

E40S

∅ 40mm/shaft type encoder (INCREMENTAL TYPE)

■ Features

- ∅ 40mm/miniature shaft type encoder.
- Wide application by miniature size.
- The moment of inertia for the shaft.
- Wide power voltage 5 to 24VDC ±5%.
(5VDC ±5% at line driver type)
- NPN open collector output.
(Optional:Line driver output)



■ Ordering information

E40S	100	3	2	
Series	Pulses/Revolution	Output phase	Output method	Power supply
∅ 40mm/ Shaft type Encoder (INCREMENTAL TYPE)	25, 60, 100, 192, 200, 360, 400, 500, 512, 600, 1000, 1024, 1200, 2000, 2048	3:A,B,Z Phase 6:A, B, Z, \bar{A} , \bar{B} , \bar{Z}	2:NPN open collector output 3:Voltage output L:Line Driver output	2:5 to 24VDC ±5% 3:DC5V, DC12V, DC24V ±5% L:5VDC ±5%

■ Specification

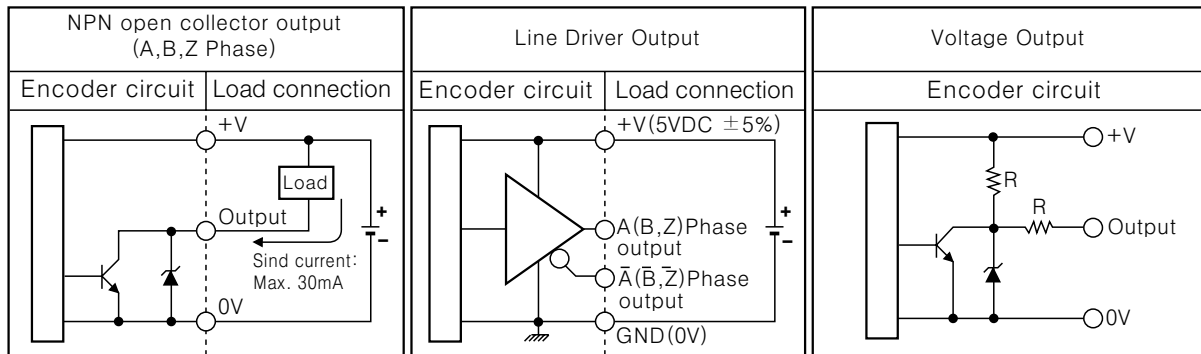
Item		∅ 40mm/Shaft type encoder(INCREMENTAL TYPE)	
Model	NPN open collector output	E40S-□-3-2	
	Voltage output	E40S-□-3-3	
	Line driver output	E40S-□-6-L (※)	
Pulses/Revolution		25, 60, 100, 192, 200, 360, 400, 500, 512, 600, 1000, 1024, 1200, 2000, 2048	
Electrical specification	Output phase	A Phase, B Phase, Z Phase(Line driver : A, B, Z, \bar{A} , \bar{B} , \bar{Z})	
	Output of phase difference	Output between A and B phase: $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase) ★(Note1)	
	Control output	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. 2.5V
	Rise & Fall	NPN open collector output	Max. 1μs (Cable:1m, at Isink = 30mA)
		Line driver output	Max. 0.1μs (Cable:1m, at Isink = 30mA)
	Max.Response frequency	100KHz	
	Power supply	5 to 24VDC ±5%(Ripple P-P:Max. 3%), Line Driver output : DC5V ±5%(Ripple P-P:Max. 3%)	
	Current consumption	Max. 60mA(disconnection of the load), Line Driver Max. 85mA	
	Connection	Cable connection	
Mechanical specification	Starting torque	Max. 10gf · cm(980 μ · m)	
	Moment of inertia	Max. 10g · cm ² (1×10 ⁻⁶ Kg · m ²)	
	Shaft loading	Radial:2Kg, Thrust:1Kg	
	Deviation of shaft position	Radial:Max. 0.1mm, Thrust:Max. 0.2mm	
Mechanical revolution(rpm)	5000rpm ★(Note2)		
Insulation resistance	Min. 50MΩ (at 500VDC)		
Dielectric strength	500VAC 50/60Hz for 1 minute		
Vibratio	1.5mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours		
Shock	Max. 50G		
Ambient temperature	-10 to 70℃ (non-freezing condition), line driver output type:0 to 70℃, Storage:-25 to 85℃		
Ambient humidity	35 to 85%RH, Storage:35 to 90%RH		
Protection	IP50(IEC Specification)		
Cable	5P, ∅ 5mm,Length:1m, Shield cable (Line Driver output : 8P)		
Weight	About 110g		
Accessory	∅ 6mm coupling		
Approval	CE (except models of ※ mark)		

※Option except above spec. & rate.

