

Wheel type encoder

PSC

INSTRUCTION MANUAL

Thank you for purchasing HANYOUNG product.
Please check whether the product is the exactly same as you ordered.
Before using the product, please read this instruction manual carefully.
Please keep this manual where you can view at any time



HANYOUNG NUX

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Safety information

	DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury
	WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
	CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury

Warning

- Since this product is not designed as a safely used device the user must install double safety equipment when this product is used for equipment with possible fatal accident or large property damage.

Caution

- 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.

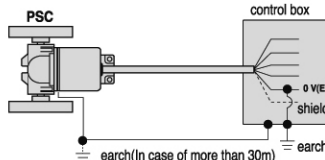
■ About Wiring

- 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



Distance from control box	Wiring of PSC
Below	As for PSC Case, connect on the control board case by 3~5.5mm ² electric wire. For the 0 V terminal, connect on the control board case with identical type of electrical wire and earth it.
Above	Perform as indicated above, and earth the PSC.

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

Suffix code

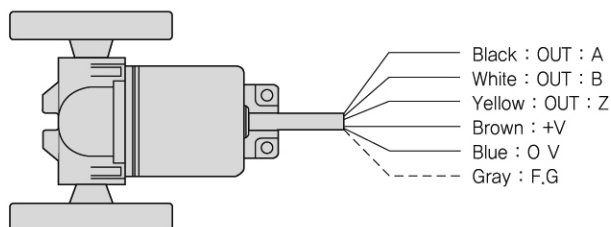
Model	Code	Information
PSC-	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Wheel type encoder
Min length measurement	MA	1 m
	MB	1 cm
	MC	1 mm
	YA	1 YARD
	YB	0.1 YARD
	YC	0.01 YARD
Output signal	AB	A, B phase output (PSC-MA, YA), Rests are A, B, Z phase output
	N	NPN voltage output
	O	NPN open collector
Output circuit	T	Totempole output
	12	12 V d.c (5 - 12 V d.c)
Power supply voltage	24	24 V d.c (12 - 24 V d.c)

※ Code PSC-MA and PSC-YA are A, B phase output. Rests are A, B, Z phase output

Length measurement code chart

Model	Code	min Measuring length	Gear ratio	Circumference of wheel	Pulse/1 Revolution
PSC	MA	1 m	4 : 1	250 mm	1 Pulse
	MB	1 cm	4 : 1		100 Pulse
	MC	1 mm	2 : 1		500 Pulse
	YA	1 YARD	4 : 1	228.6 mm (0.25/Yd)	1 Pulse
	YB	0.1 YARD	4 : 1		10 Pulse
	YC	0.01 YARD	4 : 1		100 Pulse

Connection



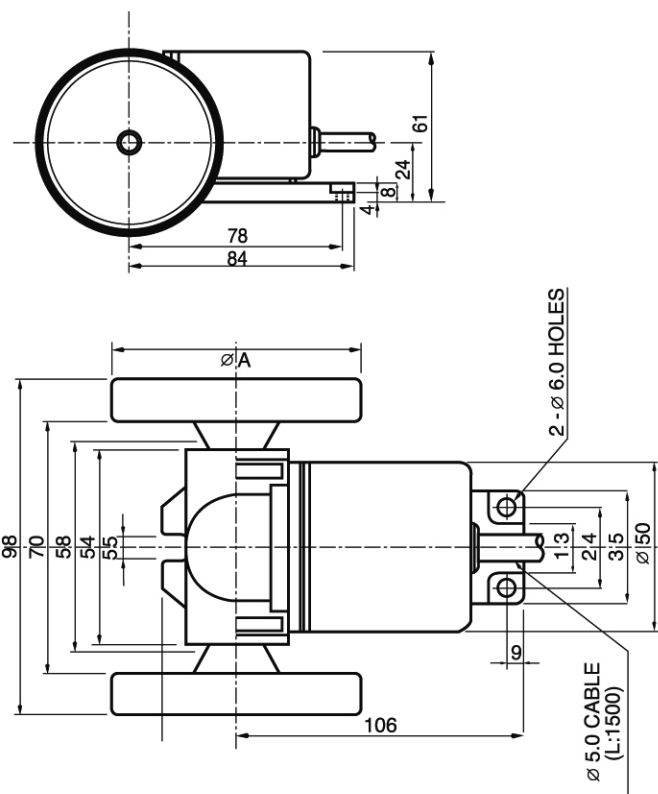
※ Shield wire is not Connected to enclosure

