


# E100H Series

## Diameter ø100mm Hollow shaft type Incremental Rotary Encoder

### ■ Features

- Great environmental resistance
- High stability of output
- Exclusive for Elevator

 Please read "Caution for your safety" in operation manual before using.



### ■ Ordering information

<b>E100H</b>	<b>35</b>	<b>10000</b>	<b>6</b>	<b>L</b>	<b>5</b>
Series	Shaft diameter	Pulse/1Revolution	Output phase	Output	Power supply
Diameter ø100mm hollow shaft type	ø35mm	512, 1024, 10000	3 : A, B, Z 6 : A, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$	T : Totem pole output N : NPN open collector output V : Voltage output L : Line driver output(※)	5 : 5VDC ±5% 24 : 12-24VDC ±5%

### ■ Specifications

Item	Diameter ø100mm hollow shaft type of incremental rotary encoder		
Resolution(P/R) <sup>※1</sup>	512, 1024, 10000		
Electrical specification	Output phase	A, B, Z phase (Line driver output A, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$ phase)	
	Phase difference of output	Phase difference between A and B : $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase)	
	Control output	Totem pole output	• Low - Load current:Max. 30mA, Residual voltage : Max. 0.4VDC • High - Load current:Max. 10mA, Output voltage(Power voltage 5VDC):Min. (Power voltage-2.0)VDC, Output voltage(Power voltage 12-24VDC):Min. (Power voltage-3.0)VDC
		NPN open collector output	Load current : Max. 30mA, Residual voltage : Max. 0.4VDC
		Voltage output	Load current : Max. 10mA, Residual voltage : Max. 0.4VDC
		Line driver output	• Low - Load current : Max. 20mA, Residual voltage : Max. 0.5VDC • High - Load current : Max. -20mA, Output voltage(Power voltage 5VDC):Min. 2.5VDC, Output voltage(Power voltage 12-24VDC):Min. (Power voltage-3.0)VDC
	Response time (Rise/Fall)	Totem pole output	Max. 1μs
		NPN open collector output	
		Voltage output	
		Line driver output	
	Max. Response frequency	300kHz	
	Power supply	• 5VDC ±5%(Ripple P-P : Max. 5%) • 12-24VDC ±5%(Ripple P-P : Max. 5%)	
	Current consumption	Max. 80mA(disconnection of the load), Line driver output : Max. 50mA(disconnection of the load)	
	Insulation resistance	Min. 100MΩ(at 500VDC megger between all terminals and case)	
Dielectric strength	750VAC 50/60Hz for 1 minute(Between all terminals and case)		
Connection	Connector type		
Mechanical specification	Starting torque	Max. 300gf·cm(0.03N·m)	
	Moment of inertia	Max. 800g·cm <sup>2</sup> (8×10 <sup>-5</sup> kg·m <sup>2</sup> )	
	Shaft loading	Radial : 5kgf, Thrust : 2.5kgf	
	Max. allowable revolution <sup>※2</sup>	3600rpm	
Vibration	1.5mm amplitude or 300m/s <sup>2</sup> at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours		
Shock	Approx. Max. 75G		
Environment	Ambient temperature	-10 to 70°C, storage : -25 to 85°C	
	Ambient humidity	35 to 85%RH, storage : 35 to 90%RH	
Protection	IP50(IEC standard)		
Cable	ø5, 5-wire, Length : 2m, Shield cable(Line driver output : ø5, 8-wire) (AWG24, Core diameter : 0.08mm, Number of cores : 40, Insulator out diameter : ø1)		
Accessory	Bracket 2EA		
Approval	CE (Except for line driver output)		
Unit weight	Approx. 1400g(approx. 1130g)		

※1: Not indicated type is customizable.

