

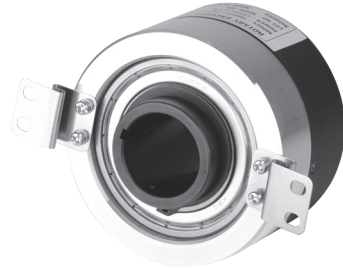
E88H Series

Hollow Shaft Type Ø88mm Incremental Rotary Encoder

■ Features

- Ø88mm, Inner diameter of shaft Ø30mm
- No coupling needed with direct installation at elevator winding machine
- Power supply: 5VDC, 15VDC ±5%
- Control output: Complemental output, Line driver output

 Please read "Safety Considerations" in the instruction manual before using.



■ Ordering Information

E88H	30	1024	2		15
Series	Shaft inner diameter	Pulses/revolution	Output phase	Control output	Power supply
Ø88mm, hollow shaft type	Ø30mm	1024	2: A, B 6: A, \bar{A} , B, \bar{B} , Z, \bar{Z}	No mark: Complemental output L: Line driver output	15: 15VDC ±5% 5: 5VDC ±5%

■ Specifications

Item	Hollow Shaft Type Ø88mm Incremental Rotary Encoder		
Model	E88H30-1024-2-15	E88H30-1024-6-L-5	
Revolution (PPR)	1,024		
Electrical specification	Output phase	A, B phase	A, \bar{A} , B, \bar{B} , Z, \bar{Z} phase
	Phase difference of output	Output between A and B phase: $\frac{T}{4} \pm \frac{T}{10}$ (T=1cycle of A phase)	
	Control output	<ul style="list-style-type: none"> • [L]-Load current: max. 15mA, Residual voltage: max. 2.0VDC≐ • [H]-Load current: max. 15mA, Output voltage: min. 10VDC≐ 	<ul style="list-style-type: none"> • [L]-Load current: max. 20mA, Residual voltage: max. 0.5VDC≐ • [H]-Load current: max. -20mA, Output voltage: min. 2.5VDC≐
	Response time (rise, fall)	Max. 1μs (cable length: 8m, load resistance: 1kΩ)	Max. 0.5μs (cable length: 8m, I sink=20mA)
	Max. response frequency	150kHz	
	Power supply	15VDC≐ ±5% (ripple P-P: max. 5%)	5VDC≐ ±5% (ripple P-P: max. 5%)
	Current consumption	Max. 60mA (disconnection of the load)	Max. 50mA (disconnection of the load)
	Insulation resistance	Over 100MΩ (at 500VDC megger)	
	Dielectric strength	750VAC 50/60Hz for 1 min (between all terminals and case)	
	Connection	Radial cable type	
Mechanical specification	Starting torque	Max. 600gf·cm (0.06N·m)	
	Moment of inertia	Max. 800g·cm ² (8×10 ⁻⁵ kg·m ²)	
	Shaft loading	Radial: max. 5kgf, thrust: max. 2.5kgf	
	Max. allowable revolution ^{※1}	3,600rpm	
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. 100G		
Environment	Ambient temp.	-10 to 70°C, storage: -25 to 85°C	
	Ambient humi.	35 to 85%RH, storage: 35 to 90%RH	
Protection structure	IP50 (IEC standard)		
Cable	Ø6mm, 6-wire, 8m, shield cable (AWG24, core diameter: 0.16mm, number of cores: 11, insulator out diameter: Ø1mm)		Ø6mm, 8-wire, 8m, shield cable (AWG24, core diameter: 0.08mm, number of cores: 40, insulator out diameter: Ø1mm)
	Accessory	Spring bracket: 2	
Approval	CE (except line driver output model)		
Weight ^{※2}	Approx. 1.49kg (approx. 1.45kg)		

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

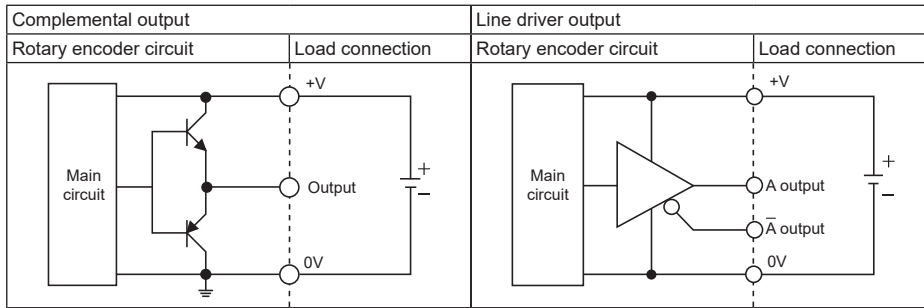
$$[\text{Max. response revolution (rpm)}] = \frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}$$

※2: The weight includes packaging. The weight in parenthesis is for unit only.

