

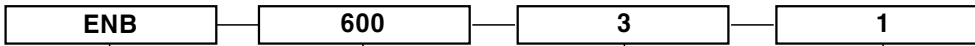
## ±50mm/shaft type the encoder (INCREMENTAL TYPE)

### ■ Features

- Detection of angle, position, speed, etc.
- Wide power voltage 5 to 24VDC ±5%.
- Low power consumption



### ■ Ordering information



Series	Pulses/revolution	Output phase	Output method	Power supply
φ50mm Shaft type the Encoder (INCREMENTAL Type)	1, 2, 5, 10, 15, 20, 25, 30, 40, 50, 60, 100, 75, 120, 150, 200, 240, 300, 360, 400, 500, 512, 600, 700, 1000, 1024, 1200, 2000, 2048	2:A, B phase 3:A,B,Z phase(standard) 4:A,B,Ā,B̄ 6:A,B,Z,Ā,B̄,Z̄	1:Totem Pole output 2:NPN open collector output 3:Voltage output L:Line driver output	1, 2:5 to 24VDC ±5% 3:5VDC, 12VDC, 24VDC ±5%

### ■ Specification

Item		φ50mm Shaft type the Encoder(INCREMENTAL TYPE)	
Model	Totem Pole output	<b>ENB-□□□-2-1, ENB-□□□-3-1</b>	
	NPN open collector output	<b>ENB-□□□-2-2, ENB-□□□-3-2</b>	
	Voltage output	<b>ENB-□□□-2-3, ENB-□□□-3-3</b>	
	Line driver output	<b>ENB-□□□-4-L, ENB-□□□-6-L</b> (※)	
Pulses/revolution		1,2,5,10,15,20,25,30,40,50,60,75,100,120,150,200,240,300,360,400,500,512,600,700,1000,1024,1200,2000,2048	
Electrical specification	Output phase	A phase, B phase, Z phase(Line driver : A, B, Z, Ā, B̄, Z̄) ※1,2,10,20,25 P/R type has no output Z phase only	
	Output of phase difference	Phase difference between A and B phase: $\frac{T}{4} \pm \frac{T}{8}$ (T=1cycle of A phase) ★(Note 1)	
	Control output	Totem pole output	Low ⇨ load current:Max. 30mA, residual voltage:Max. 0.4V High ⇨ load current:Max. 10mA, output voltage:Min. (power supply-1.5)V
		NPN open collector output	Load voltage:Max. 30V, load current:Max. 30mA, residual voltage:Max. 0.4V
		Line driver output	Low ⇨ load current:Max. 20mA, residual voltage:Max. 0.5V High ⇨ load current:Max. 20mA, output voltage:Min. (power supply 2.5)V
	Response time (rise & fall)	Totem pole output	Max. 1μs (cable:2m, at Isink=10mA)
		NPN open collector output	Max. 1μs (cable:2m, at Isink=30mA)
		Line driver output	Max. 1μs (cable:1m, at Isink=30mA)
	Max.response frequency	100KHz	
	Power supply	5 to 24VDC ±5%(ripple P-P:Max. 3%)	
Current consumption	Max. 60mA(disconnection of the load)		
Connection	Cable connection		
Mechanical specification	Starting torque	Max. 250gf · cm(24500 μN · m)	
	Moment of inertia	Max. 80g · cm <sup>2</sup> (8 × 10 <sup>-6</sup> kg · m <sup>2</sup> )	
	Shaft loading	Radial:10Kg, Thrust:2.5Kg	
	Deviation of shaft position	Radial:Max. 0.1mm, Thrust:Max. 0.2mm	
	Mechanical revolution(rpm)	5000rpm★(Note 2)	
Insulation resistance	Min. 50MΩ (at 500VDC)		
Dielectric strength	500VAC 50/60Hz for 1 minute		
Vibration	1.5mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours		
Shock	Max. 75G		
Ambient temperature	Operating: -10 to 70°C (non-freezing condition), storage: -25 to 85°C		
Ambient Humidity	Operating:35 to 85%RH, storage:35 to 90%RH		
Protection	IP50(IEC specification)		
Cable	5P, φ5mm, length:2m, shield cable		
Weight	About 308g		
Accessories	φ8mm coupling, bracked		
Approval	<b>CE</b> (except models of ※ mark)		

※Option except above spec. & rate.

※The weight of above chart is not weight.

★(note1) phase difference between A and B phase for 1 pulse Encoder is  $\frac{T}{4} \pm \frac{T}{8}$  (T=1cycle of A phase)

★(note2) Max. response frequency(rpm) =  $\frac{\text{Max. rpm}}{\text{Revolution}} \times 60$  (but max. rpm ≤ max. allowable rotation) □

