

ROTARY ENCODER PSC

INSTRUCTION MANUAL

We appreciate you for purchasing HanYoung NUX Co.,Ltd product. Before using the product you have purchased, check to make sure that it is exactly what you ordered. Then, please use it following the instructions below.



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HANYOUNG NUX

■ Safety Information



- Before using the product you purchased, make sure that it is exactly what you ordered.
- Make sure that there is no damage or abnormality of the product during the delivery.
- The transmitter for measuring the length is composed of precision parts, so can easily be damaged with external impact, therefore handle with care.
- The shield wire of the transmitter for length measurement is not connected to the case.
- When the product gets wet, the inspection is essential because there is danger of an electric leakage or fire.
- For the continuous and safe use of this product, the periodical maintenance is recommended.
- If you use the product with methods other than specified by the manufacturer, there may be bodily injuries or property damages.

■ On Mega Test

An internal pressure of 500 V d.c exists between the Case and the electric circuit, however, there are dangers of damage the electrical circuit if voltage is applied accidentally, so do not perform mega tests.

■ On Installation

- During installation, do not apply impact on or twist the shaft of the transmitter for length measurement.
- During installation, do not apply excessive force when combining the shaft of transmitter for length measurement and the instrument.
- During installation, take caution because the life span of the transmitter for length measurement is dependent on the usage condition and the environment.
- Do not decompose, modify, revise or repair this product. This may be a cause of malfunction, electric shock or fire.
- Reassemble this product while the power is OFF. Otherwise, it may be a cause of malfunction or electric shock.

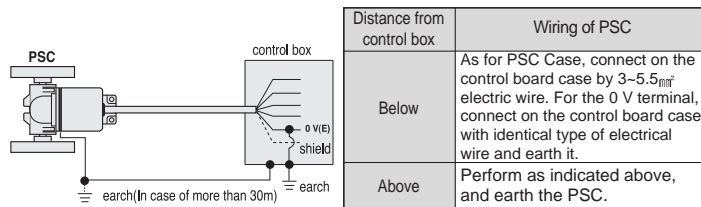
■ About Wiring

- Separate an input signal cable from an output signal cable. If separating is not possible, please use the input signal cable after shielding it.
- If there is excessive noise from the power supply, using insulating transformer and noise filter is recommended.
- Do not connect anything to the unused terminals.
- After checking the polarity of terminal, connect wires at the correct position.
- As for wiring, ensure they are as short as possible.
- Having the same pipe for wiring of the transmitter for length measurement with the power line or an identical connection could cause malfunction, therefore please take caution.
- Wrong connection of the wiring of transmitter for length measurement may damage the internal circuit. Please take sufficient caution.

■ About Vibration

- If intense vibration or impact is applied on the transmitter for length measurement, the wrong pulse is generated causing malfunction, therefore, absolute care is necessary when selecting the installation and disposition location.
- As much as the amount of pulse per cycle, the slit gap of rotation slit is narrower, therefore can be easily affected by vibration, and the vibration applied during slow rotation or when stationary, may get transmitted to the shaft or the main body, causing wrong pulse generation, therefore, please take caution. The vibration applied to the transmitter for length measurement can become a cause for wrong pulse generation, so please take caution in terms of installation location or location for attachment.

■ For Noise Prevention



※ The caution on the safety stated above, must be kept, otherwise malfunction can be induced.

