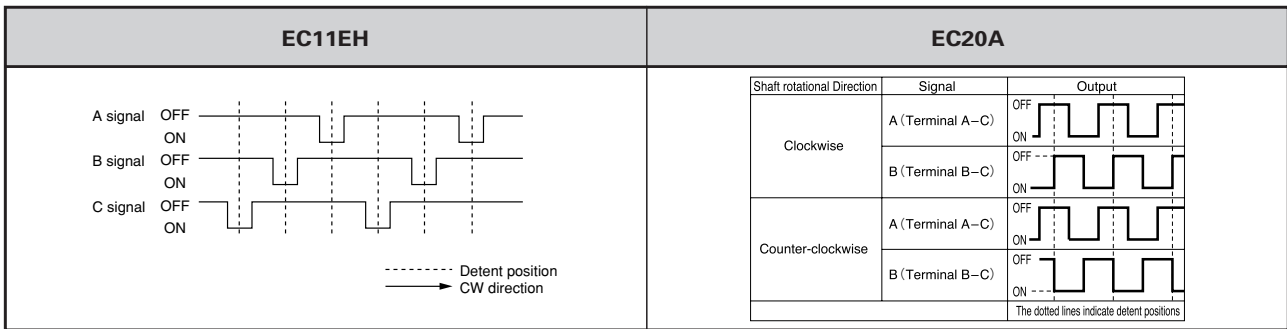
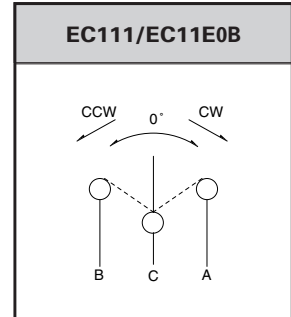
※marked specification is only applicable to EC11E152U402.

Product Specifications

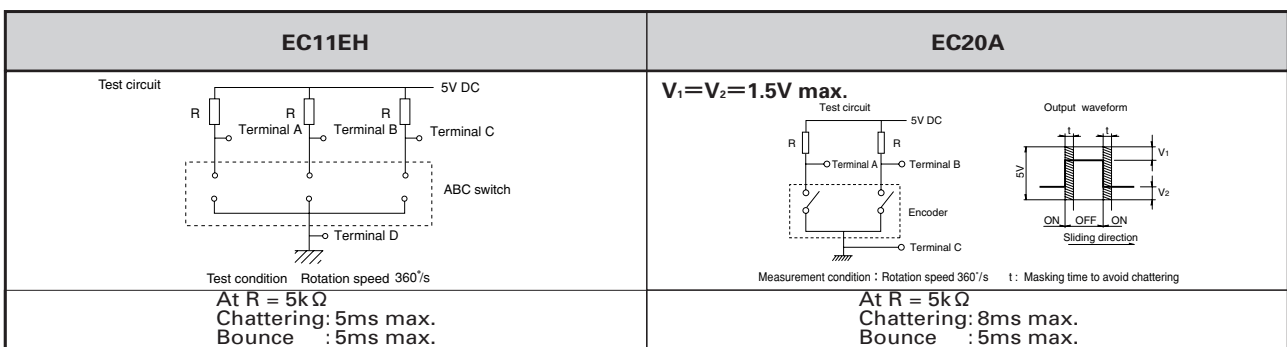
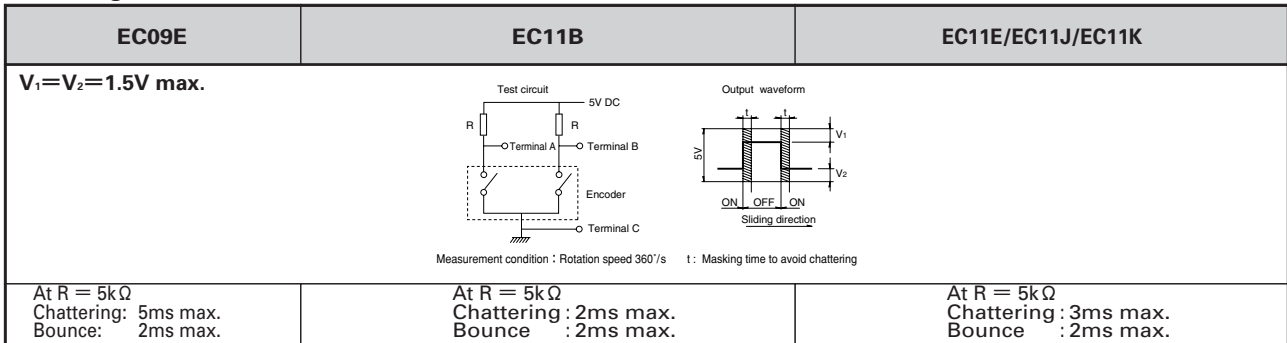
Output Wave



Circle Diagram



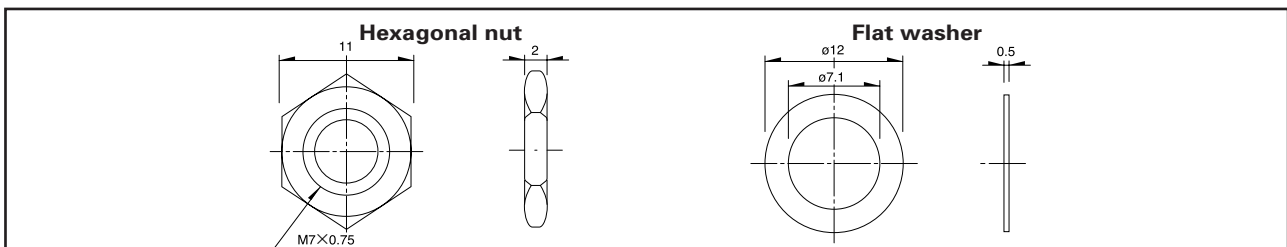
Sliding Noise



Attached Parts

EC11B Series

Unit:mm



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