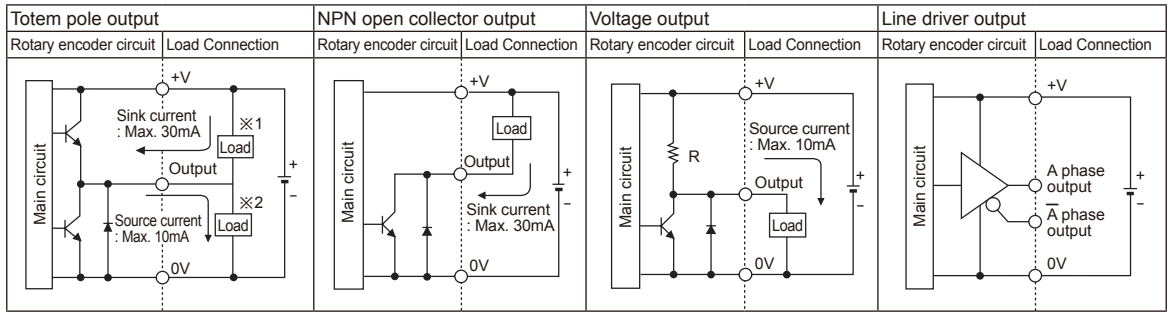
※2: Make sure that. Max response revolution should be lower than or equal to max. allowable revolution when selecting the resolution.

$$[\text{Max. response revolution}(\text{rpm})] = \frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}$$

※3: The weight with packaging and the weight in parentheses is only unit weight. ※Environment resistance is rated at no freezing or condensation.

# Incremental ø100mm Hollow Shaft type

## Control output diagram

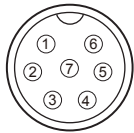


- Totem pole output type can be used for NPN open collector output type(※1) or Voltage output type(※2).
- All output circuits of A, B, Z phase are same. (Line driver output is A,  $\bar{A}$ , B,  $\bar{B}$ , Z,  $\bar{Z}$ )

## Connections

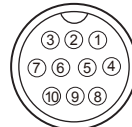
- Totem pole output / NPN open collector output / Voltage output

- Line driver output



SCN-16-7P

Pin No.	Function	Cable color
①	+V	Brown
②	GND	Blue
③	OUT A	Black
④	OUT B	White
⑤	OUT Z	Orange
⑥	F.G.	Shield
⑦	N-C	N.C



SCN-20-10P

Pin No.	Function	Cable color
①	+V	Brown
②	GND	Blue
③	OUT A	Black
④	OUT $\bar{A}$	Red
⑤	F.G.	Shield
⑥	OUT B	White
⑦	OUT $\bar{B}$	Gray
⑧	OUT Z	Orange
⑨	OUT $\bar{Z}$	Yellow
⑩	N-C	N-C

※N-C(Not Connected)

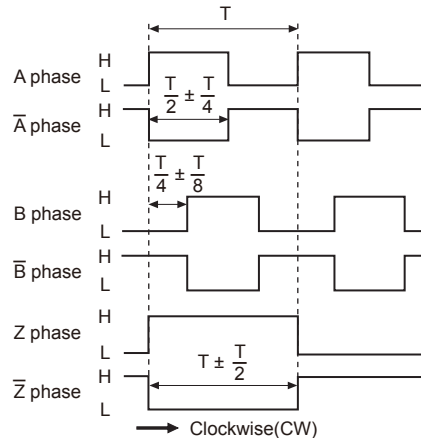
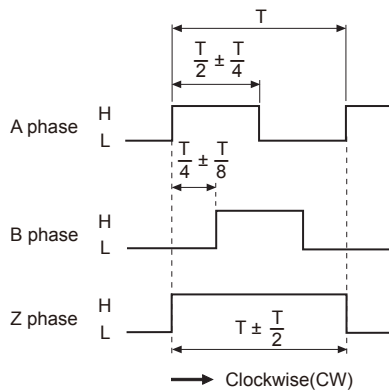
※Unused wires must be insulated.

※The metal case and shield cable should be grounded(F.G.).

