

# 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 ±5%, 12-24VDC ±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 ±5% 24 : 12-24VDC ±5%

\*The power of Line driver is only for 5VDC

### ■ Specifications

Item	Incremental manual handle type of rotary encoder	
Resolution(P/R)	<b>(Note1)</b> 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=1 cycle of A phase)	
Control output	Totem pole output	<ul style="list-style-type: none"> <li>• Low <math>\Rightarrow</math> Load current:Max. 30mA, Residual voltage : Max. 0.4VDC</li> <li>• High <math>\Rightarrow</math> 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</li> </ul>
	Voltage output	Load current : Max. 10mA, Residual voltage : Max. 0.4VDC
	Line driver output	<ul style="list-style-type: none"> <li>• Low <math>\Rightarrow</math> Load current : Max. 20mA, Residual : Max. 0.5V</li> <li>• High <math>\Rightarrow</math> Load current : Max. -20mA, Output voltage : Min. 2.5V</li> </ul>
Response time (Rise/Fall)	Totem pole output	Max. 1 $\mu$ s
	Voltage output	Max. 1 $\mu$ s
	Line driver output	Max. 0.2 $\mu$ s
Power supply	<ul style="list-style-type: none"> <li>• 5VDC ±5% (Ripple P-P : Max. 5%)</li> <li>• 12-24VDC ±5% (Ripple P-P : Max. 5%)</li> </ul>	
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 $\Omega$ (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	<b>(Note2)</b> 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 **[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

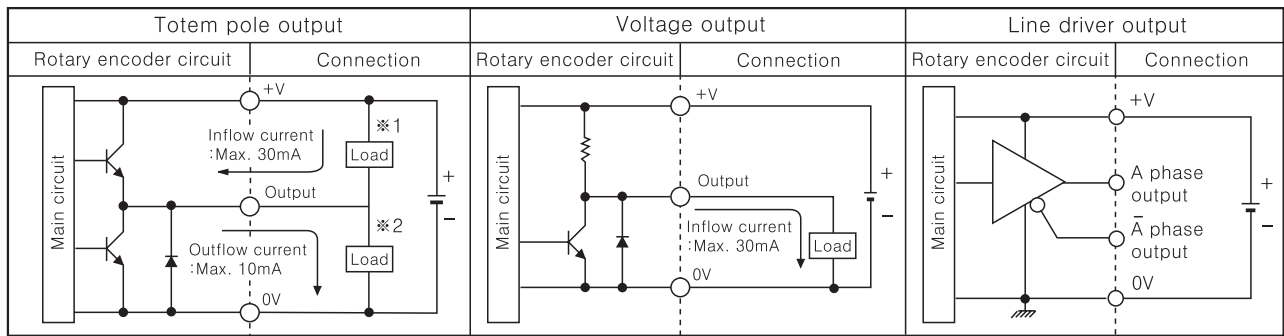
(N) Stepping motor & Driver & Controller

(O) Graphic panel

(P) Production stoppage models & replacement

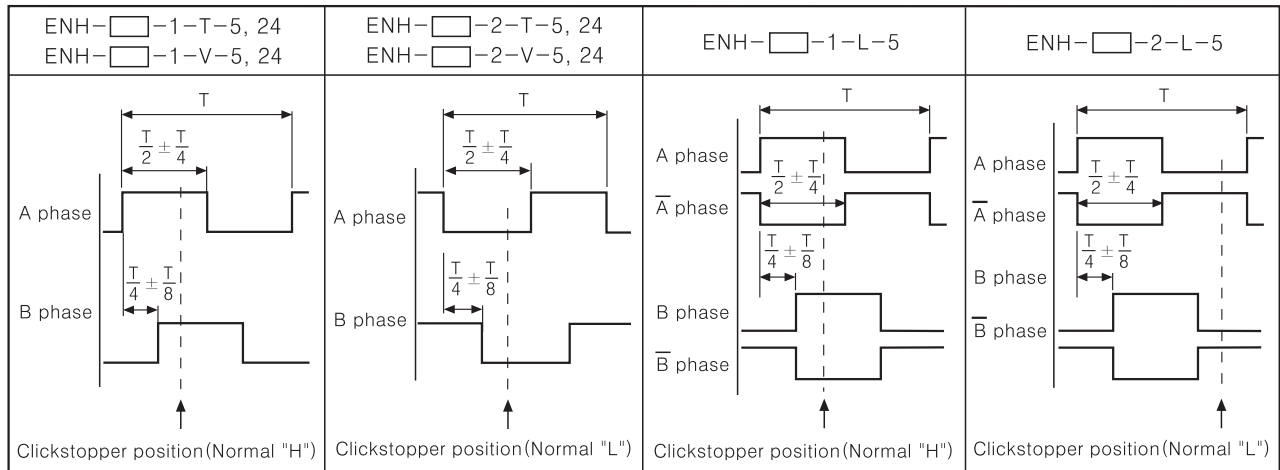
# ENH Series

## 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).

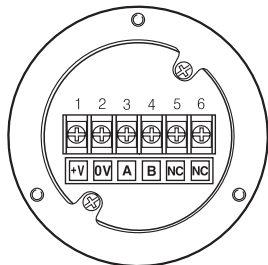
## Output waveform



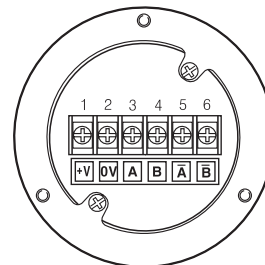
\*Clickstopper position Normal "H" or Normal "L" : It shows the waveform when the handle is not stopped.

## Connections

● Totem pole output / Voltage output

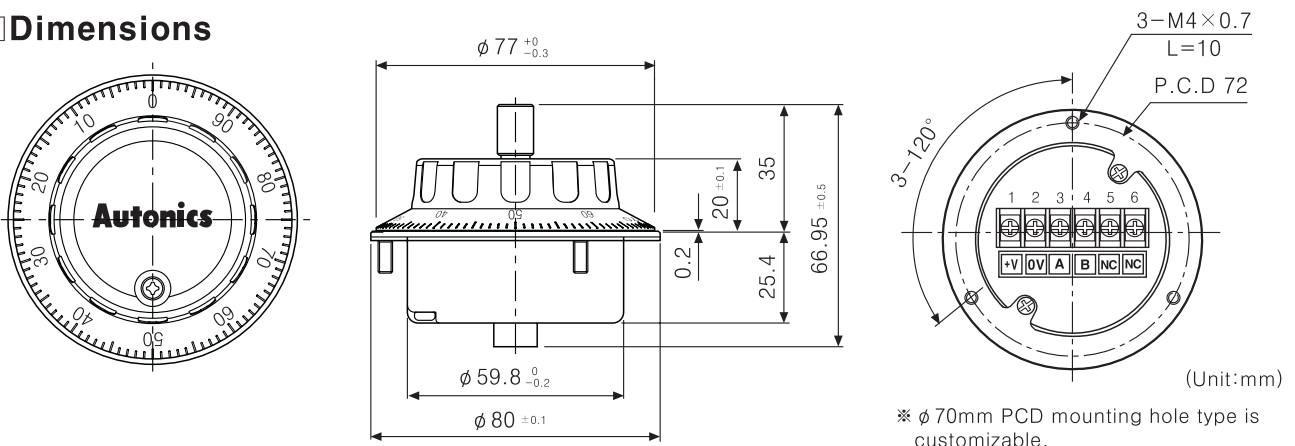


● Line driver output



\*Do not use terminal No. 5, 6.

## Dimensions



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