

INCREMENTAL
SHAFT TYPE

S48 Series

- **Features** : Various resolution, 10~6000 P/R(31 class)
Wide ranging power voltage, Customized desing,
Prompt delivery



Model

INCREMENTAL
SHAFT TYPE
Outer Diameter Ø 48

Shaft Size
8 : Ø 8

S48 - 8 - [] [] [] [] - [] [] - []

Resolution (P/R)
0010 0030 0048 0050 0060
0072 0075 0100 0120 0125
0192 0200 0250 0256 0300
0360 0400 0500 0512 0600
0720 1000 1024 1200 2000
2048 2500 3000 3600 5000
6000

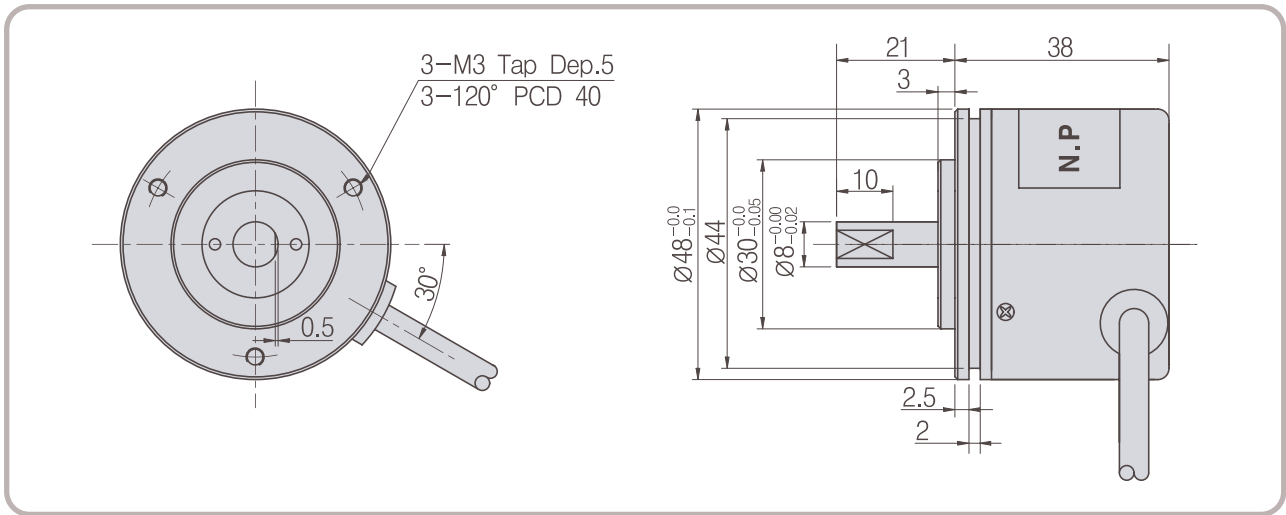
Output Signal
B : A, B
Z : A, B, Z
Z̄ : A, B, Z̄
U : A, \bar{A} , B, \bar{B}
V : A, \bar{A} , B, \bar{B} , Z, Z̄

Output Form
O : Open Collector
V : Voltage Output
C : Complemental
T : Totem Pole
L : Line Driver

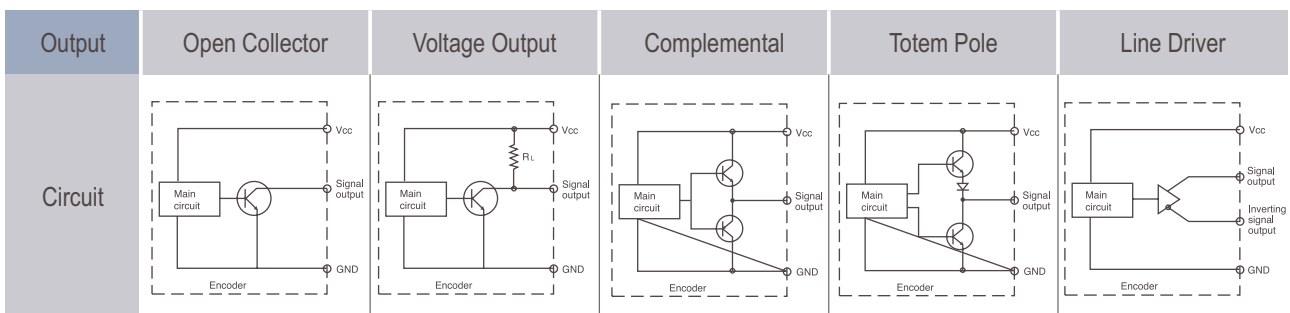
Cable Length
1 : 1 [M]
2 : 2 [M]
3 : 3 [M]
4 : 5 [M]
5 : 10 [M]

hesepc of power may be different depending on the type output and be sure to check the electric spec.

