# **CWDS556** Closed Loop Stepping System 1. Introduction

### Descriptions

CWDS556 is a new generation hybrid servo driver, it combines the advantage of the servo system and stepper system, the system acts as nothing more than a high pole servo motor, the classic stepper motor noises and resonances vanish. Because the position is controlled, the motor can also no longer lose any steps up to its maximum torque.

#### Features

- Closed-loop control, no longer lose any steps, up to its maximum torgue;
- higher torque and higher speed;
- Fast response;
- Reduced motor heating and more efficient;
- Zero-speed stability;
- Smooth motion and super-low motor noise;
- No Tuning and always stable;
- Lower cost.

### Applications

CWDS556 is a low-cost, high-performance servo systems, suitable for a variety of large-scale automated equipments and instruments, such as low-cost, low vibration, noise, high-precision, high-speed devices, And it is ideal for applications where the equipment uses a belt-drive mechanism or otherwise has low rigidity and you don't want it to vibrate when stopping.

#### **Electrical Specifications**

Parameter	Min	Typical	Max	Unit
Input Voltage(DC)	20	-	50	VDC
Output Current	0	-	5.6	А
Pulse Signal Frequency	0	-	200	KHZ
Logic Signal Current	7	10	16	MA

## 2. Microstep and Dir Setting

#### **Steps/Revolution:**

Step/Rev	SW1	SW2	SW3	SW4
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

#### **Motor Direction (SW5)**

Motor Direction			
SW5	ON	OFF	
Direction	Motor direction is positive	Motor direction is negative	

#### Alarm Output(SW6)

Reference Chapter 3.2 output alarm port.

### 3. Connectors and Pin Assignment

The CWDS556 has four connectors, connector for control signals connections, connector for stator signal connections, connector for encoder feedback and connector for power and motor connections.

### **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)	

### **Stator Signal Connector**

Stator Signal Connector		
Name	Description	
Pend+	Alarm Signal: OC output, Normally closed, positive	
Pend-	Alarm Signal: OC output, Normally closed, negative	
ALM+	Alarm Signal: OC output, Normally open, positive	
ALM-	Alarm Signal: OC output, Normally open, negative	

### **Encoder Extension Cable Pin Out**

Name	Color
EGND	White
VCC	Red
EA-	Blue
EA+	Black
EB-	Green
EB+	Yellow

### **Power and Motor Connector**

Name	Description
VDC	Power supply, 20~500VDC
GND	ground
U	Motor phase U
V	Motor phase V
W	Motor phase W
Name	Description

### **Control Signal Connector Interface**

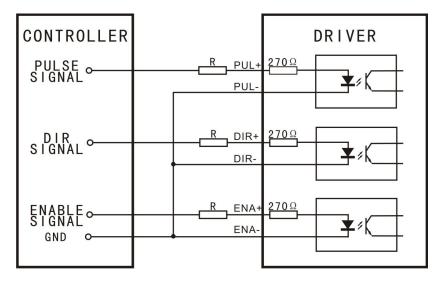


Figure1: Common-Cathode

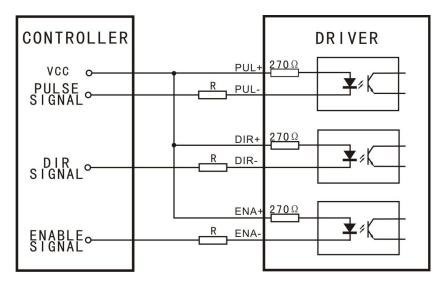


Figure2: Common-Anode

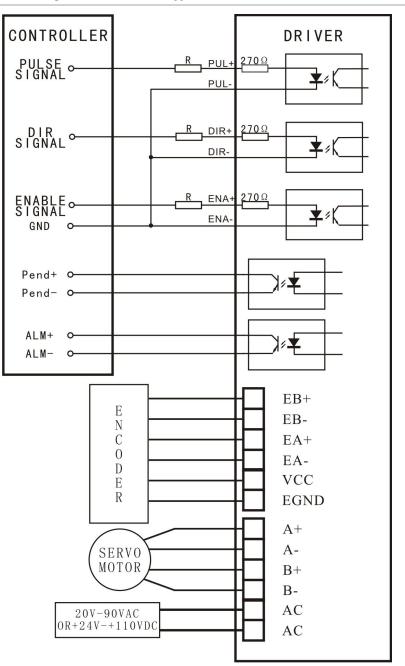


Figure 3: Typical Connection

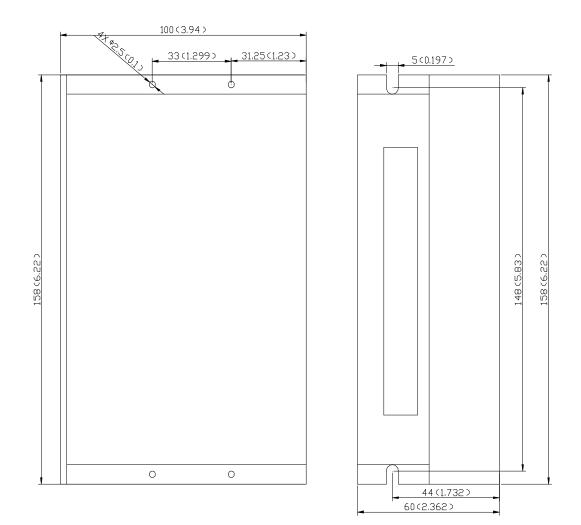
VCC	R
5V	0
12V	680Ω
24V	1.8KΩ

Table1

## 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		Don't connected the enable	
	The driver is disabled	signal or enable the driver	
	Supply voltage is too high or	Check the symmetry veltage	
	too low	Check the supply voltage	
	Motor line wrong connect	Check the motor wiring	
ALM lights	Encoder line wrong connect	Check the encoder wiring	
flashing	Motor line short-circuit	Check motor lines eliminate the	
	Wotor file short-encur	short-circuit	
	Motor or drive failure	Replace the motor or drive	
	Lose step	Restart driver	
Motor rotates in			
the wrong	SW5 setting wrong	Change SW5 state	
direction			
Inaccurate	The Micro steps set	Set the correct segments	
Position	incorrectly.	Set the correct segments	
	Control signal is interfered	Eliminate interference	
	Power supply voltage too	Increasing the supply voltage	
Motor Stalled	low	mereasing the suppry voltage	
	Accelerating time is too	Extend the acceleration time	
	short.		

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



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