※The weight of above chart is not weight.

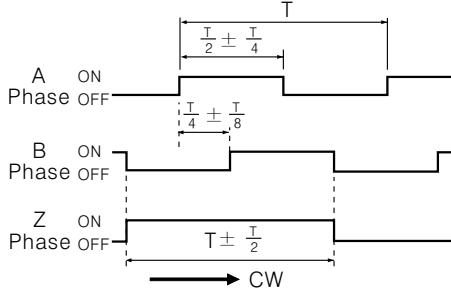
★(note1) phase difference between A and B phase for 1 pulse Encoder is $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase)
 ★(note2) Max. response frequency(rpm)= $\frac{\text{Max. rpm}}{\text{Revolution}} \times 60$ (but max. rpm ≤ max. allowable rotation) □

Control output circuit

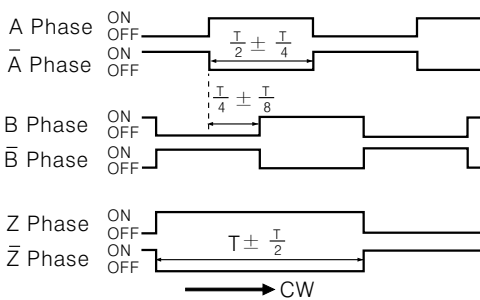


Output waveform

● NPN open collector / voltage output

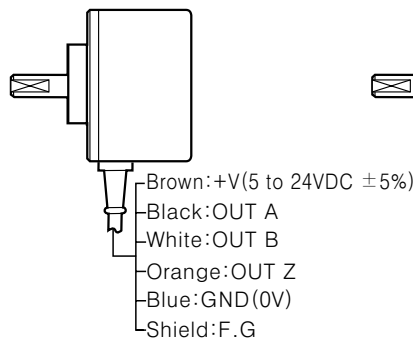


● Line Driver output

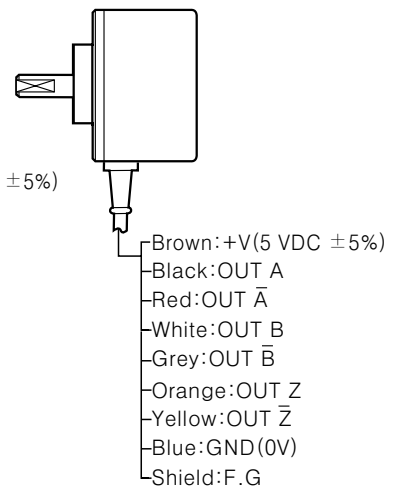


Connection

● NPN open collector output

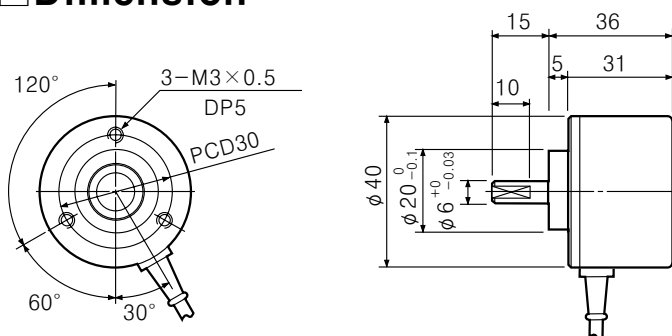


● Line driver output

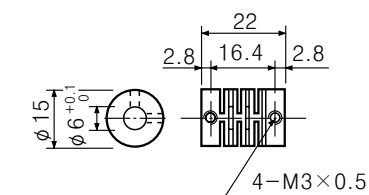


*Non-using wires must be insulated.

Dimension



● Coupling



Unit:mm