External Dimension



Output Circuit



Electrical Spec.

Output	Open Collector	Voltage Output	Complemental	Totem Pole	Line Driver
Power Supply	DC +5[V] ~ +24[V] Ripple p-p : less than 5%	DC +5[V] ~ +24[V] Ripple p-p : less than 5%	DC +15[V] ~ +24[V] Ripple p-p : less than 5%	DC +5[V] ~ +24[V] Ripple p-p : less than 5%	DC +5[V] Ripple p-p : less than 5%
Consuming Current (In case of no load)	70mA Max	70mA Max	150mA Max	150mA Max	150mA Max
Maximum Response Frequency	150kHz (10 ~ 2048 P/R) / 300kHz (2500 ~ 6000 P/R)				
Output voltage	Less than V-0.5[V]/ More than V-2.5[V], (In case of in outling + 5V), / More than V-10[V] (In case of in outling +15V), / More than V-18[V] (In case of in outling + 24V)				
Output current	Less than 20mA	Less than 20mA	Less than 10mA	Less than 10mA	Less than 20mA
Rising,decline time	Less than 3μs	Less than 3μs	Less than 1μs	Less than 1μs	Less than 0.1μs
Common conditions	In case that the cable length of output side is 1[M] and load resistance is less than 1[kΩ]				

* The pulse is available up to 3.600P/R Complemental type

* In case of more than 5.000P/R the in put power should be +5[V] ~+15[V] (Except line driver)

Mechanical Spec.

Starting Torque	80g - cm Max
Maximum number of revolution	6000 rpm
Bearing lifetime	27,000 [hr] (in case of rotating by 5000 rpm)
Allowable Shaft Load	Radial : 2,5 kg Max Axial : 1,3 kg Max
Position deflection of allowable shaft	Radial : Less than 0,05 mm Axial : Less than 0,2 mm
Connection table	4P(AWG26) Shield CABLE
weight	206 g

Rigid Spec.

Operating Temp. Range	10°C ~ 70°C (No freezing)
Preserving temp	-20°C ~ +85°C
Using humidity	35% ~ 85% RH
Preserving Humidity	30% ~ 890% RH
Internal Vibration	5G
Internal Shock	100G
Degree of Protection	IP50

Output Phase Shift

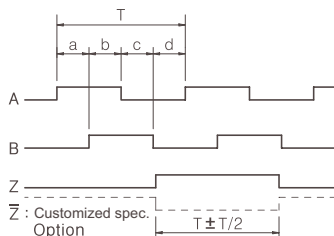
CW ➡ Clockwise viewed from shaft end

$$a + b, c + d = T / 2 \pm T / 10$$

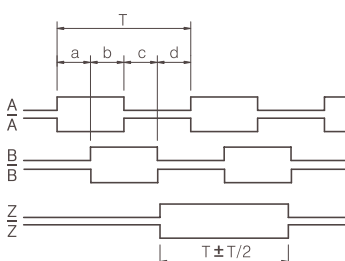
$$a, b, c, d = T / 4 \pm T / 10$$



**Open Collector, Voltage Output
Complemental, Totem Pole**



Line Driver



Conection Table

Cable's Color	Connection Table	
	Open Collector Voltage Output Complemental Totem Pole	Line Driver
Red	Vcc	Vcc
Black	GND	GND
Green	A Sig	A Sig
Blue	—	\bar{A} Sig
White	B Sig	B Sig
Pink	—	\bar{B} Sig
Yellow	Z Sig	Z Sig
Orange	—	\bar{Z} Sig
Shield	CASE Shield	CASE Shield