

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

E100H	35	—	10000	—	6	—	L	—	5
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) ^{※1}		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=1cycle 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	• Measuring condition - Cable length : 2m, I sink = 20mA
		NPN open collector output		
		Voltage output		
		Line driver output	Max. 0.5μs	
	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 ² (8×10 ⁻⁵ kg·m ²)	
	Shaft loading		Radial : 5kgf, Thrust : 2.5kgf	
	Max. allowable revolution ^{※2}		3600rpm	
Vibration		1.5mm amplitude or 300m/s ² 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.

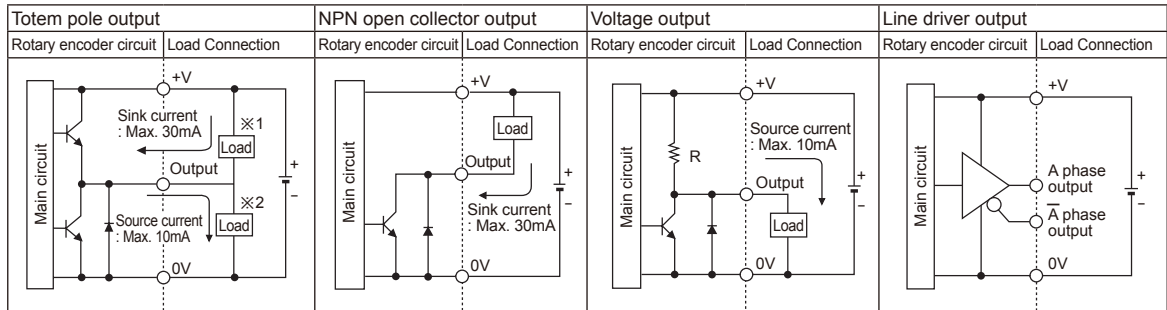
※2: Make sure that. Max response revolution should be lower than or equal to max. allowable revolution when selecting the resolution.

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

※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

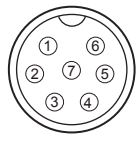
Control output diagram



- 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, $\bar{Z}$)

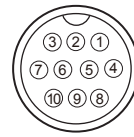
Connections

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



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

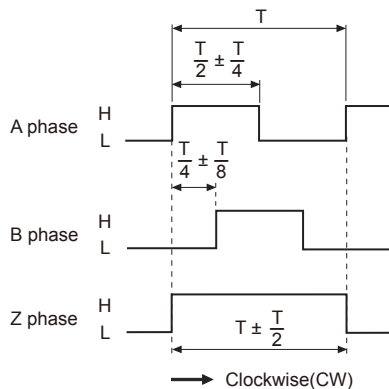
※N-C(Not Connected)

※Unused wires must be insulated.

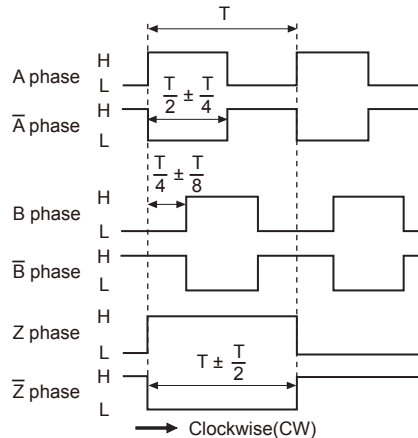
※The metal case and shield cable should be grounded(F.G.).

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

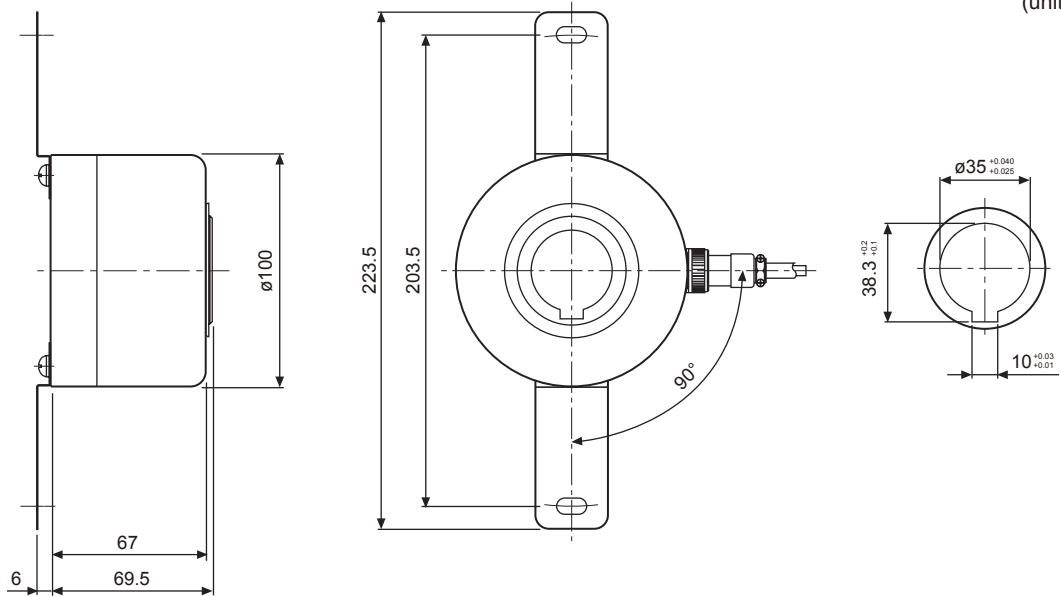
(T)
Software

(U)
Other

E100H Series

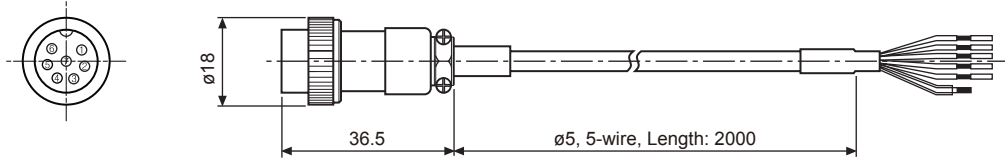
■ Dimensions

(unit: mm)

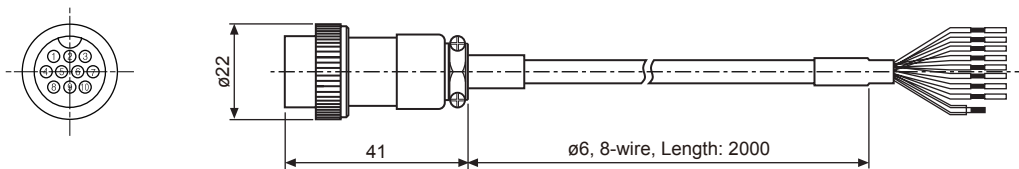


◎ Connector cable

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



● Line driver output



※10m connector cable is customizable.

※Cable type is customizable.

● Bracket

