

ENH Series

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	–	1	–	24
Series		Pulse/1 Revolution		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

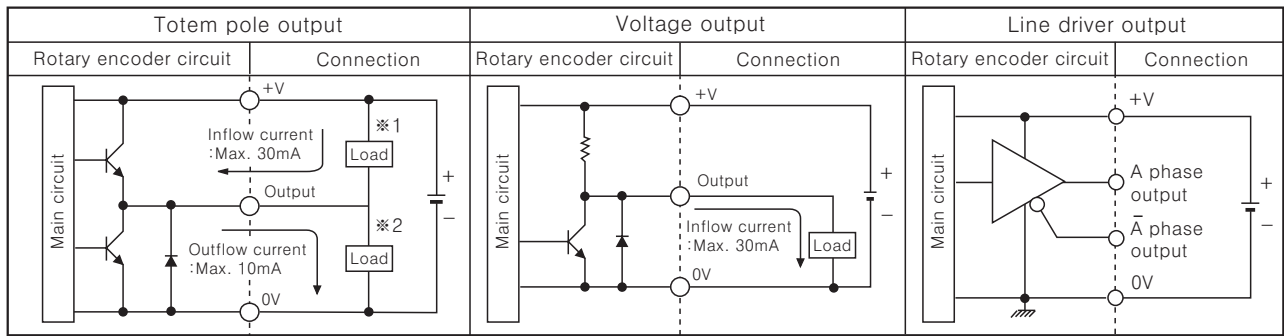
Item		Incremental manual handle type of rotary encoder	
Resolution(P/R)		(Note1)	25, 100
Electrical specification	Output phase	A, B phase (Line driver output A, \bar{A} , B, \bar{B} phase)	
	Phase difference of output	Phase difference between A and B : $\frac{T}{4} \pm \frac{T}{8}$ (T=1cycle of A phase)	
	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. 0.5VDC • High \Rightarrow Load current : Max. –20mA, Output voltage : Min. 2.5VDC
	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 mega between all terminals and case)	
	Dielectric strength	750VAC 50/60Hz for 1 minute (Between all terminals and case)	
	Connection	Terminal block type	
Mechanical specification	Starting torque	Max. 1kgf • cm (0.098N • 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°C (at non–freezing status), Storage: –25 ~ 85°C	
Ambient humidity		35~85%RH, Storage: 35~90%RH	
Unit weight		Approx. 300g	

※ (Note1) Not indicated type is customizable.

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

Incremental Manual Handle Type

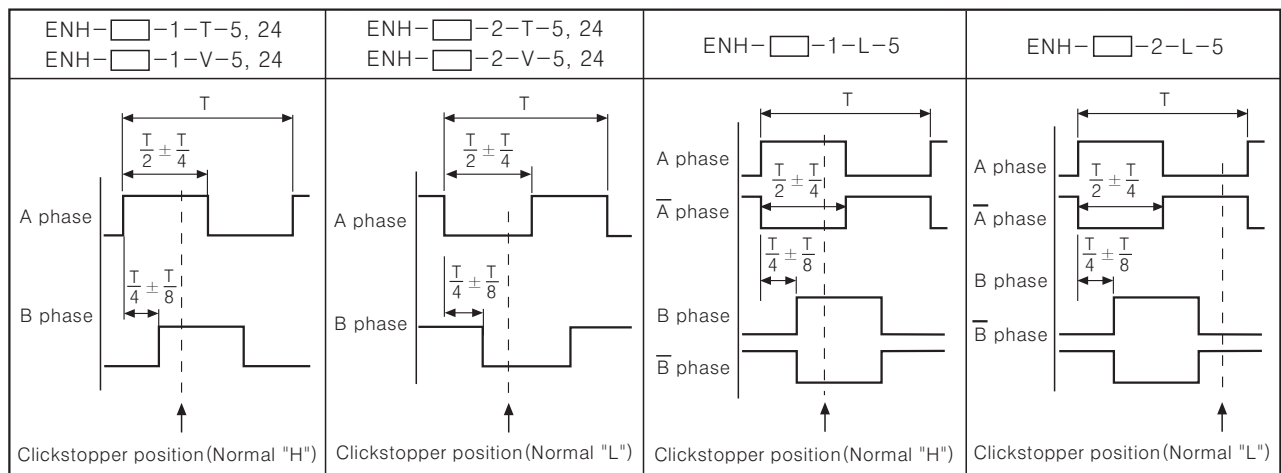
Control output diagram



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).

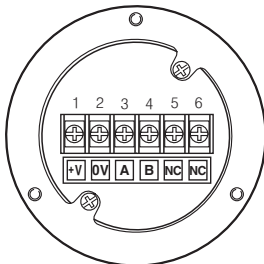
Output waveform



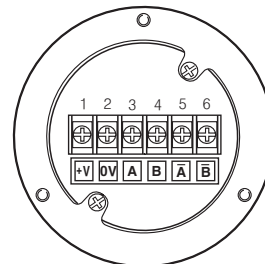
※Clickstopper position Normal "H" or Normal "L": It shows the waveform when the handle is not stopped.

Connections

●Totem pole output / Voltage output

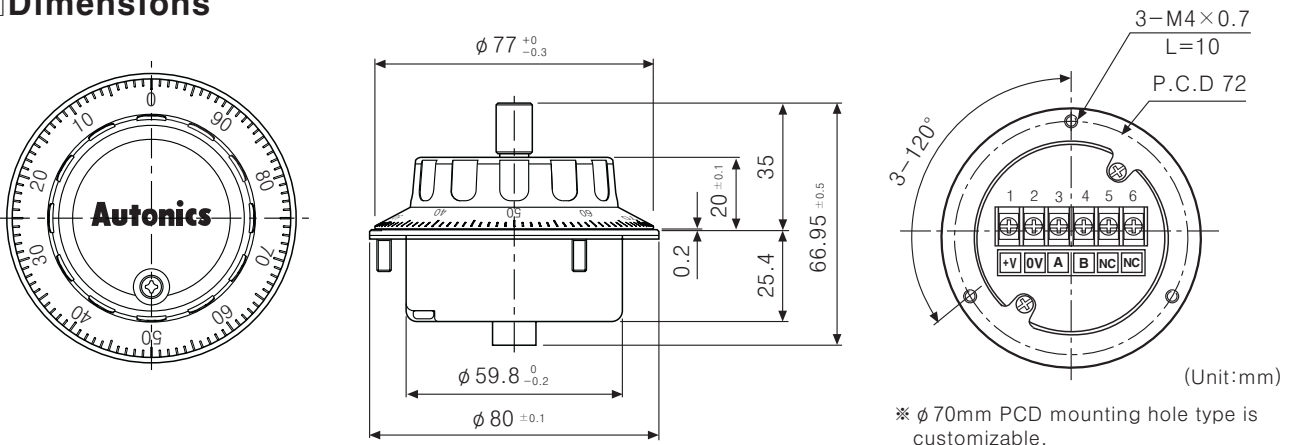


●Line driver output



※Do not use terminal No. 5, 6.

Dimensions



(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) Field network device

(Q) Production stoppage models & replacement