

Slim Encoder with Diameter of 50 mm

E6C3-AB5B 8P/R 2M

Rotary Encoder, Absolute, External Diameter: 50 dia., PNP open collector, 8 P/R, 12 to 24 VDC, BCD, Pre-wired model, 2 m



Image

Ratings / Performance

As of July 25, 2024

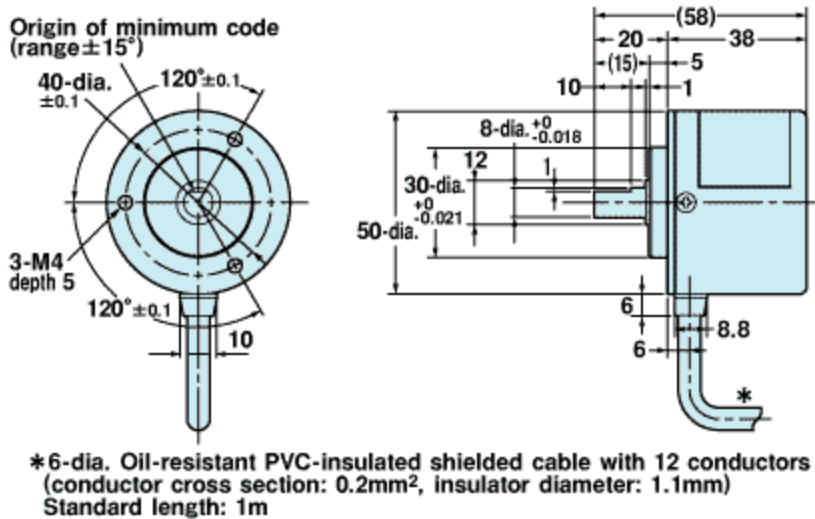
Categorise		Absolute Shaft model
Diameter		50 mm dia.
Power supply voltage		12 to 24 VDC (-10% to +15%) Ripple (p-p) 5% max.
Current consumption		70 mA max.
Resolution		8 P/R
Inrush current		Approx. 6 A (0.8 ms)
Output code		BCD
Control output	Output type	PNP open collector
	Source current	35 mA max.
	Residual voltage	0.4 V max. (at source current 35 mA)
Logic		Positive logic (high = 1, low = 0)
Direction of rotation		Output code increases for CW (as viewed from end of shaft)
Positioning signal		Equipped
Strobe signal		Equipped
Parity signal		None
Max. response frequency		20 kHz
Starting torque		Room temperature: 10 mN.m max. Low temperature: 30 mN.m max.
Moment of inertia		2.3 x 10 <sup>-6</sup> kg.m <sup>2</sup> max.

Shaft loading	Radial: 80 N Thrust: 50 N
Max. permissible rotation	5000 r/min
Ambient temperature	Operating: -10 to 70 °C (with no icing) Storage: -25 to 85 °C (with no icing)
Ambient humidity	Operating: 35 to 85 % (with no condensation) Storage: 35 to 85 % (with no condensation)
Insulation resistance	Between charged parts and the case: 20 MΩ or higher (500 VDC megger)
Dielectric strength	Between charged parts and the case: 500 VAC 50/60 Hz 1 min
Vibration resistance	Destruction: 10 to 500 Hz, 2-mm or 150 m/s <sup>2</sup> double amplitude for 11 min 3 times each in X, Y, and Z directions
Shock resistance	Destruction: 1000 m/s <sup>2</sup> for 3 times each in X, Y, and Z directions
Degree of protection	IEC: IP65 Company standard: Oil resistance
Connection method	Pre-wired models (Cable length: 2 m)
Material	Case: Aluminum Main Unit: Aluminum Shaft: SUS303
Accessories	Instruction manual

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Dimensions

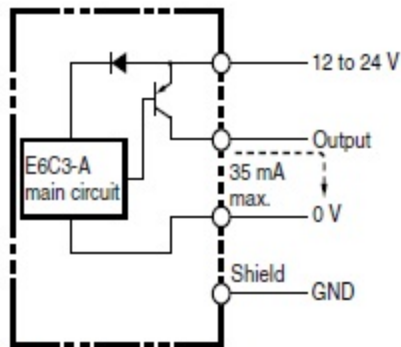
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Output circuit diagram

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Note: The circuit is the same for all bit outputs.  
Each E6C3-A Rotary Encoder has one main circuit.

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Connected specification chart

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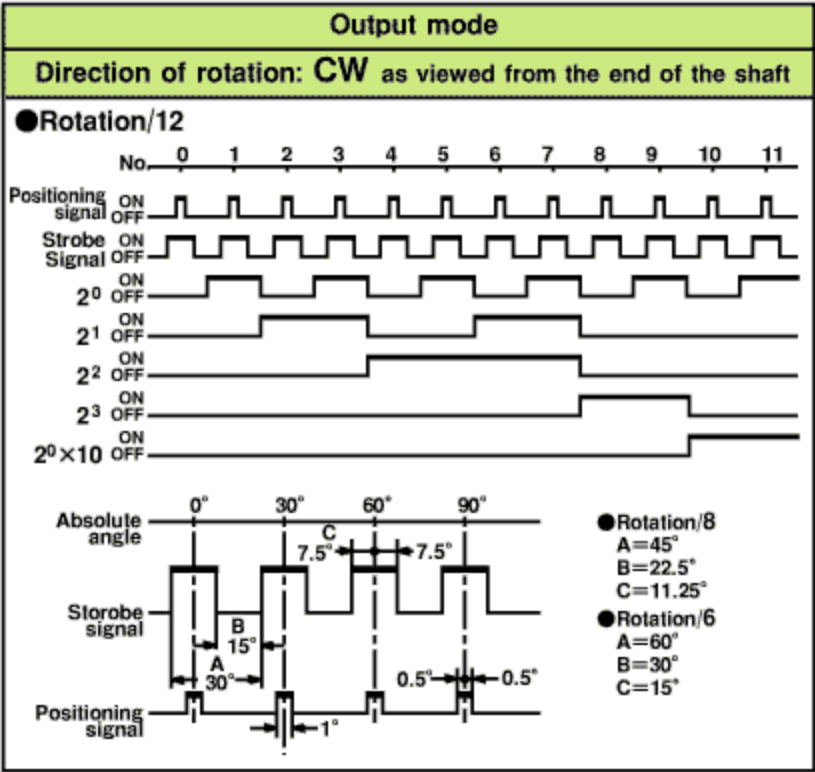
Wire color	Model	
	E6C3-AB5C/-AB5B	
	Output signal	
	3-bit (6 or 8)	5-bit (12)
Brown	$2^0$	$2^0$
Orange	$2^1$	$2^1$
Yellow	$2^2$	$2^2$
Green	Not connected	$2^3$
Blue	Not connected	$2^0 \times 10$
Purple	Not connected	Not connected
Gray	Positioning	Positioning
White	Strobe	Strobe
Pink	Not connected	Not connected
Light blue	Not connected	Not connected
---	Shield (ground)	
Red	12 to 24 VDC	
Black	0 V (common)	

Note: Normally connect GND to 0 V or to an external ground.

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Timing chart

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