Specification

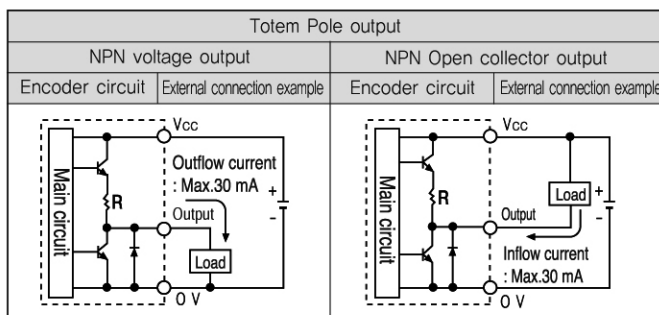
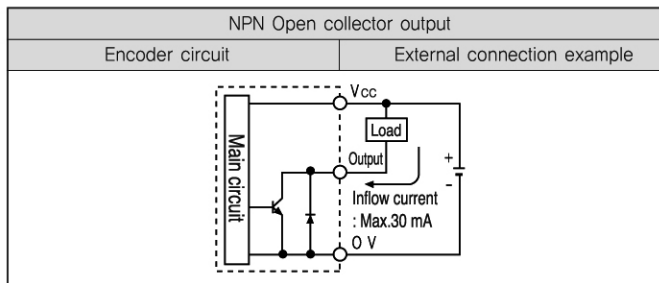
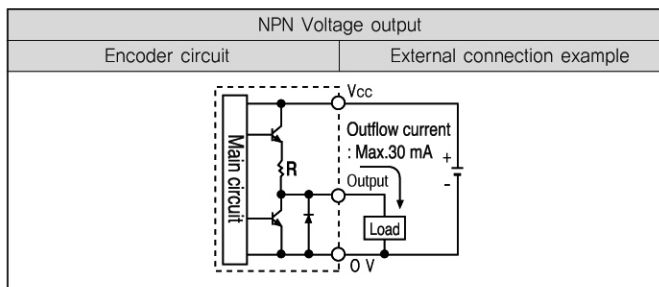
Model	PSC-□□-□□-□□-□□-□□	PSC-□□-□□-□□-□□-□□	PSC-□□-□□-□□-□□-□□
Output type	NPN voltage output	NPN opencollector	Totem Pole output
Output phase	A, B phase output (PSC-MA, YA), Rests are A, B, Z phase output		
Phase difference of output	Phase difference between A and B phase : $T/4 \pm T/8$ (1 cycle of A phase = T)		
Max. response	100 kHz		
Power voltage	5 - 12 V d.c / 12 - 24 V d.c ($\pm 5\%$)		
Power Consumption	60 mA max.		
Connection type	Cable extended type		
Control Output	<ul style="list-style-type: none"> • Load Voltage : 30 V max. • Load Current : 30 mA max. • Remaining voltage : 0.4 V max. • LOW • Load Current : 30 mA max. • Remaining voltage : 0.4 V max. • HIGH • Load Current : 10 mA max. • Remaining voltage : 0.4 V max. • Power Voltage - 1.5 V min. 		
Response speed	1 μ s max (Wire length : 1.5 m, $I_{SNK} = 30$ mA)		
Starting torque	200 gf · cm (19,600 u N · m) max.		
Shaft inertial moment	5,000 r/min		
Insulation resistance	500 M Ω min. (Between all terminals and case)		
Dielectric strength	500 V a.c (Between all terminals and case for 1 minute at 50 Hz)		
Vibration resistance	10 - 55 Hz (for 1 minute cycle), double amplitude width 1.5 mm, in each direction of X · Y · Z for 2 hours		
Shock resistance	735 % max.		
Ambient temperature	-10 ~ 70 °C (Without freezing), Storage : -25 ~ 85 °C		
Ambient humidity	35 ~ 85 % R.H.		
Wire specification	5P, $\phi 5.0$ mm, Length : 1.5 m (Shielded cable)		
Weight	Approx. 625 g		

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