EN630 closed-loop control wiring and parameter setting

EN630 series mini high performance vector inverter adopts 32 bit DSP hardware platform, inbuilt in PG function, encoder inlet to terminal directly can achieve PG closed loop vector control, with advanced control algorithm, along speed vector and torque vector mode. It can achieve high precision control, fast response and good performance at low frequency, with smart detection and good protection, power range is 0.4KW～1.5KW, keypad with digital potentiometer and parameter copy function, easily operate and set parameter.

EN630 series product brief

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Encoder introduction

The encoder is a rotary sensor that converts the rotary displacement into a series of digital pulse signals that can be used to control the angular displacement. If the encoder is combined with the gear train or screwdriver, the linear displacement can be measured.

According to the output signal, the encoder can be divided into differential and collector.

EN630 is applicable to collector incremental encoder, no need to add a separate PG card.

Encoder line number: refers to a circle line of photoelectric encoder, such as 1024 lines, 2048 lines.

Encoder resolution: the smallest recognizable angle of encoder in the normal work, such as 2500 lines incremental encoders, combined with A / B phase quadruple, we can calculate the resolution is (360 ∕ 100000) degrees
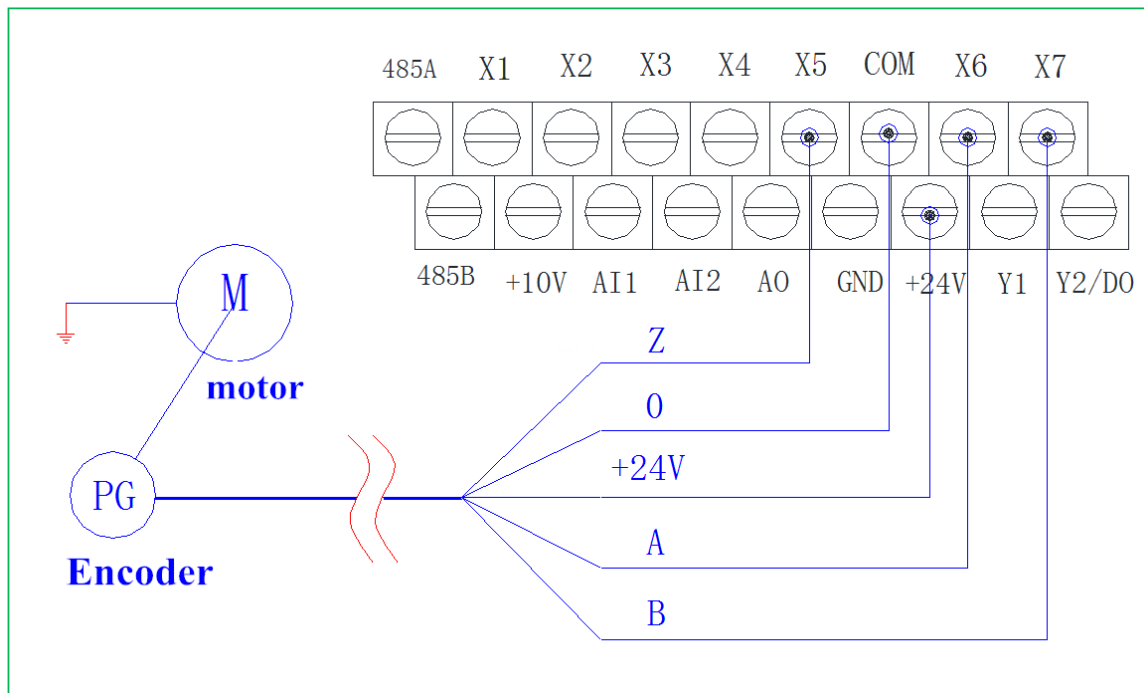
EN630 closed-loop control

