Portable Incremental Type with Handle

Portable incremental type of Rotary encoder with handle

▣Features

- Suitable for manual pulse input type such as Numerically controlled or Milling machinery
- Emergency ground 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/1Revolution	Clickstopper position	Control output	Power supply
Portable encoder with handle	100	1 : Normal "H" 2 : Normal "L"	L : Line driver output	5 : 5VDC ±5%

▣Specifications

Item			Portable incremental type of Rotary encoder with handle
Resolution(P/R)		**(Note1)**	100P/R
Electrical specification	Output phase		A, $\overline{A}$, B, $\overline{B}$
	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 (X, Y, Z, A, B) • Rate (R1, R2, R3)
	Control output	Line driver output	• Low ☞ Load current : Max. 20mA, Residual : Max. 0.5V • High ☞ Load current : Max. −20mA, Output voltage : Min. 2.5V
	Response time(Rise/Fall)		Max. 0.5μs (Measuring condition ☞ I sink = Max. 20mA)
	Power supply		5VDC ±5% (Ripple P−P : Max. 5%)
	Current consumption		Max. 50mA (disconnection of the load)
	Max. Response frequency		10kHz
	Insulation resistance		Min. 100MΩ (at 500VDC mega 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
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℃ (at non−freezing status), Storage:−25 ~ 85℃
Ambient humidity			35~85%RH, Storage: 35~85%RH
Protection			IP67 (IEC standard)
Cable			ϕ5mm, 18P, Length : 8m, Spring code cable
Unit weight			Approx. 730g

※**(Note1)** Not indicated type is customizable.

※**(Note2)** Max. allowable revolution ≧ 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
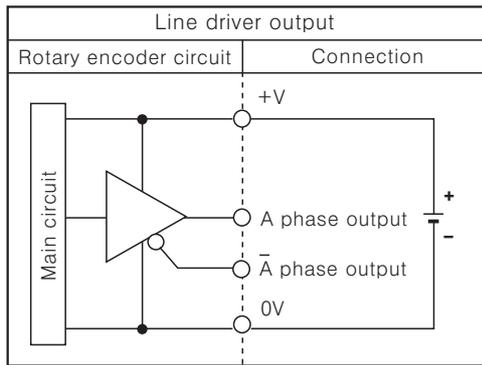(K) Photo electric sensor
(L) Pressure sensor
(M) Rotary encoder
(N) Stepping motor & Driver & Controller
(O) Graphic panel
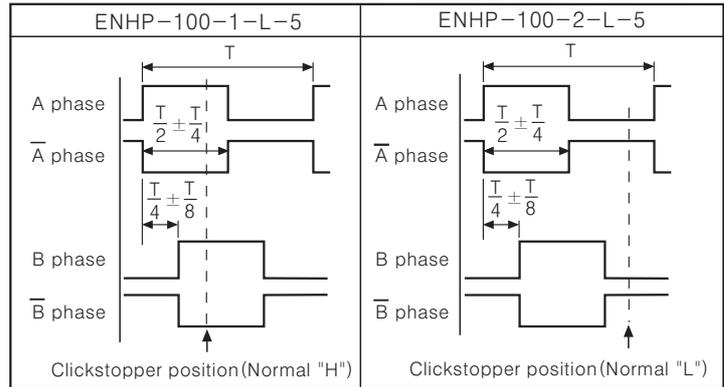(P) Production stoppage models & replacement
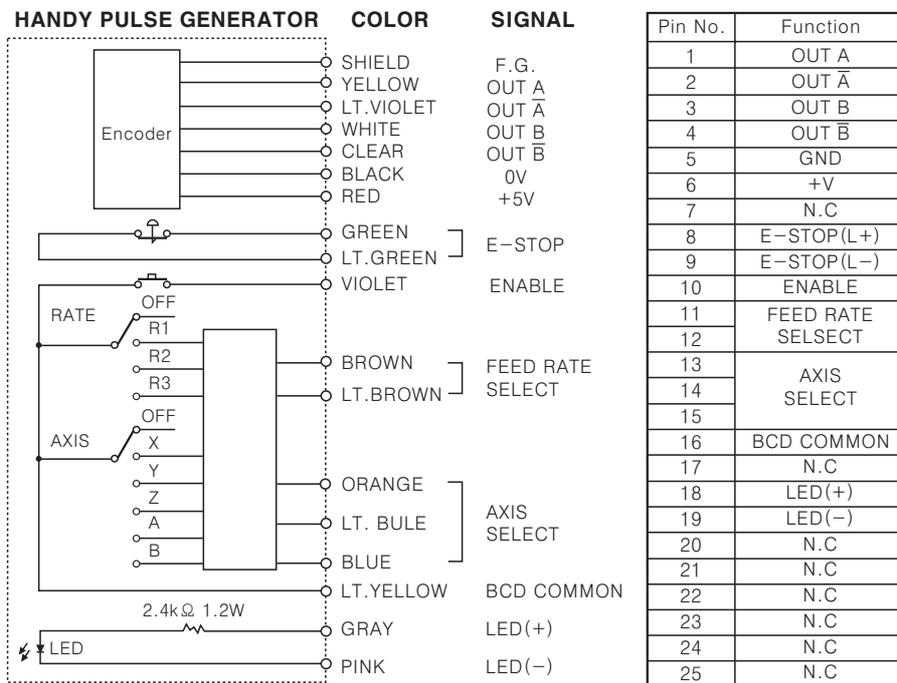
ENHP Series