## Output waveform

- Totem pole output / NPN open collector output / Voltage output

- Line driver output



※CW : Right turn as from the shaft

(A) Photo electric sensor

(B) Fiber optic sensor

(C) Door/Area sensor

(D) Proximity sensor

(E) Pressure sensor

(F) Rotary encoder

(G) Connector/Socket

(H) Temp. controller

(I) SSR/ Power controller

(J) Counter

(K) Timer

(L) Panel meter

(M) Tacho/ Speed/ Pulse meter

(N) Display unit

(O) Sensor controller

(P) Switching mode power supply

(Q) Stepper motor & Driver&Controller

(R) Graphic/ Logic panel

(S) Field network device

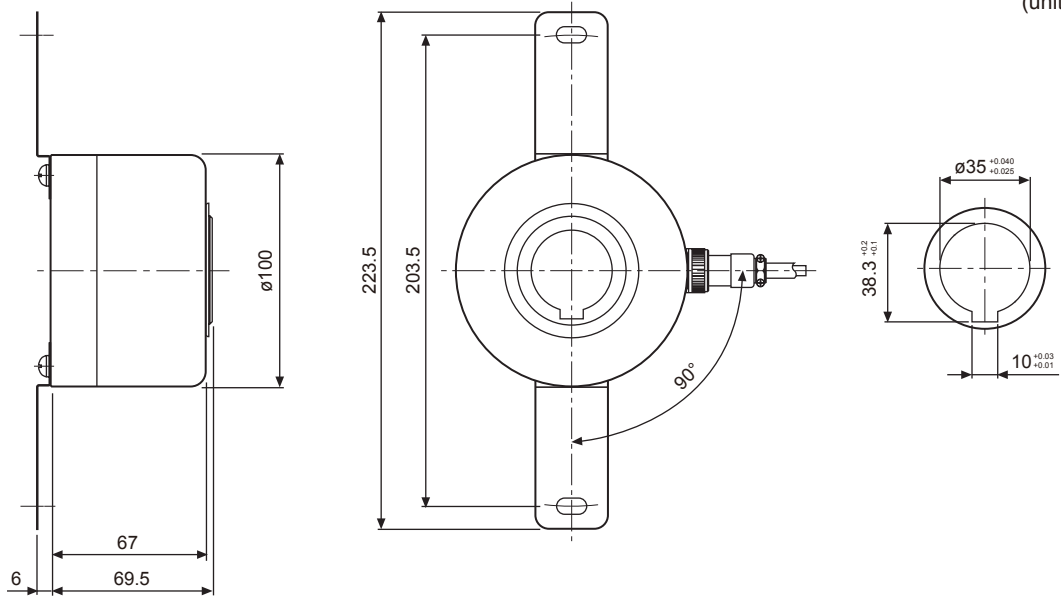
(T) Software

(U) Other

# E100H Series

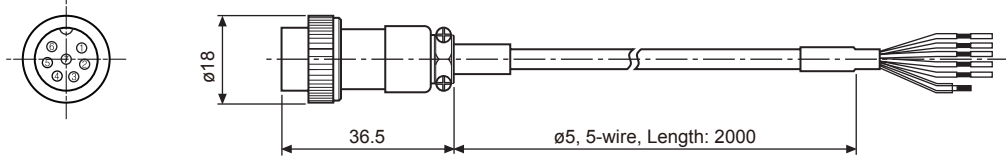
## ■ Dimensions

(unit: mm)

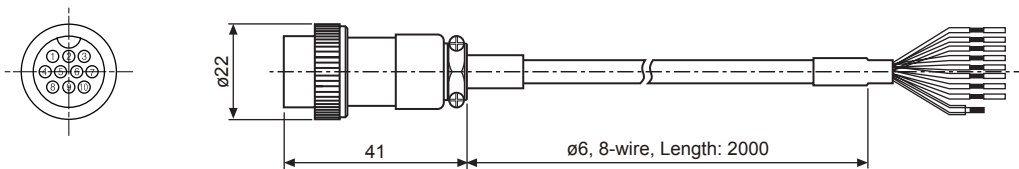


## ◎ Connector cable

- Totem pole output / NPN open collector output / Voltage output



- Line driver output



※10m connector cable is customizable.

※Cable type is customizable.

- Bracket

