

ENHP Series

Portable incremental type of Rotary encoder with handle

■ Features

- Suitable for manual pulse input type such as numerically controlled or milling machinery
- Emergency stop switch, enable switch are available
- Rotary switch for 6 Position, 4 Position

■ Application

- Industrial tooling machinery

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



■ Ordering information

ENHP	100	1	L	5
Series	Pulse/1 Revolution	Clickstopper position	Control output	Power supply
Portable encoder with handle	100	1 : Normal "H" 2 : Normal "L"	T : Totem pole output L : Line driver output	5 : 5VDC $\pm 5\%$ 24 : 12–24VDC $\pm 5\%$

※ Line driver power is only 5VDC.

■ Specifications

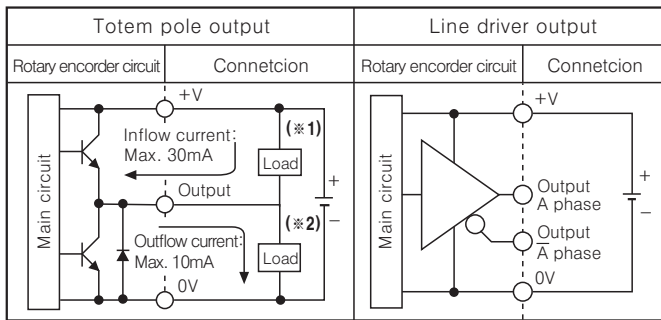
Item		Portable incremental type of rotary encoder with handle	
Resolution (P/R)		100P/R	
Electrical specification	Output phase	A, B phase (Line driver output A, $\bar{A}$, B, $\bar{B}$ phase)	
	Phase difference of output	Phase difference between A and B : $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase)	
	Rotary switch output	BCD Code output • Axis select switch (OFF, X, Y, Z, A, B) • Rate select switch (R1, R2, R3, R4)	
	Control output	Totem pole output	• 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
		Line driver output	• Low $\Rightarrow$ Load current : Max. 20mA, Residual voltage : 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
		Line driver output	Max. 0.5 μ s
	Power supply	5VDC $\pm 5\%$ (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	
Mechanical specification	Insulation resistance	Min. 100M Ω (at 500VDC megger between all terminals and case)	
	Dielectric strength	750VAC 50/60Hz for 1 minute (Between all terminals and case)	
	Connection	25Pin D–SUB of connector type	
	Starting torque	Max. 1kgf · cm (0.098N · m)	
	Shaft loading	Radial : 2kgf, Thrust : 1kgf	
	Max. allowable revolution	(※1) Max. 200rpm (Normal), 600rpm (Peak)	
Vibration		1.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours	
Shock		Max. 50G	
Ambient temperature		–10 to 70°C (at non–freezing status), Storage : –25 to 85°C	
Ambient humidity		35 to 85%RH, Storage: 35 to 90%RH	
Cable		ϕ 5mm, 18P, Length : 8m, Spring code cable (AWG28, Core wire diameter: 0.08mm, No. of core wire: 18, Insulator out diameter: ϕ 0.7mm)	
Protection		IP50 (IEC standards)	
Unit weight		Approx. 730g	

(※1) Max. allowable revolution $\geq$ Max. response revolution 【Max. response revolution (rpm) = $\frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec.}$ 】

Make sure that max. response revolution should be lower than max. allowable revolution when selecting the resolution.