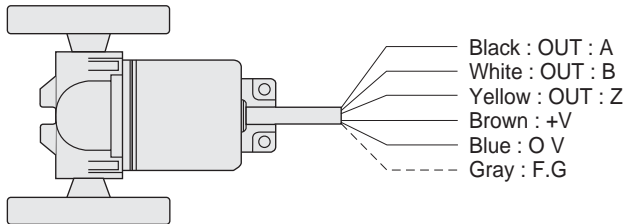
■ Specification

Model	PSC-MA-AB-N PSC-MB-AB-N PSC-MC-AB-N PSC-YA-AB-N PSC-YB-AB-N PSC-YC-AB-N	PSC-MA-AB-O PSC-MB-AB-O PSC-MC-AB-O PSC-YA-AB-O PSC-YB-AB-O PSC-YC-AB-O	PSC-MA-AB-T PSC-MB-AB-T PSC-MC-AB-T PSC-YA-AB-T PSC-YB-AB-T PSC-YC-AB-T
Output type	NPN voltage Output		
Output phase	A phase, B phase (※PSC-MB-□□□PSC-MC-□□□PSC-YC-□□□are available with Z phase output)		
Phase difference of output	Phase difference between A and B phase : T/4 ±T/8(1 cycle of A phase = T)		
Max. response	180 KHz		
Power voltage	12 - 24 V d.c (± 5 %)		
Power Consumption	Max. 60 mA		
Connection type	WIRE Connection		
Control Output	• Load Voltage : Max. 30 V • Load Current : Max. 30 mA • Remaining voltage : Max. 0.4 V		
Response speed	Max. 1 μs (Wire length: 2 m, I _{load} = 30 mA)		
Moving torque	Max. 200 gf.cm (19600 uN.m)		
Shaft inertial moment	Max. 800 g.cm ² (8 × 10 ⁻⁶ kg.m ²)		
Shaft allowable load	Radial : Below 0.1 mm, Thrust: Below 0.2 mm		
Max. allowable revolution	5000 rpm		
Life span of bearing	1.2 × 10 ⁸ / rpm: Time		
Insulation resistance	Min. 500 MΩ(Between all terminals and case)		
Dielectric strength	500 V a.c (Between all terminals and case for 1 minute at 50 Hz)		
Vibration	10 - 55 Hz(for 1 minute cycle), double amplitude width:1.5 mm, in each direction of X · Y · Z for 2 hours		
Shock	Max. 75 G		
Operating ambient temperature	- 10 ~ 60 °C (Without freezing), Storage : - 25 ~ 85 °C		
Operating ambient humidity	35 ~ 85 % R.H.		
Protection	IP 50 (IEC Standard)		
Cable	5P, Ø6.0 mm, Length : 2 m (Shielded cable)		
Weight	About 657 g		

Product Classification

PSC	MA	AB	T	24
Model	Min. measuring length	Output phase	Output	power voltage
Wheel type Rotary Encoder (INCREMENTAL TYPE)	• MA: 1 m • MB: 1 cm • MC: 1 mm • YA: 1 YARD • YB: 0.1 YARD • YC: 0.01 YARD	• AB: A, B Phase	• N: NPN voltage output • O: NPN open collector output • T: Totem pole output	12: 12 V d.c (5 - 12 V d.c) 24 - 24 V d.c (12 - 24 V d.c)