※Environment resistance is rated at no freezing or condensation.

Incremental Ø88mm Hollow Shaft Type

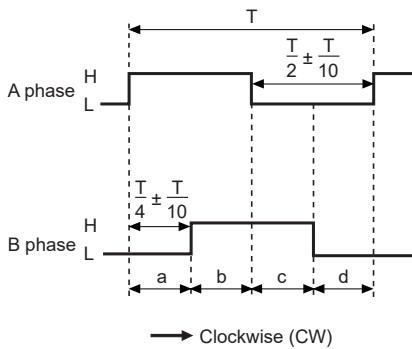
Control Output Diagram



※All output circuits of A, \bar{A} , B, \bar{B} , Z, \bar{Z} phase are the same.

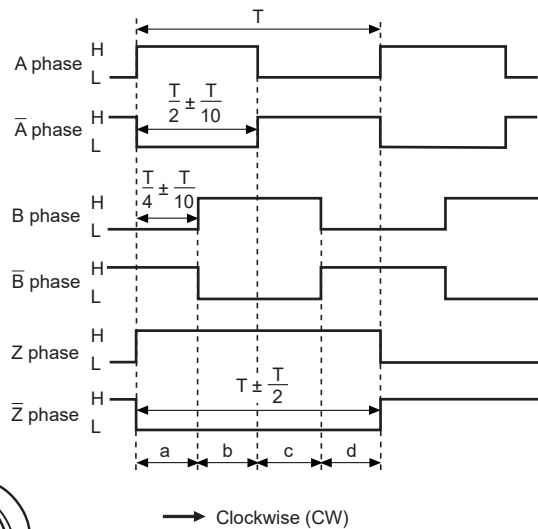
Output Waveforms

Complemental output



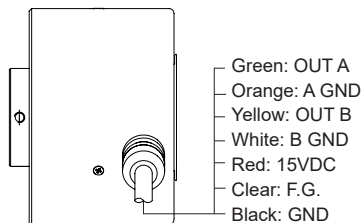
Note	Standard error
a+b+c+d	T (1 cycle of A, B phase)
a+b, c+d	$\frac{T}{2} \pm \frac{T}{10}$
a, b, c, d	$\frac{T}{4} \pm \frac{T}{10}$

Line driver output

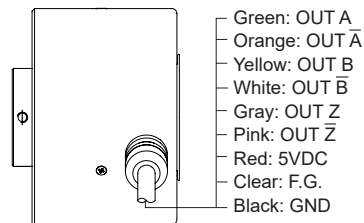


Connections

Complemental output



Line driver output



※Unused wires must be insulated.

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

※The output circuit has the dedicated IC and be sure not to short-circuit when wiring the output cables.

※Do not apply tensile strength over 30N to the cable.

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) LIDAR

(D) Door/Area Sensors

(E) Vision Sensors

(F) Proximity Sensors

(G) Pressure Sensors

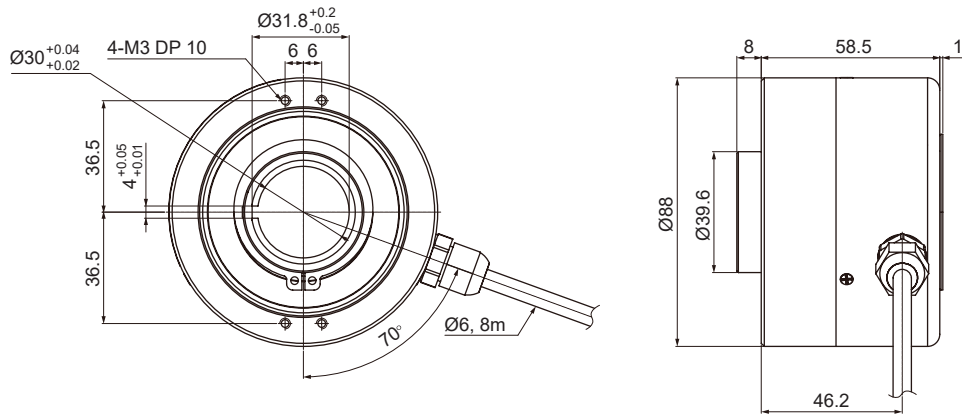
(H) Rotary Encoders

(I) Connectors/ Connector Cables/ Sensor Distribution Boxes/ Sockets

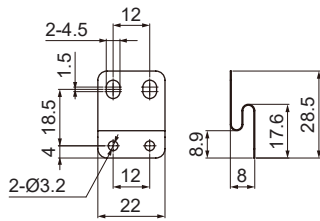
E88H Series

■ Dimensions

(unit: mm)



○ Bracket



※ Fix the unit by a wrench under 0.15N·m of torque.