

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 operation 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. response frequency | 150kHz | | |
| | Power supply | 15VDC= ±5% (ripple P-P: max. 5%) | | |
| | Current consumption | Max. 60mA (disconnection of the load) | 5VDC= ±5% (ripple P-P: max. 5%) | |
| | 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.

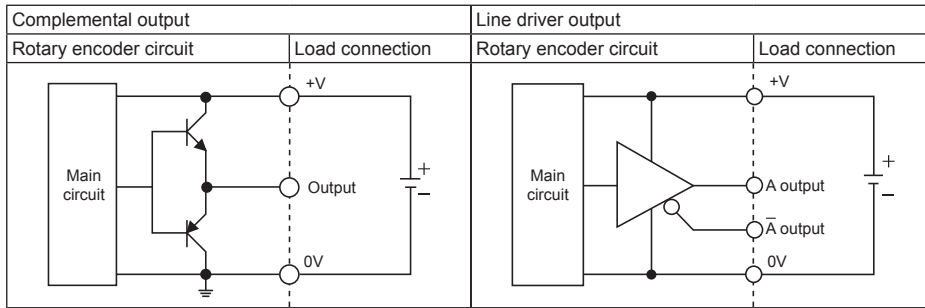
$$[\text{Max. response revolution (rpm)}] = \frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}$$

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

※Environment resistance is rated at no freezing or condensation.

E88H Series

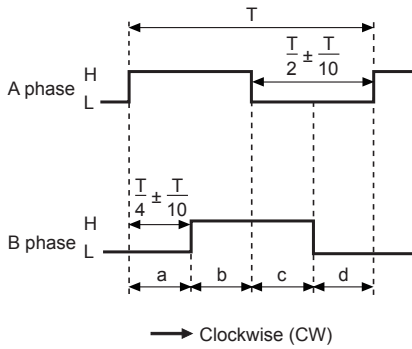
Control Output Diagram



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

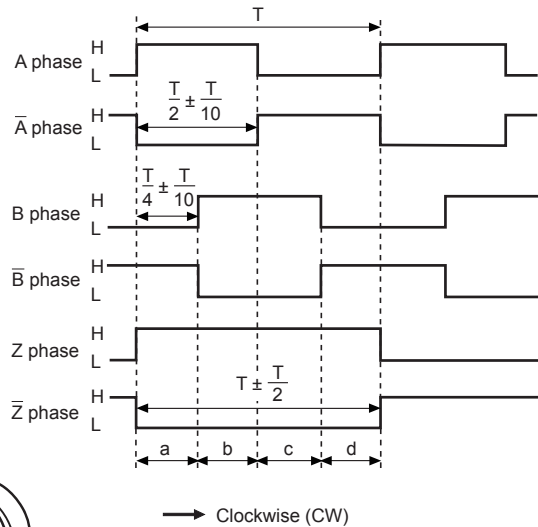
Output Waveforms

Complemental output



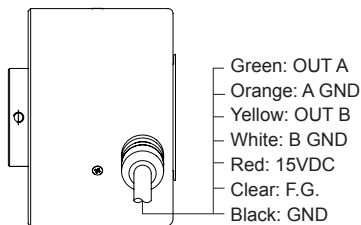
| Note | Standard error |
|------------|--------------------------------|
| a+b+c+d | T (1 cycle of A, B phase) |
| a+b, c+d | $\frac{T}{2} \pm \frac{T}{10}$ |
| a, b, c, d | $\frac{T}{4} \pm \frac{T}{10}$ |

Line driver output

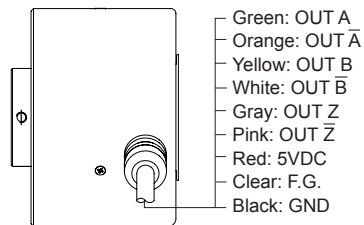


Connections

Complemental output



Line driver output



※Unused wires must be insulated.

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

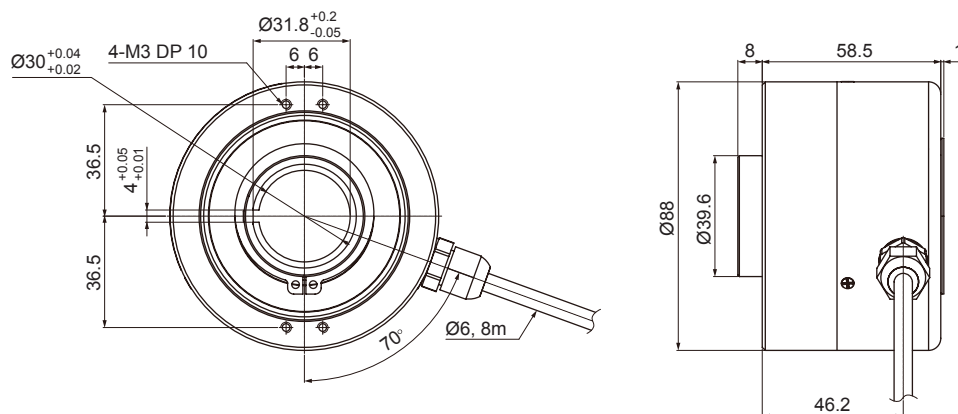
※The output circuit has the dedicated IC and be sure not to short-circuit when wiring the output cables.

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

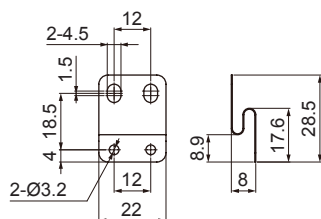
Incremental Ø88mm Hollow Shaft Type

■ Dimensions

(unit: mm)



○ Bracket



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