

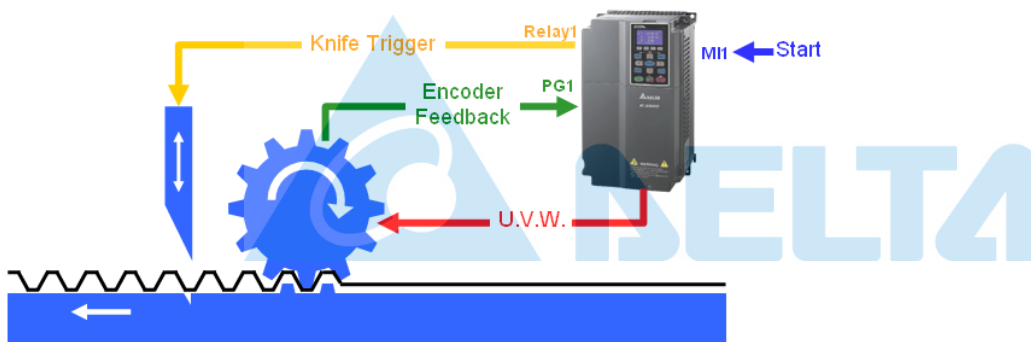
Case	Application: Delta C2000 Series AC Motor Drives for Fixed-Scale Cutting Systems				
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Applicable to	C2000 series AC motor drive				
Key words	C2000, point to point, fixed-scale cutting				

【Introduction】

The Delta C2000 series AC motor drive is a high-level field oriented control drive that adopts field oriented control (FOC) technology as the core control. It uses FOCPG (close-loop control) to attain precise torque control and position control. In the following application case, we will show you how to achieve precise point-to-point position control without using a host controller.

【System Structure】

In the metal woven mesh manufacturing process, metal is pressed into a wave shape and then trimmed into equal lengths. The C2000 AC motor drive can perform point-to-point position control and cut the metal into fixed-lengths without using a host controller. As shown in the diagram below, by connecting an external PG card to a C2000 drive, the encoder will feedback the motor position to the drive and the multi-function output terminal can trigger the cutting.



【Settings】

Make sure the C2000 drive operates normally in FOCPG mode:

- Set Pr.00-10→0 (Speed Mode)
- Set Pr.00-11→3. FOCPG (IM FOC vector control + encoder)
- Set Pr.10-00→ user defined value (Encoder Type)
- Set Pr.10-01→ user defined value (Encoder Pulse)
- Set Pr.10-02→ user defined value (Encoder Pulse Input Type)
- Set Pr.05-01~05-04→ user defined value (The full load current, rated power, rated speed and pole numbers of the motor)
- Set Pr.05-00→1. Motor auto tuning (after Pr.05-00 is set to 1 press RUN to begin auto-tuning by rolling test. The motor spins during the measuring period)
- For the trial run, check if the drive operates normally in FOCPG mode.

Set C2000 to Point-to-Point Control:

- a. Set Pr.00-10→1 (Point-to-Point Position Control)
- b. Set Pr.11-43→ user defined value (Frequency of Point-to-Point Position Control)
- c. Set Pr.11-44→ user defined value (Acceleration Time of Point-to-Point Position Control)
- d. Set Pr.11-45→ user defined value (Deceleration Time of Point-to-Point Position Control)
- e. Set Pr.04-15→ user defined value (Position 1 (Revolutions))
- f. Set Pr.04-16→ user defined value. (Position 1 (Pulses); Pr. 04-15 sets the number of revolutions at position 1 and Pr. 05-16 defines the require pulses after the revolution)
- g. Set Pr.2-01→1 Multi-function Input 1 (use multi-input terminal 1 (MI1) to define position 1)
- h. Set Pr.2-13→39 Multi-function Output 1 (when position is attained, use relay 1 to trigger the cut)

【Conclusion】

The Delta VFD-C series' offers versatile functions such as ease of control and modularization, a wide range of applications, and a competitive price. The C2000 series AC motor drive helps industry and end-users save on construction and operation costs for greater competitive advantage in the market.

For more information on Delta's industrial automation products, please visit our website at:
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