Digital Stepper Drive CWD860H

1. Introduction

Descriptions

The CWD860H is a new generation digital 2-phase stepper motor driver, based on a 32-bit DSP processor, combination of the anti-resonance, low noise, micro-step and low temperature rise technology significantly improve the performance of the stepper motor, has low noise, small vibration, low temperature rise and high-speed torque. The driver use online adaptive PID technology, without manual adjustment can be automatically generated optimal parameters for different motors, and achieve the best performance.

Supply voltage range from 40VAC to 80VAC or from 60VDC to 110VDC, suitable for driving various 2-phase hybrid stepping motors which phase current below 7.2A. The microstep can be set from full step to 51200steps/rev and the output current can be set form 2.4A to 7.2A; with automatic idle-current reduction, self-test, overvoltage, under-voltage and over-current protection.

Features

- High-performance, low price
- micro-step
- Automatic idle-current reduction
- Optical isolating signals I/O
- Max response frequency up to 200Kpps
- Low temperature rise, smooth motion
- Online adaptive PID technology

Applications

Suitable for a variety of large-scale automation equipments and instruments. For example: labeling machine, cutting machine, packaging machine, plotter, engraving machine, CNC machine tools and so on. It always performs well when applied for equipment which requires for low-vibration, low-noise, high-precision and high-velocity.

Electrical Specifications

Parameter	Min	Typical	Max	Unit
Input Voltage(DC)	60	-	110	VDC
Input Voltage(AC)	40	-	80	VAC
Output current	0	-	7.2	А
Pulse Signal Frequency	0	-	200	KHZ
Logic Signal Current	7	10	16	MA

2. Current and microstep Setting

Current setting

RMS	Peak	SW1	SW2	SW3
2.00A	2.40A	on	on	on
2.57A	3.08A	off	on	on
3.14A	3.77A	on	off	on
3.71A	4.45A	off	off	on
4.28A	5.14A	on	on	off
4.86A	5.83A	off	on	off
5.43A	6.52A	on	off	off
6.00A	7.20A	off	off	off

Standstill Current Setting

SW4 is used for standstill current setting. OFF meaning that the standstill current is half of the dynamic current; and ON meaning that standstill current is the same as the selected dynamic current. Usually the SW4 is set to OFF, in order to reduce the heat of the motor and driver.

Microstep Setting

Step/Rev	SW5	SW6	SW7	SW8
Default	on	on	on	on
800	off	on	on	on
1600	on	off	on	on
3200	off	off	on	on
6400	on	on	off	on
12800	off	on	off	on
25600	on	off	off	on
51200	off	off	off	on
1000	on	on	on	off
2000	off	on	on	off
4000	on	off	on	off
5000	off	off	on	off
8000	on	on	off	off
10000	off	on	off	off
20000	on	off	off	off
40000	off	off	off	off
40000	off	off	off	off

3. Connectors and Pin Assignment

Control signal Connector

Control Signal connector		
Name	Description	
PUL+	Pulse signal positive	
PUL-	Pulse signal negative	
DIR+	Direction signal positive	
DIR-	Direction signal negative	
ENA+	Enable signal positive, usually left unconnected(enable)	
ENA-	Enable signal negative, usually left unconnected(enable)	

Power and Motor Connector

AC	Power supply	
AC	+60~+110 VDC or 40V-80VAC	
A+		
A-	Motor phase A	
B+	Motor phase D	
B-	Motor phase B	

Control Signal Connector Interface

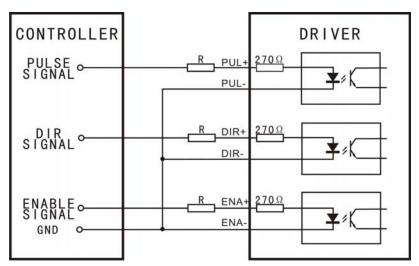


Figure1: Common-Cathode

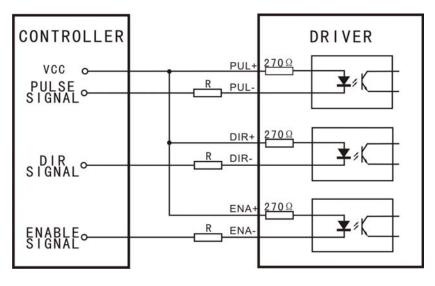


Figure2: Common-Anode



Changzhou Chuangwei Motor & Electric Apparatus Co., Ltd.

CWD860H

VCC	R
5V	0
12V	680Ω
24V	1.8KΩ

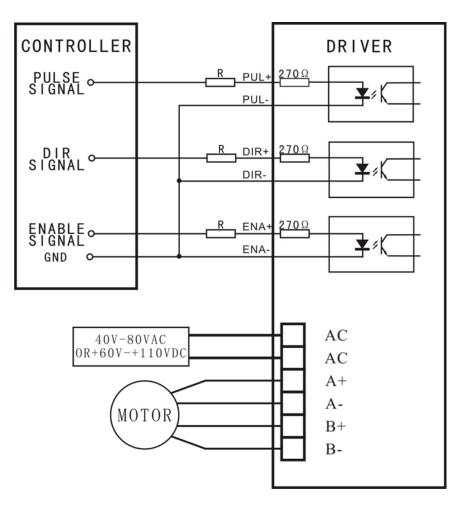


Figure 3: Typical connection

4. Problems and Solutions

problems	Possible cause	solutions	
	No power supply	Check the power supply	
Motor is not	No control signal	Check the control signal	
rotating	The driver is disabled	Don't connected the enable signal	
		or enable the driver	
	Supply voltage is too high or	Check the supply voltage	
	too low	Check the supply voltage	
AI M lights	Motor line short-circuit	Check motor lines eliminate the	
ALM lights		short-circuit	
	Motor line wrong connect	Check the motor wiring	
	Motor or drive failure	Replace the motor or drive	
Motor rotates in	Motor phases connected in	Reverse the phases line	
the wrong	reverse		
direction	Motor line break	Change the phases are connected	
Inaccurate	The Micro steps set incorrectly.	Set the correct segments	
Position	The motor load is too heavy.	Increasing the current	
Position	Control signal is interfered	Eliminate interference	
	Power supply voltage too low	Increasing the supply voltage	
Moton Stallad	Accelerating time is too short.	Extend the acceleration time	
Motor Stalled	Current setting is too small	Increasing the current	
	Motor torque is too small	Replace the motor	

5. Mechanical Specifications (unit: mm(inch),1 inch = 25.4mm)