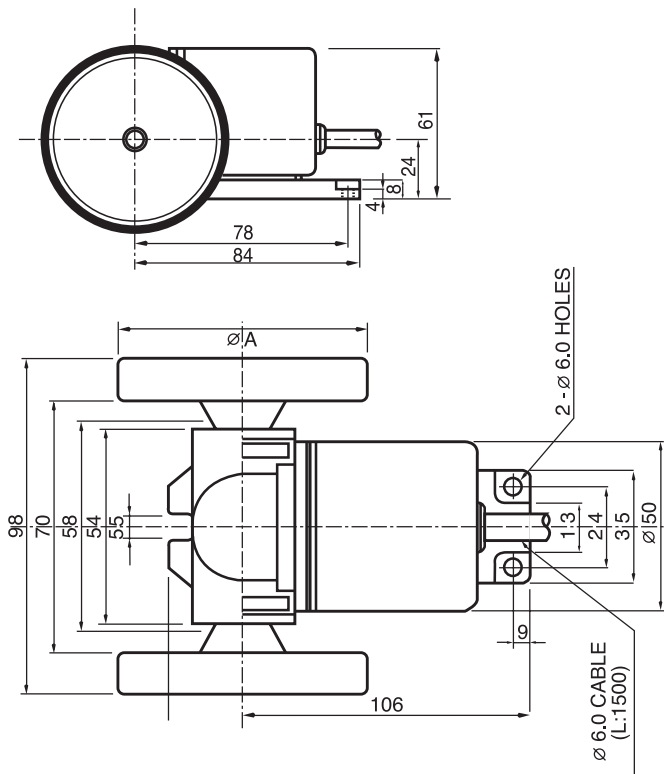
Connection



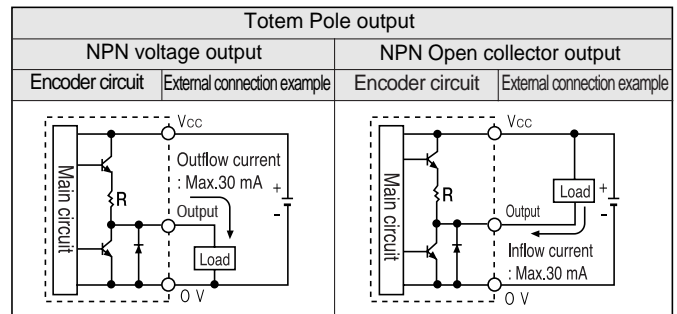
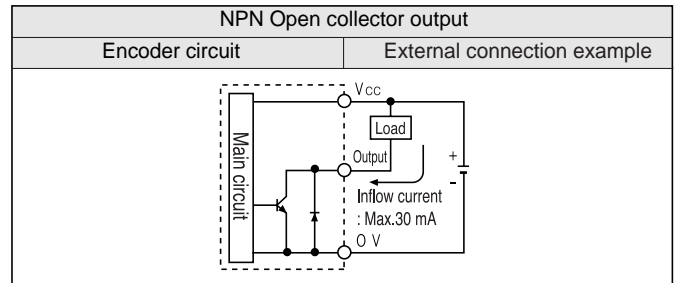
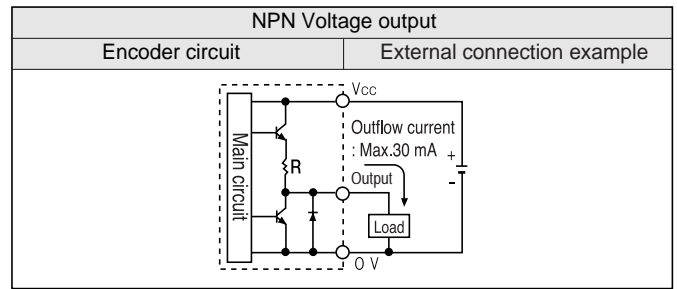
※ Shield wire is not Connected to enclosure

Dimension

[Unit : mm]



Control Output Circuit



Output Wave

■ NPN voltage Output, NPN open collector output, Totem Pole output

Output	Clock Wise	Conter Clock Wise
OUT A		
OUT B		
OUT Z		

* CW : Direct rev. is clockwise in shaft position
 * CCW : Counterclock wise in shaft position-Reverse revolution

Product Classification

Model	Measuring Unit	Ratio of gear	Wheel girth	Pulse/4 Revolution
PSC-MA-□□-□	1 m	4:1	250 mm	1 Pulse
PSC-MB-□□-□	1 cm	4:1	250 mm	100 Pulse
PSC-MC-□□-□	1 mm	2:1	250 mm	500 Pulse
PSC-YA-□□-□	1 YARD	4:1	228.6 mm (0.25/Yd)	1 Pulse
PSC-YB-□□-□	0.1 YARD	4:1	228.6 mm (0.25/Yd)	10 Pulse
PSC-YC-□□-□	0.01 YARD	4:1	228.6 mm (0.25/Yd)	100 Pulse