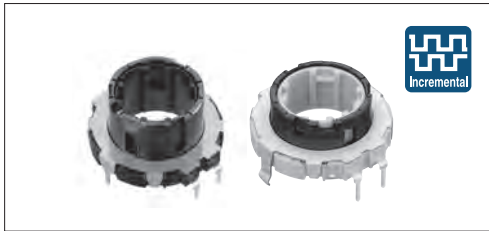


EC21A EC21C

21 mm Size Ring Type

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



Typical Specifications

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

Product Line

Mounting method	Actuator length (mm)	Detent torque (mN·m)	Number of detent	Number of pulse	Minimum order unit (pcs.)		Product No.	No.
					Japan	Export		
Dip	9	7±5	30	15	600	1,200	EC21A1540401	1
		16±7					EC21A1520401	
	15	16±7	18	9	240	480	EC21A0920401	2
		12±5	30	15	600	1,200	EC21A1520407	3
Reflow	12	17±8 (Initial), 12± $\frac{7}{4}$ (After reflow)	30	15	640	640	EC21A0950402	4
							EC21C1520402	5

Packing Specifications

Tray

Product No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case /export packing	
EC21A0920401	240	480	375×285×223
EC21A1520401 EC21A1540401	600	1,200	508×364×192
EC21A1520407 EC21A0950402	600	1,200	540×360×290
EC21C	640	640	400×310×185

Dimensions

Unit:mm


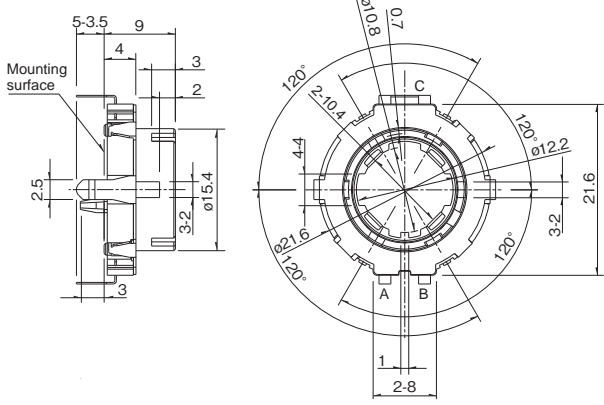
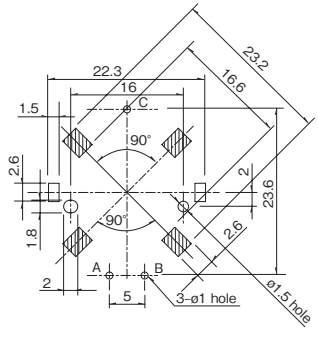

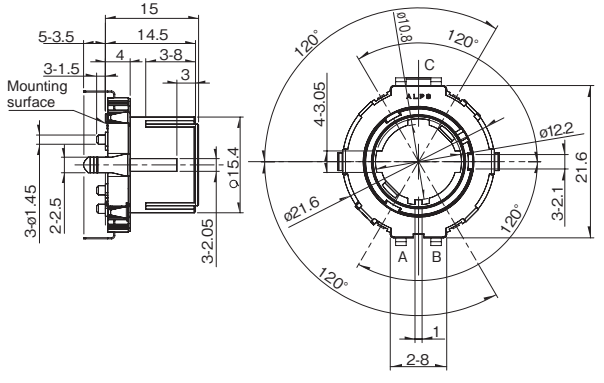
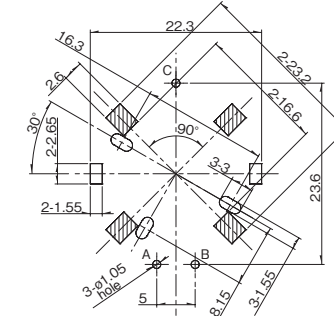

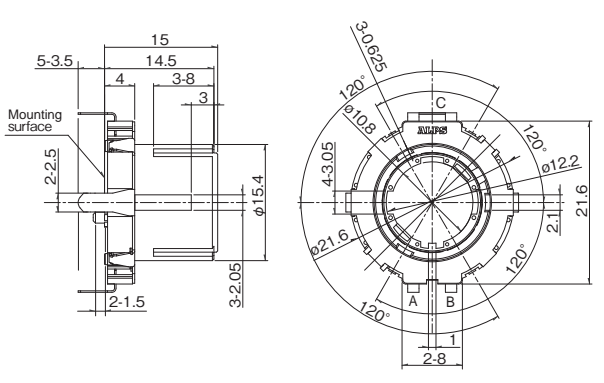
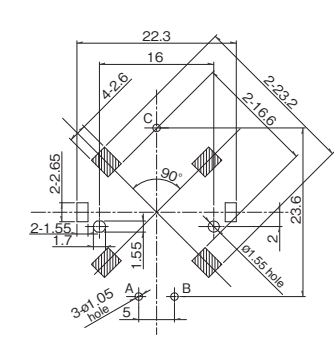

