



# AC SERVO ENGINEERING INFORMATION

Coreless Motor Co.,Ltd

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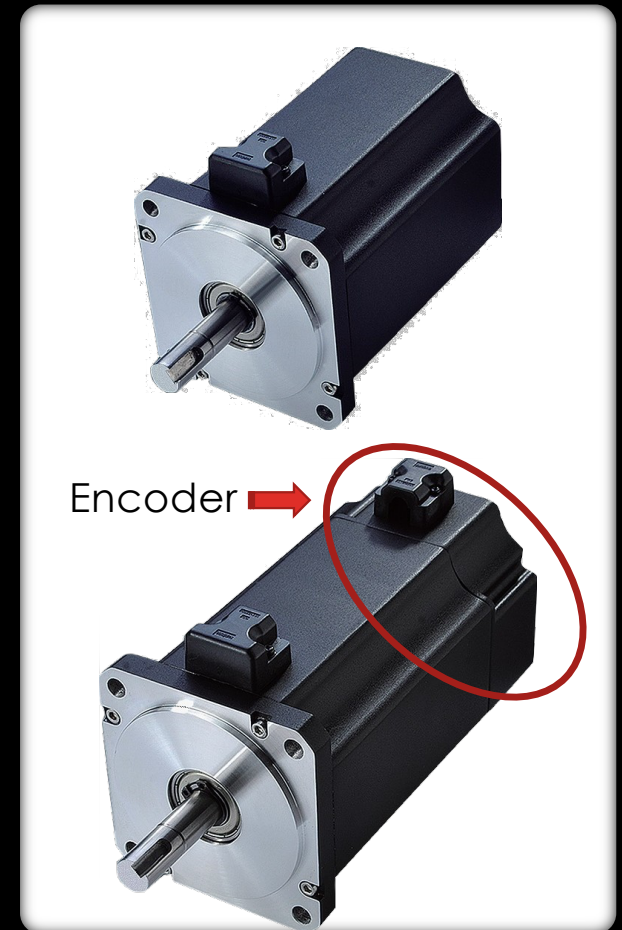
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# WHAT IS SERVO MOTOR ?

Servo is the origin of the word "Slave", and it is a motor that moves according to the instructions of the controller.

Generally, a brushless motor with an encoder, but sometimes a DC motor with an encoder.

Since the encoder constantly monitors the motor position, it is possible to freely control the motion.

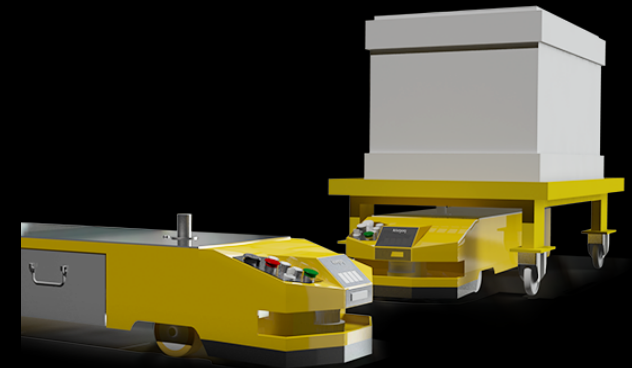


## \* CAUTION \*

- Common AC servo motors are driven by AC220V or AC110V, but our AC servo motors are targeted at battery-powered robots, so DC24V-48V drive is our motor's application.
- Motors driven by AC220V or AC110V are used for stationary robots
- 24VDC-48V drive AC servomotor is used for autonomous robots like AGV except in special cases.
- The encoder needs to determine whether the driver is compatible or not.



stationary robot



autonomous robot

# OUR ENCODER LINEUP



- Optical incremental encoder
- Optical absolute encoder
- Magnetic incremental encoder



Optical incremental/absolute encoder



Magnetic incremental encoder

# OPTICAL INCREMENTAL ENCODER

- Supplier: TAMAGWA SEIKI.Co.,Ltd
- Resolution: 2,500ppr
- Output Method: Line driver method
- Driving voltage: +5V
- Connection: U,  $\bar{U}$ , V,  $\bar{V}$ , W,  $\bar{W}$ , A,  $\bar{A}$ , B,  $\bar{B}$ , Z,  $\bar{Z}$
- Allowable rotation speed : 6,000rpm



## FEATURES

- Industry standard encoder. Even a small number can be purchased at a low price
- Easy to install

# OPTICAL ABSOLUTE ENCODER

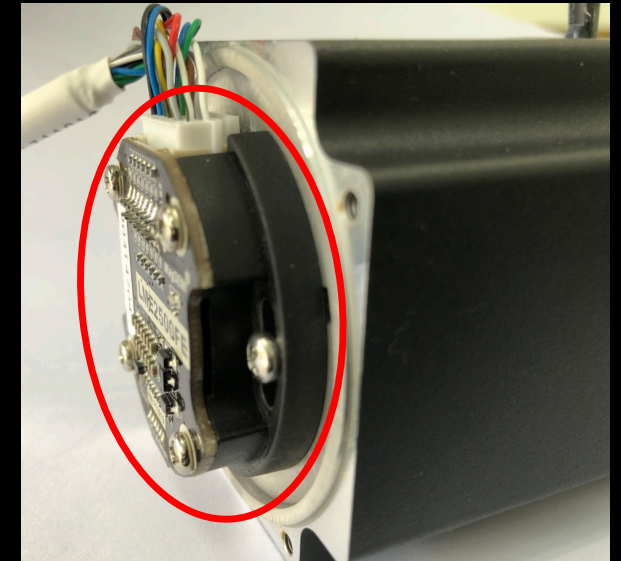


- Supplier: TAMAGWA SEIKI.Co.,Ltd
- 1 rotation resolution: 17bit
- Multi revolution count: 16bit
- Total resolution: 33bit
  - (When 17bit battery is not connected)
- Drive voltage: +5V
- Communication method: Serial data signal
- Serial communication spec: RS485 compliant
- Transmission data: One rotation data, Multi rotation data, Status flag
- Status flag: Over speed, Full-abso-status, Count-error, Counter over flow, Multi-rotation error, Battery alarm, Battery error
- Allowable rotation speed : 6,000rpm



# MAGNETIC INCREMENTAL ENCODER

- Resolution : 2,500ppr (Compatible with optical)
- Output Method: Line driver method
- Driving voltage: +5V
- Connection: U,  $\bar{U}$ , V,  $\bar{V}$ , W,  $\bar{W}$ , A,  $\bar{A}$ , B,  $\bar{B}$ , Z,  $\bar{Z}$
- Allowable rotation speed : 20,000rpm



## Features

- Thinner than optical encoders
- Strong against shocks