

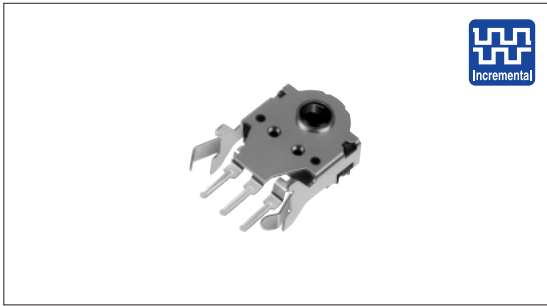
Encoder 10mm Size Hollow Shaft Type

EC10E Series



A series of compact and long-life encoders with unique hollow shaft design.

- Detector
- Push
- Slide
- Rotary
- Encoders



Typical Specifications

Items	Specifications
Rating	1mA 5V DC
Operating life	100,000cycles
Operating temperature range	-30°C to +85°C

- Power
- Dual-in-line Package Type
- TACT Switch™
- Custom-Products

Product Line

Mount height (mm)	Detent torque (mN·m)	Number of detent	Number of pulse	Operating direction	Minimum order unit (pcs.)	Product No.
7	5±3	24	12	Horizontal	1,600	EC10E1220505
9						EC10E1220501
11						EC10E1220503

Packing Specifications

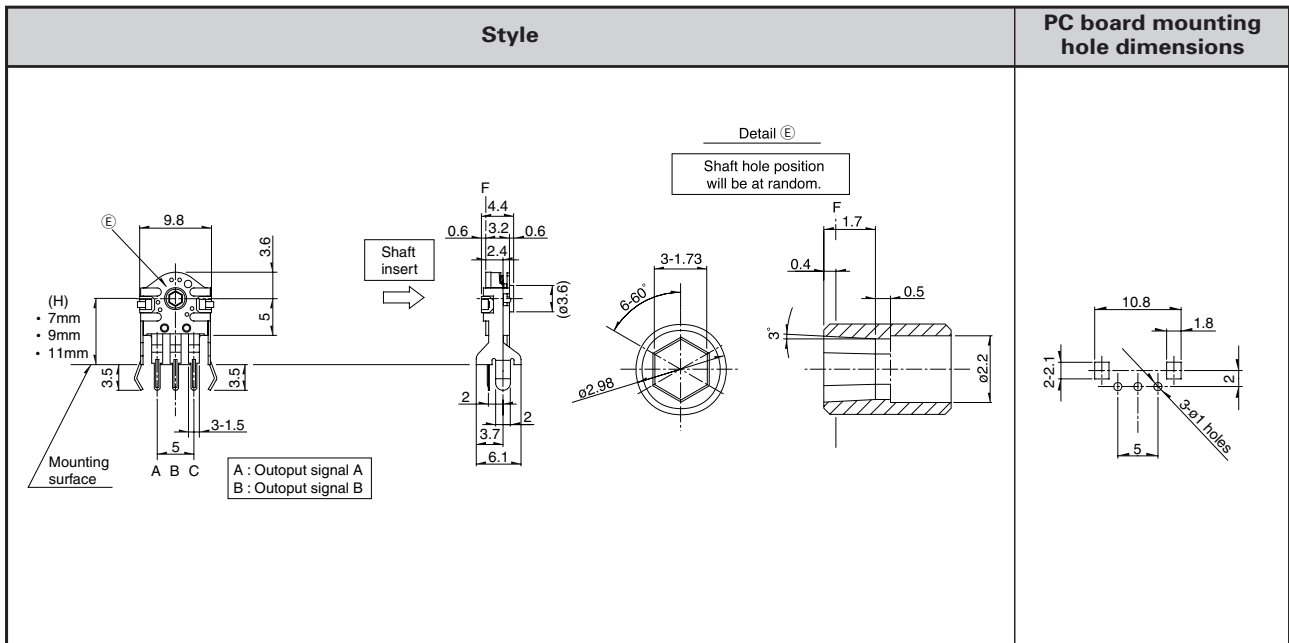
Bulk

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
1,600	3,200	270×360×155

- Incremental Type
- Absolute Type

Dimensions




Unit:mm



Notes

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

List of Varieties

Type	Hollow shaft		Magnetic	
	5mm size	10mm size	20mm size	
Series	EC05E	EC10E	EM20B	
Photo				
Output	Incremental			
Outline specifications	Shaft types	Hollow shaft		Single-shaft
	Operating direction	Vertical/Horizontal	Horizontal	Vertical
	Number of pulse/ Number of detent	12/12	12/24	40/40
	Push switch (Travel mm)	Without		Without/With(0.5)
	Optional functions	_____		Display function
	Changeover angle	_____		
Dimensions (mm)	W	5.7	9.8	20
	D	2.7	4.4	22.25
	H	7.3	12.6	13
Soldering	Manual soldering	350°C max. 3s max.		
	Dip soldering	—	260±5°C, 3±1s	260°C max. 3s max.
Operating temperature range	Please see P.226			
Maximum operating current (Resistive load)	-30°C to +85°C		-10°C to +70°C	
Electrical performance	Output signal	0.55mA	1mA	—
	Output phase	Output of A and B signals, proportionate to phase difference		V _{HI} : +4.0V min. V _{LO} : 0.5V max. (I _{sink} =5mA)
	Sliding noise	_____		A,B (Square wave)
	Insulation resistance	50MΩ min. 50V DC		100MΩ min. 250V DC
	Voltage proof	50V AC for 1minute		300V AC for 1minute
Mechanical performance	Rotational torque	_____		7mN·m max.
	Detent torque	1.6±1.3mN·m	5±3mN·m	8±5mN·m
	Push-pull strength	_____		100N
	Vibration	_____		
Environmental performance	Cold	-40±3°C for 240h		-30±3°C for 240h
	Dry heat	85±3°C for 240h		80±3°C for 240h
	Damp heat	40±2°C, 90 to 95%RH for 240h		40±2°C, 90 to 95%RH for 240h
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Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

Incremental
Type

Absolute
Type

Push-on Switch Specifications

Items	EM20B
Contact arrangement	Single pole and single throw (Push-on)
Travel (mm)	0.5 ^{+0.4} / _{-0.3}
Operating force (N)	6±3
Rating	0.1A 5V DC
Contact resistance	100mΩ max for initial period;200mΩ max after operating life
Operating life	25,000times min.

- Encoders Attached Parts220,234
- Encoders Cautions235, 236

Note

※ The operating temperature range for automotive applications can be raised upon request. Please contact us for details.