

ENHP Series

Portable Incremental type 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 ±5% 24 : 12-24VDC ±5%

※ Line driver power is only 5VDC.

■ Specifications

Item		Portable incremental type of rotary encoder with handle	
Resolution(P/R)		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)	
	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 - Load current : Max. 30mA, Residual voltage : Max. 0.4VDC • High - Load current : Max. 10mA, Output voltage(Power voltage 5VDC): Min.(Power voltage-2.0)VDC Output voltage(Power voltage 12-24VDC): Min.(Power voltage-3.0)VDC
		Line driver output	• Low - Load current : Max. 20mA, Residual voltage : Max. 0.5VDC • High - Load current : Max. -20mA, Output voltage : Min. 2.5VDC
	Response time (Rise/Fall)	Totem pole output	Max. 1μs
		Line driver output	Max. 0.5μs
	Power supply	• 5VDC ±5%(Ripple P-P : Max. 5%) • 12-24VDC ±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. 100MQ(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	
Vibration		1.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours	
Shock		Max. 50G	
Environment	Ambient temperature	-10 to 70°C, storage : -25 to 85°C	
	Ambient humidity	35 to 85%RH, storage: 35 to 90%RH	
Cable		ø5mm, 18-wire, Length : 8m, Spring code cable (AWG28, Core diameter : 0.08mm, Number of cores : 18, Insulator out diameter : ø0.7mm)	
Protection ※2		IP67(IEC standards) for Box	
Unit weight		Approx. 730g	

※1: Make sure that. Max response revolution should be lower than or equal to max. allowable revolution when selecting the resolution.

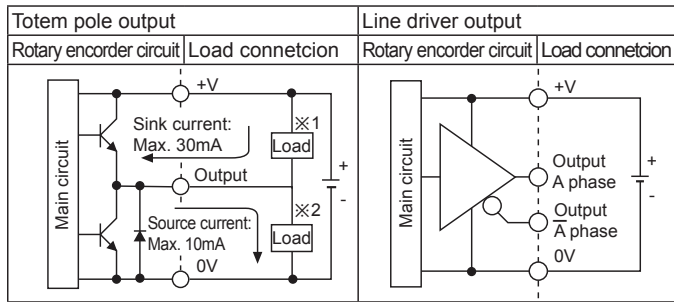
$$[\text{Max. response revolution(rpm)}] = \frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}$$

※2: It is protection for the rear case and the wiring part.

※ Environment resistance is rated at no freezing or condensation.

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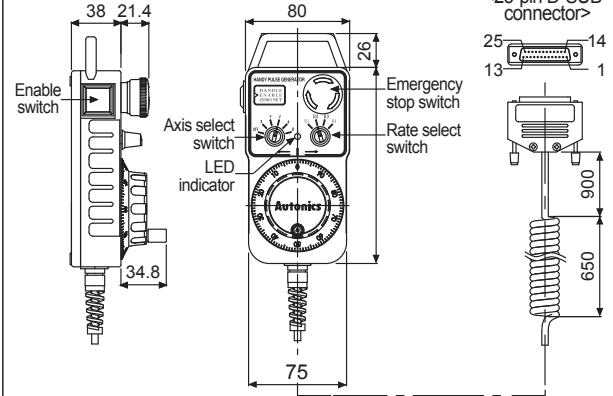
Control output diagram



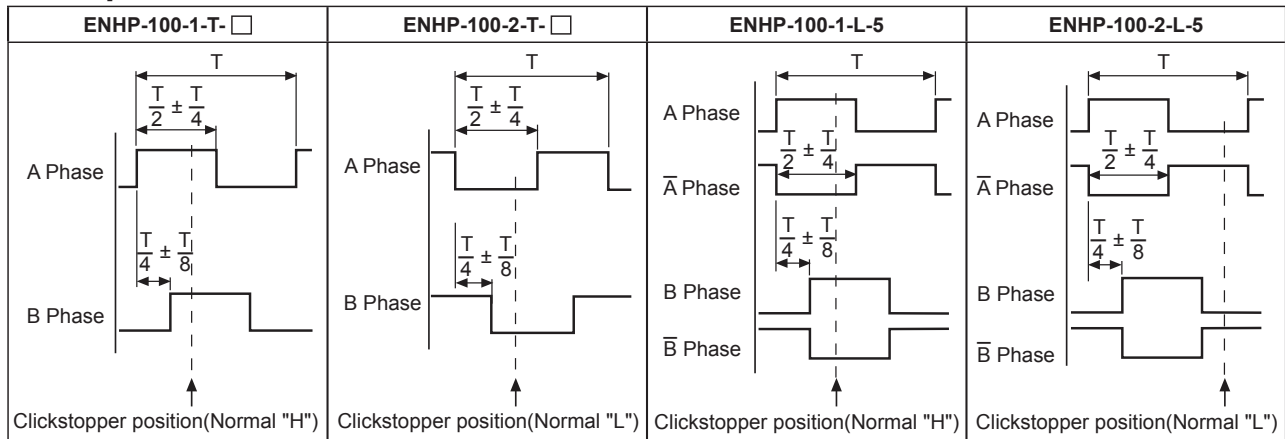
※ The output circuits of A, B phase (Line driver output A, $\bar{A}$, B, $\bar{B}$ phase) are the same.

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

Dimensions



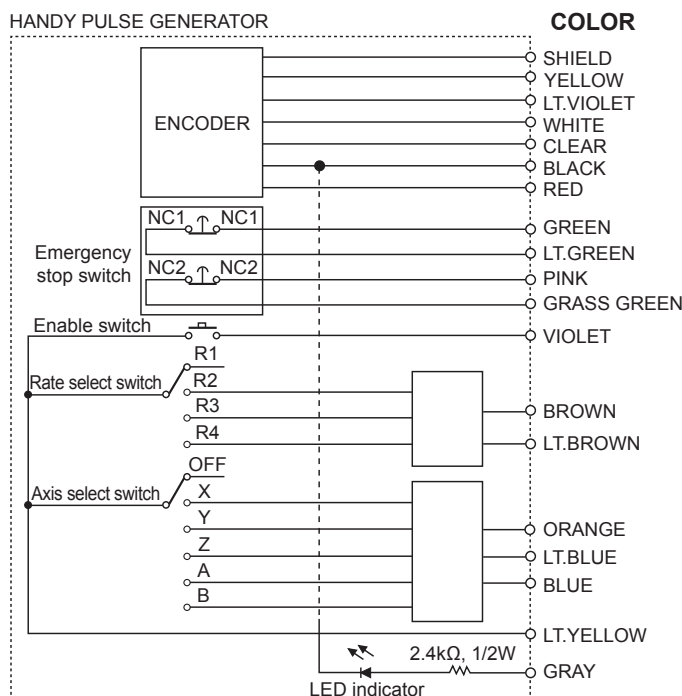
Output waveform



※ 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



SIGNAL 24P CONNECTOR (PIN NO.)

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

• AXIS SELECT

axis	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	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.