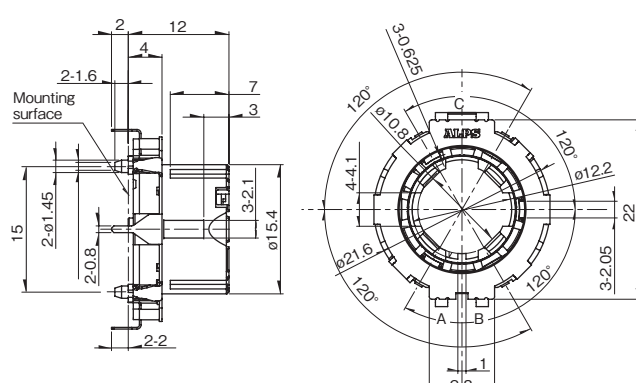
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1	<p>EC21A Actuator length 9mm 15 pulse/30 detent</p>		<p>Shaded area: Wiring prohibited area</p>

EC21A EC21C

21 mm Size Ring Type

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
2	<p>EC21A Actuator length 9mm 9 pulse/18 detent</p> 		 <p>Shaded area: Wiring prohibited area</p>
3	<p>EC21A Actuator length 15mm 15 pulse/30 detent</p> 		 <p>Shaded area: Wiring prohibited area</p>
4	<p>EC21A Actuator length 15mm 9 pulse/18 detent</p> 		 <p>Shaded area: Wiring prohibited area</p>
5	<p>EC21C Reflow type Actuator length 12mm 15 pulse/30 detent</p> 		

Encoders

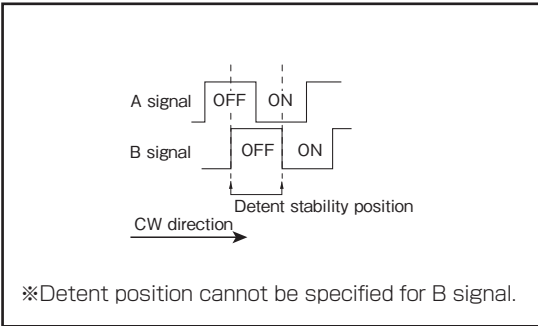
Metal Shaft

Insulated Shaft

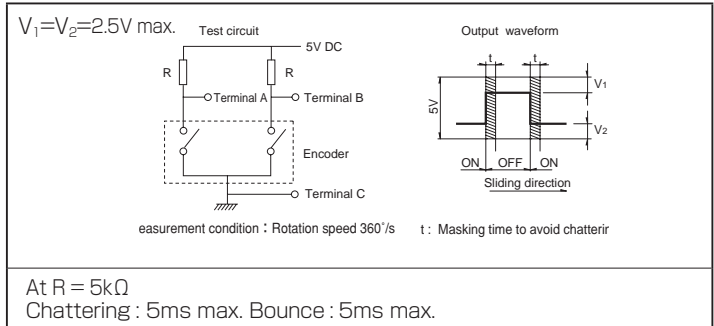
Through Shaft Type









Ring Type

■ Output Wave



■ Sliding Noise



Type		Through shaft type			Ring type	
		5mm size		10mm size	21mm size	
Series		EC05E		EC10E	EC21A	EC21C
Photo						
Output		Incremental (Two phase A and B)				
Shaft types		Through shaft type			Ring type	
Control part orientation		Vertical	Horizontal	Horizontal	—	—
Number of pulse / Number of detent		12/12		12/24 12/12	9/18 15/30	15/30
Features		Surface mount type		—	—	—
Dimensions (mm)	W	5.7	7.5	9.8	21.6	22
	D	6	3.3	4.4		21.6
	H	2.7	7.25	10.6/12.6/14.6	4	
Operating temperature range		-30°C to +85°C		-5°C to +45°C -40°C to +85°C (For Automotive)	-40°C to +85°C	
Operating life		100,000 cycles			50,000 cycles	
Automotive use		—		○	●	●
Life cycle (availability)						
Electrical performance	Rating	0.55mA 5.5V DC		1mA 5V DC	10mA 5V DC	
	Max./min. operating current (Resistive load)	0.55mA / —		—	10mA / 1mA	
	Insulation resistance	50MΩ min. 50V DC			100MΩ min. 250V DC	
	Voltage proof	50V AC for 1 minute			300V AC for 1minute or 360V AC for 2s	300V AC for 1minute or 360V AC for 1s
Mechanical performance	Rotational torque (Without detent)	—		—	—	—
	Detent torque	1.6±1.3mN·m		5±3mN·m 6±3mN·m	7±5mN·m 12±5mN·m 16±7mN·m	17±8mN·m (Initial) 12±7mN·m (After reflow)
	Push-pull strength	—		—	100N	
Shaft configuration		Through shaft type			Ring type	
Terminal type		Reflow		Insertion		
Switch Specifications	Switch type	—		—	—	—
	Contact arrangement	—		—	—	—
	Travel (mm)	—		—	—	—
	Operating force (N)	—		—	—	—
	Rating	—		—	—	—
	Contact resistance	—		—	—	—
	Operating life	—		—	—	—
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Notes

- The operating temperature range for automotive applications can be raised upon request. Please contact us for details.
- Indicates applicability to all products in the series, while ○ indicates applicability to some products in the series.