1. EN630 closed-loop system
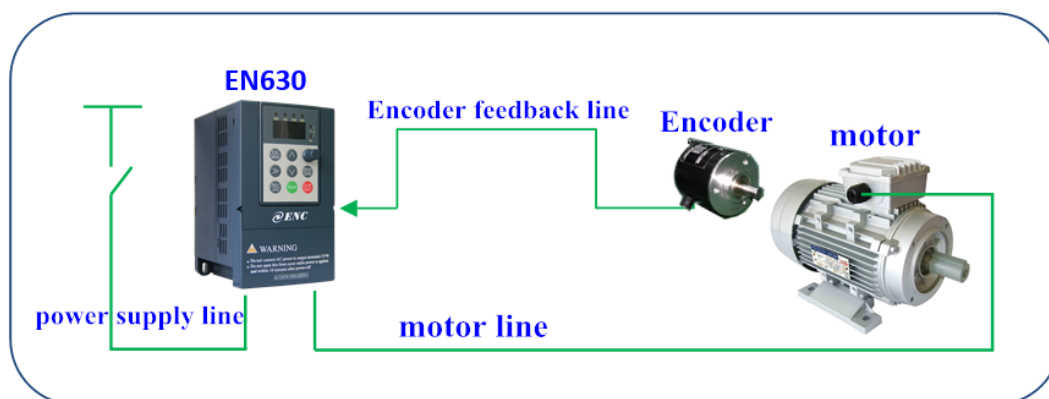
2. Encoder example introduction

Specification and parameter of   E6B2-CWZ6C Type （example）

Brown line	Power supply（VCC）	Connect +24V terminal
Black line	The encoder output A phase	Connect X6 terminal
White line	The encoder output B phase	Connect X7 terminal
Orange line	The encoder output Z phase	Connect X5 terminal

Blue line	0V	Connect COM terminal
Encoder line	2000	set F16.01=2000

3. EN630 and encoder wiring diagram

4. EN630 and encoder physical wiring demonstration
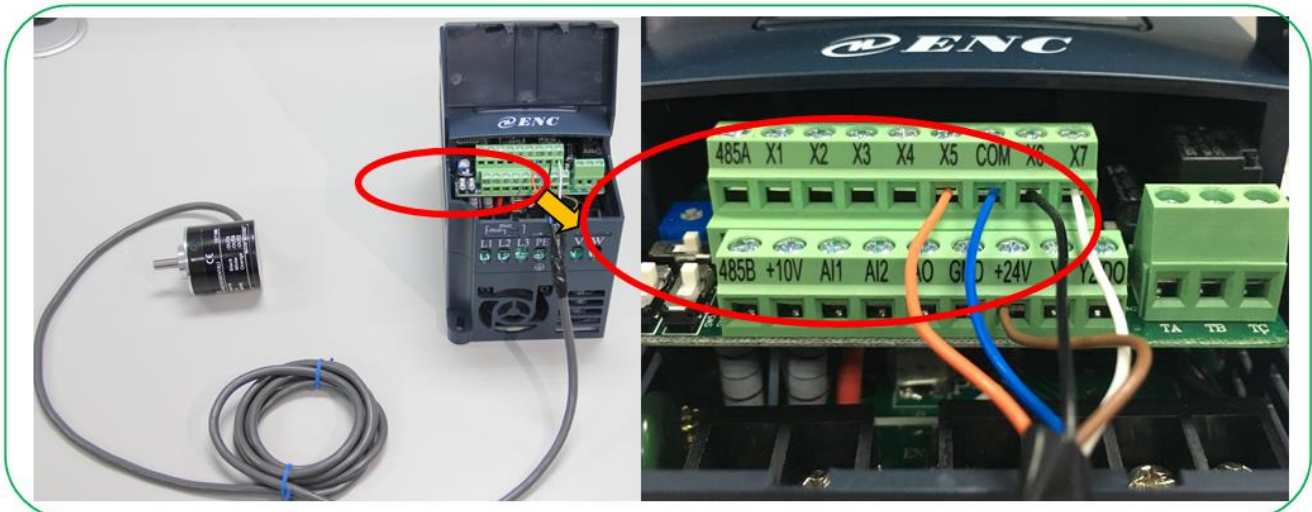
5. Installation demonstration of encoder and motor.

6. Set main parameters of inverter

Closed loop control basic parameters

F00.00=2	Senior list mode	Senior list mode is valid
F00.19=3	Incremental PG encoder	Encoder and X5/X6/X7 terminal function is valid
F00.24=2	Speed sensor vector control	The closed loop vector is valid
F16.01=2000	Encoder line number	Set encoder line number
F16.02=00	AB phase sequence	Regulate AB phase sequence

Motor self - learning parameters

F15.01	Asynchronous motor rated power	Base on motor type
F15.02	Asynchronous motor rated voltage	Base on motor type
F15.03	Asynchronous motor rated current	Base on motor type
F15.04	Asynchronous motor rated frequency	Base on motor type
F15.05	Asynchronous motor rated rotational speed	Base on motor type
F15.06	Asynchronous motor poles No.	Base on motor type

Remarks

1. If motor is overcurrent or overload and the motor rotation is weak when start the motor, the encoder AB phase sequence reverse, choose one of the following ways to correct:

Modify the F16.02 value (F16.02 = 00 for the positive phase sequence, F16.02 = 01 for the reverse phase sequence)

Exchange A, B phase wiring

Exchange any two phases motor output line

2. Motor parameter self-tuning selection. For this function, set F15.19 = 2 (asynchronous motor rotate no-load to self-adjusting)would be better, this method can intelligently adjust the AB phase sequence F16.02 value.

3. Set other parameters according to the actual application.