

Incremental Manual Handle Type

Incremental manual handle type Rotary encoder

■ Features

- Suitable for manual pulse input type such as numerically controlled or Milling machinery
- Terminal connection type
- Power supply : 5VDC $\pm 5\%$, 12–24VDC $\pm 5\%$



■ Application

- Industrial tooling machinery

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

■ Ordering information

ENH	100	1	T	24
Series	Pulse/1Revolution	Clickstopper position	Control output	Power supply
Handle type	25 100	1 : Normal "H" 2 : Normal "L"	T : Totem pole output V : Voltage output L : Line driver output(※)	5 : 5VDC $\pm 5\%$ 24 : 12–24VDC $\pm 5\%$

※The power of Line driver is only for 5VDC

■ Specifications

Item	Incremental manual handle type of rotary encoder	
Resolution(P/R)	(Note1) 25, 100	
Output phase	A, B phase (Line driver output A, \bar{A} , B, \bar{B} 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	<ul style="list-style-type: none"> • Low \Rightarrow Load current:Max. 30mA, Residual voltage : Max. 0.4VDC • High \Rightarrow Load current:Max. 10mA, Output voltage (Power supply 5VDC):Min. (Power supply–2.0)VDC, Output voltage (Power supply 12–24VDC):Min. (Power supply–3.0)VDC
	Voltage output	Load current : Max. 10mA, Residual voltage : Max. 0.4VDC
	Line driver output	<ul style="list-style-type: none"> • Low \Rightarrow Load current : Max. 20mA, Residual : Max. 0.5V • High \Rightarrow Load current : Max. –20mA, Output voltage : Min. 2.5V
Response time (Rise/Fall)	Totem pole output	Max. 1 μ s
	Voltage output	Max. 1 μ s
	Line driver output	Max. 0.2 μ s
Power supply	<ul style="list-style-type: none"> • 5VDC $\pm 5\%$ (Ripple P–P : Max. 5%) • 12–24VDC $\pm 5\%$ (Ripple P–P : Max. 5%) 	
Current consumption	Max. 40mA (disconnection of the load), Line driver output:Max. 50mA (disconnection of the load)	
Max. Response frequency	10kHz	
Insulation resistance	Min. 100M Ω (at 500VDC)	
Dielectric strength	750VAC 50/60Hz for 1 minute (Between all terminals and case)	
Connection	Terminal block type	
Mechanical specification	Starting torque	Max. 1kgf \cdot cm (0.098N \cdot m)
	Shaft loading	Radial : 2kgf, Thrust : 1kgf
	Max. allowable revolution	(Note2) Max. 200rpm (Normal), 600rpm (Peak)
Vibration	1.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours	
Shock	Max. 50G	
Ambient temperature	–10 ~ 70 $^{\circ}$ C (at non-freezing status), Storage: –25 ~ 85 $^{\circ}$ C	
Ambient humidity	35~85%RH, Storage: 35~90%RH	
Unit weight	Approx. 300g	

※ **(Note1)** Not indicated type is available to customize.

※ **(Note2)** Max. allowable revolution \geq Max. response revolution **[**Max. response revolution (rpm) = $\frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}$ **]**

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

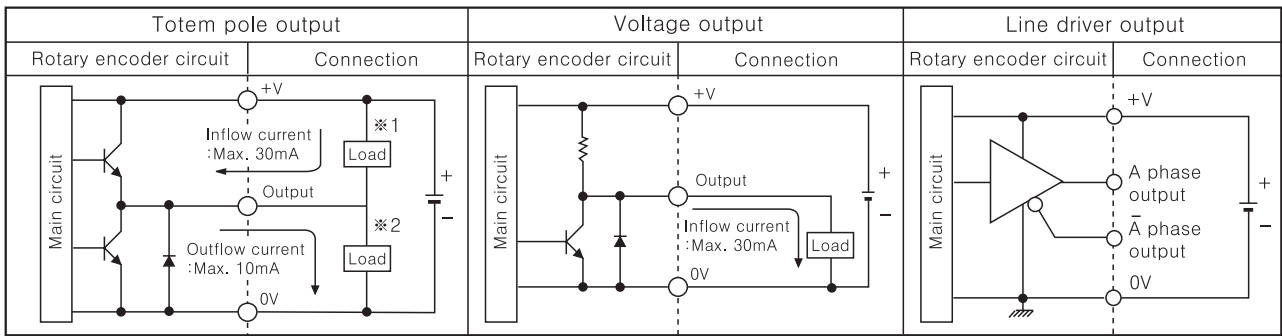
(N) Stepping motor & Driver & Controller

(O) Graphic panel

(P) Production stoppage models & replacement

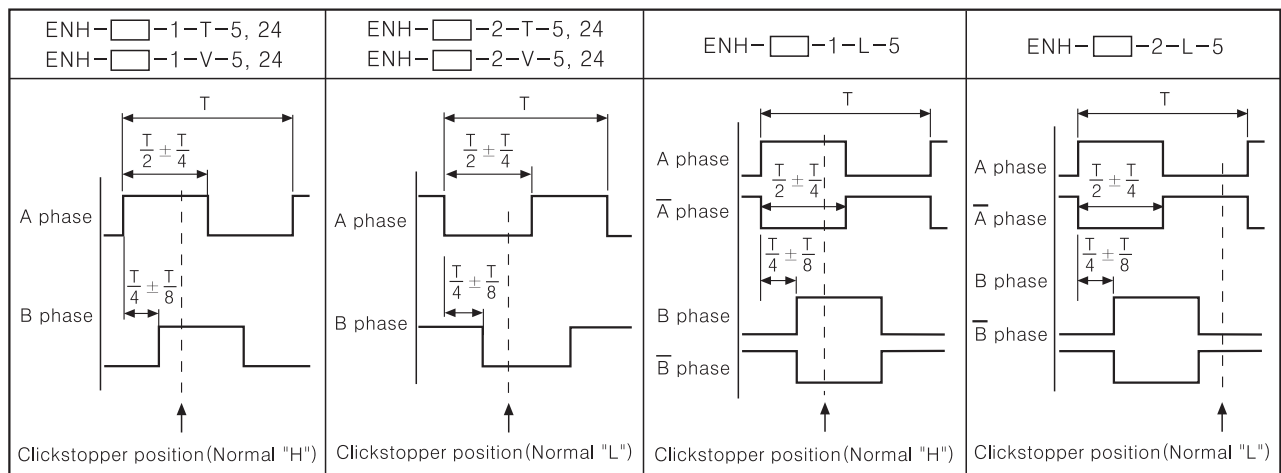
ENH Series

Control output diagram



- The output circuit of A, B phase (Line driver output is A, \bar{A} , B, \bar{B} phase) are same.
- Totem pole output can be used for NPN open collector type (*1) or voltage output type (*2).

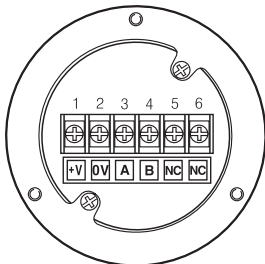
Output waveform



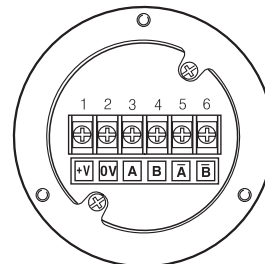
*Clickstopper position Normal "H" or Normal "L": It shows the waveform when the handle is not stopped.

Connections

● Totem pole output / Voltage output



● Line driver output



*Do not use terminal No. 5, 6.

Dimensions

