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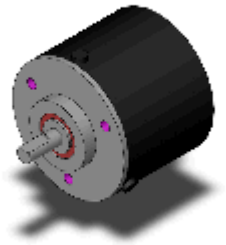
Slim Incremental 50-mm-dia. Rotary Encoder

E6C2-CWZ6C 10P/R 2M

Incremental, Resolution 10 P/R, 50 mm-dia., Shaft model, NPN open collector, Pre-wired models (2 m)



Image

Encoding method	Incremental Shaft model
Resolution	10 P/R
Output phases	A, B and Z
Control output	NPN open collector
Connection method	Pre-wired models (Cable length: 2 m)

Ratings / Performance

As of December 14, 2021

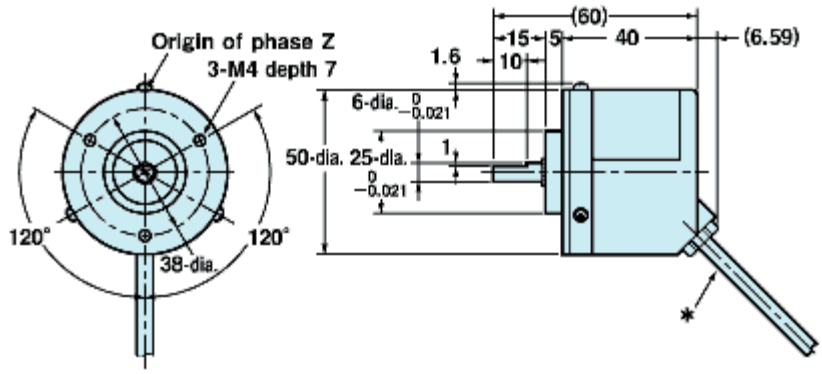
Categorise		Incremental Shaft model
Diameter		50 mm dia.
Power supply voltage		5 to 24 VDC (-5% to +15%) Ripple (p-p) 5% max.
Current consumption		80 mA max.
Resolution		10 P/R
Inrush current		Approx. 9 A (0.3 ms)
Output phases		A, B and Z
Control output	**Output type**	NPN open collector
	Load power supply voltage	30 VDC max.
	Sink current	35 mA max.
	Residual voltage	0.4 V max. (at sink current 35 mA)
Starting positional point		Equipped
Max. response frequency		100 kHz
Phase difference on output		90±45 ° between A and B (1/4 T ± 1/8 T)
Rise and fall times of output		1 μs max. (Cable length: 2 m, output voltage: 5 V, load resistance: 1 kΩ)
Starting torque		10 mN.m max.
Moment of inertia		3 x 10^{-7} kg.m^2 max.
Shaft loading		Radial: 50 N Thrust: 30 N
Max. permissible rotation		6000 r/min
Protective circuit		Output short-cut protection Power supply reverse polarity protection
Ambient temperature		Operating: -10 to 70 ℃ (with no icing) Storage: -25 to 85 ℃ (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: 100 MΩ min. (at 500 VDC)
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^2 double amplitude for 11 min 3 times each in X, Y, and Z directions
Shock resistance	Destruction: 1000 m/s^2 for 3 times each in X, Y, and Z directions
Degree of protection	IEC: IP64 Company standard: Oil resistance
Connection method	Pre-wired models (Cable length: 2 m)
Material	Case: Zinc alloy Main Unit: Aluminum Shaft: SUS420J2
Weight	Package: Approx. 400 g
Accessories	Instruction manual

As of December 14, 2021

Dimensions

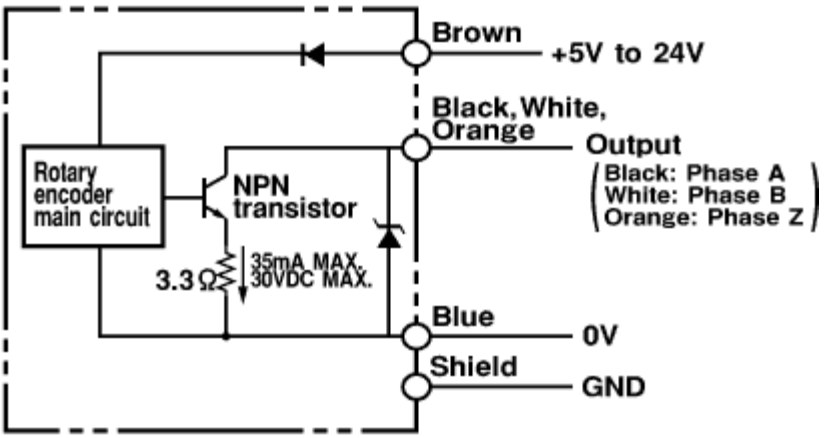
As of December 14, 2021



As of December 14, 2021

Output circuit diagram

As of December 14, 2021



*1. The shielded cable outer core is not connected to the inner area or the case.
2. Normally, connect GND to 0V or to an external ground.

As of December 14, 2021

Connected specification chart

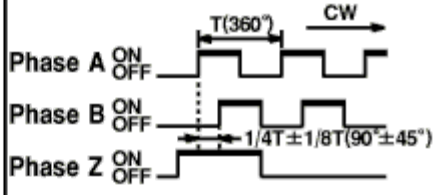
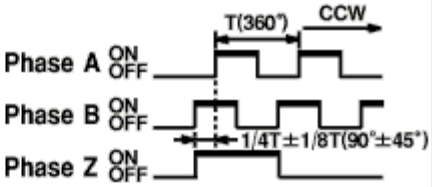
As of December 14, 2021

Color	Terminal
Brown	Vcc
Black	Phase A
White	Phase B
Orange	Phase Z
Blue	0V(COMMON)
Shield	GND

As of December 14, 2021

Timing chart

As of December 14, 2021

Output phase	Direction of rotation	Output mode
Phase A Phase B Phase Z	**CW** as viewed from the end of the shaft	
	CCW as viewed from the end of the shaft	

∗CW direction: Phase A is 1/4±1/8T faster than phase B.
CCW direction: Phase A is 1/4±1/8T slower than phase B.

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