Portable Incremental Type with Handle

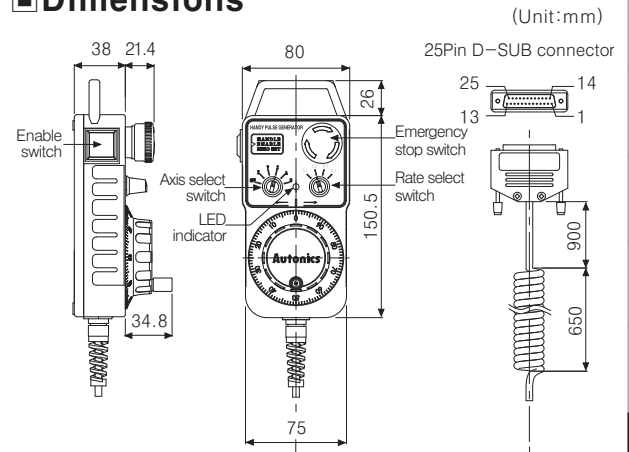
Control output diagram



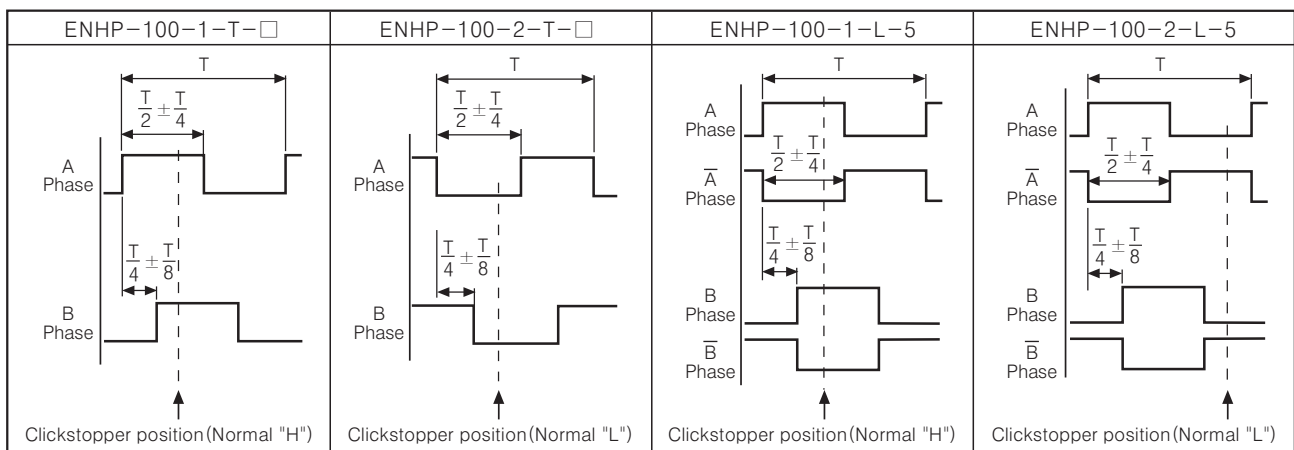
※ The output circuits of A, B phase (Line driver output A, $\bar{A}$, B, $\bar{B}$ phase) are the same.

※ Totem pole output type can be used for NPN open collector output type (*1) or voltage output type (*2).

Dimensions



Output waveform

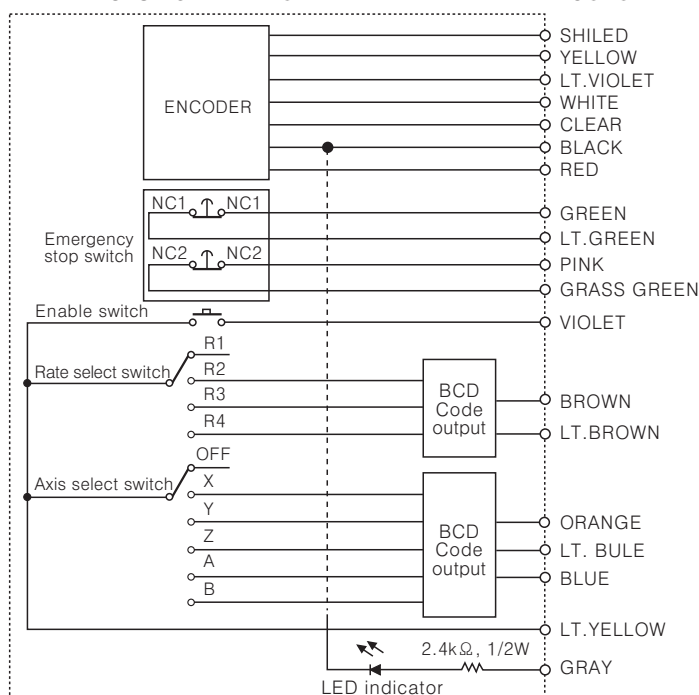


※ Clickstopper position Normal "H" or Normal "L" : It shows the waveform when the handles is stopped.

※ Encoder revolution direction : It is clockwise (CW) from the dial.

Connections

HANDY PULSE GENERATOR



COLOR

SIGNAL

24P CONNECTOR (PIN NO.)

F. G	1
OUT A	2
OUT $\bar{A}$ *1	3
OUT B	4
OUT $\bar{B}$ *1	5
0V	6
+V	7
E-STOP1	8
E-STOP1	9
E-STOP2	22
E-STOP2	24
ENABLE	10
FEED RATE	11
SELECT	12
AXIS	13
SELECT	14
AXIS	15
SELECT	16
BCD COMMON	17
LED(+)	18

● AXIS SELECT

Axis	BCD Code output		
	Pin No.15	Pin No.14	Pin No.13
OFF	0	0	0
X axis	0	0	1
Y axis	0	1	0
Z axis	0	1	1
A axis	1	0	0
B axis	1	0	1

● RATE SELECT

RTAE	BCD Code output	
	Pin No.12	Pin No.11
R1	0	0
R2	0	1
R3	1	0
R4	1	1

※ 1. Totem pole output does not have $\bar{A}$, $\bar{B}$ output signal.

※ COMMON terminal (Pin No. 16) of Axis select switch and Rate select switch is common.