▣ Control output diagram

Line driver output

Rotary encoder circuit	Connection

- +V
- A phase output
- Ā phase output
- 0V

(Main circuit)

※The output circuit of A, Ā, B, B̄ phase is same.

▣ Output waveform

ENHP−100−1−L−5	ENHP−100−2−L−5

ENHP−100−1−L−5:
- A phase — $\frac{T}{2} \pm \frac{T}{4}$
- Ā phase
- $\frac{T}{4} \pm \frac{T}{8}$
- B phase
- B̄ phase
- Clickstopper position (Normal "H")

ENHP−100−2−L−5:
- A phase — $\frac{T}{2} \pm \frac{T}{4}$
- Ā phase
- $\frac{T}{4} \pm \frac{T}{8}$
- B phase
- B̄ phase
- Clickstopper position (Normal "L")

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

▣ Connections

HANDY PULSE GENERATOR	COLOR	SIGNAL
Encoder	SHIELD	F.G.
	YELLOW	OUT A
	LT.VIOLET	OUT Ā
	WHITE	OUT B
	CLEAR	OUT B̄
	BLACK	0V
	RED	+5V
	GREEN	E−STOP
	LT.GREEN	
	VIOLET	ENABLE
RATE (OFF, R1, R2, R3)	BROWN	FEED RATE SELECT
	LT.BROWN	
AXIS (OFF, X, Y, Z, A, B)	ORANGE	AXIS SELECT
	LT. BULE	
	BLUE	
	LT.YELLOW	BCD COMMON
2.4kΩ 1.2W / LED	GRAY	LED(+)
	PINK	LED(−)

Pin No.	Function
1	OUT A
2	OUT Ā
3	OUT B
4	OUT B̄
5	GND
6	+V
7	N.C
8	E−STOP(L+)
9	E−STOP(L−)
10	ENABLE
11	FEED RATE SELSECT
12	
13	AXIS SELECT
14	
15	
16	BCD COMMON
17	N.C
18	LED(+)
19	LED(−)
20	N.C
21	N.C
22	N.C
23	N.C
24	N.C
25	N.C

● AXIS SELECT

AXIS	OUTPUT		
	15	14	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

● FREE RATE SELECT

RATE	OUTPUT	
	12	11
OFF	0	0
R1	0	1
R2	1	0
R3	1	1

▣ Dimensions

Dimensions: 1, 38, 19.5, 13, 6, 33.8, 80, 55, 26, 150, 75, 150, 900, 650, ø23

(Unit:mm)