


# 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	Control 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 (Cable length: 2m, I sink = 20mA)
		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 at frequency of 10 to 55Hz (for 1 min.) in each X, Y, Z direction 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 structure	IP50 (IEC standard)		
Cable	Ø5mm, 5-wire, Length: 2m, Shield cable (Line driver output: Ø6mm, 8-wire) (AWG24, Core diameter: 0.08mm, Number of cores: 40, Insulator out diameter: Ø1mm)		
Accessory	Bracket 2EA		
Approval	CE (Except for line driver output)		
Weight <sup>※3</sup>	Approx. 1400g (approx. 1130g)		

※1: Not indicated resolutions are customizable.

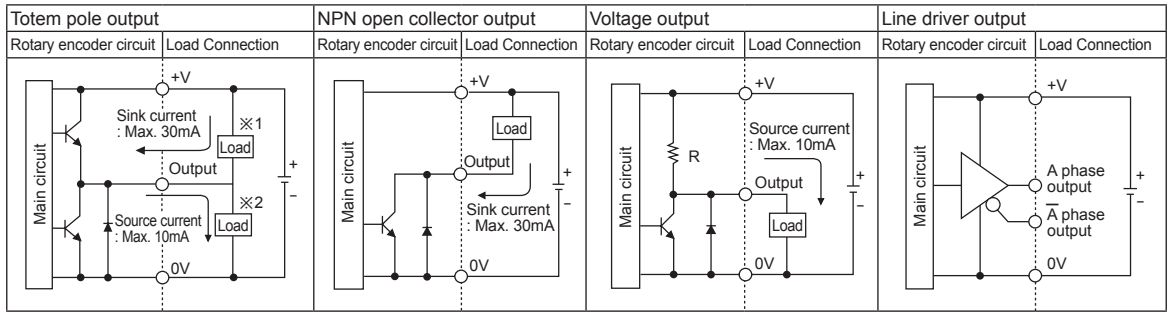
※2: Make sure that. Max response revolution should be lower than or equal to max. allowable revolution when selecting the resolution.

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

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

# Incremental Ø100mm Hollow Shaft Type

## Control Output Diagram

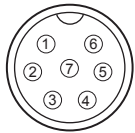


- Totem pole output type can be used for NPN open collector output type (×1) or Voltage output type (×2).
- All output circuits of A, B, Z phase are same. (Line driver output is A,  $\bar{A}$ , B,  $\bar{B}$ , Z,  $\bar{Z}$ )

## 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

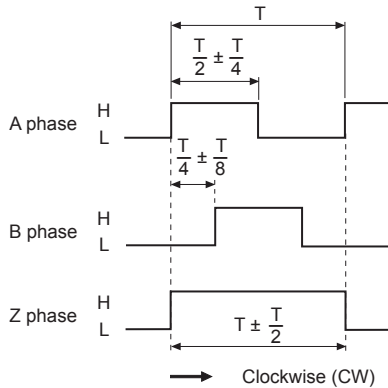
※N-C (Not Connected)

※Unused wires must be insulated.

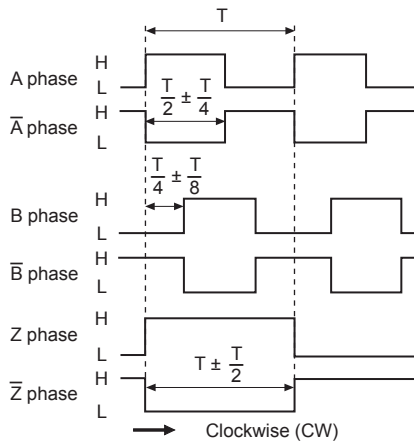
※The metal case and shield cable should be grounded (F.G.).

## Output Waveform

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



- Line driver output



(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

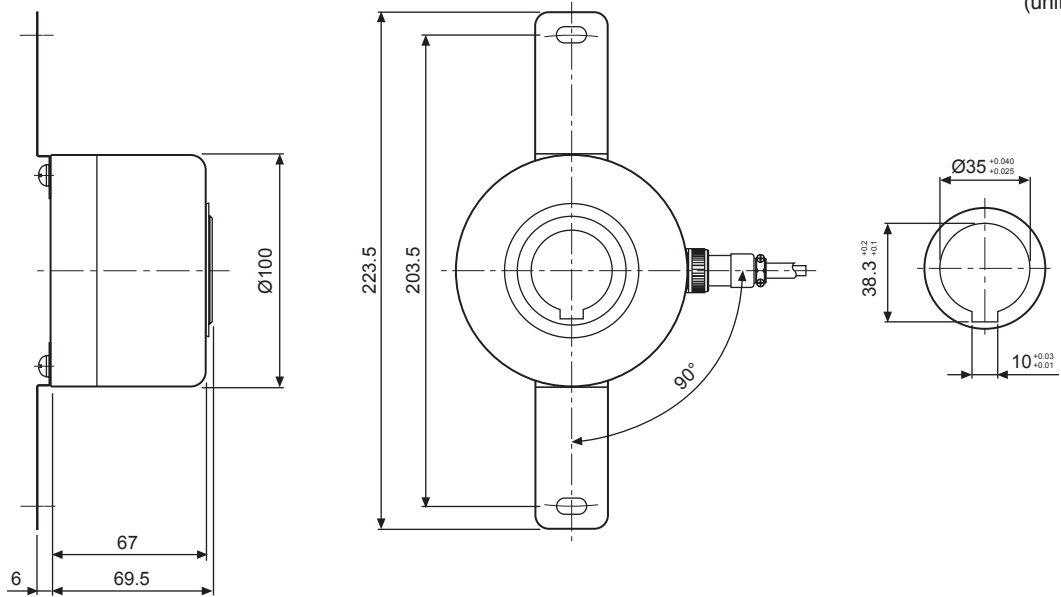
(S) Field Network Devices

(T) Software

# E100H Series

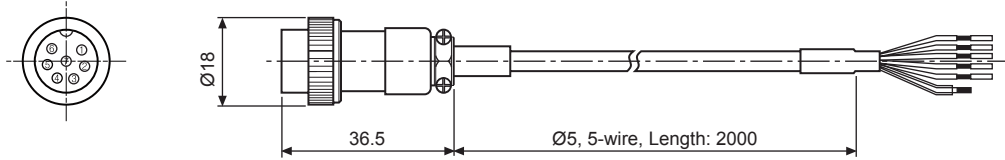
## ■ Dimensions

(unit: mm)

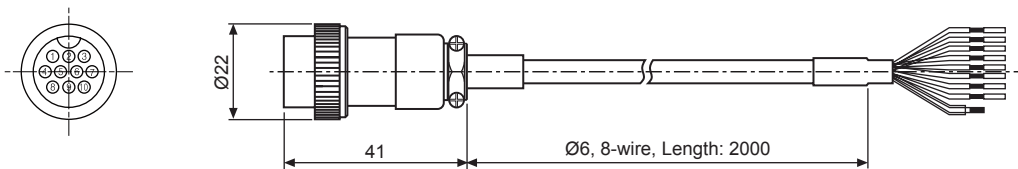


## ◎ Connector cable

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



- Line driver output



※10m connector cable is customizable.

※Cable type is customizable.

- Bracket

