Stepper Motor Driver CW5045

1. Introduction

Descriptions

The CW5045 driver is cost-effective, high performance stepping driver. The design is based on advanced control technology. It applies to two-phase or four-phase hybrid stepping motor below 4.5A, such as 85BYG, 57BYG, 42BYG. Due to the adoption of the advanced Bipolar constant-current chopper driver technology.It shows stable operation,provides excellent high speed torque. It has 14 kinds of micro-step, the maximum number of micro-step is l /256 (step number is 51200 steps/rev); its current range is l.5A-4.5A, the output current has 8 settings,and the current resolution is about 0.5A; it has automatic semi-flow,over-voltage, under-voltage and over-current protection functions. The driver is the DC power supply, the operating voltage range should be 24VDC-48VDC, it should not exceed 50VDC and not less than 20VDC.

Features

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

application

It is suitable for a variety of small-scale automation equipment and instruments. such as labeling machine, cutting machine. packing machine, plotter, engraving machine, CNC machine and so on.

Electrical Specifications

Parameter	Min	Typical	Max	Unit
Input Voltage(DC)	20	24	50	VDC
Output current	0	-	4.0	A
Pulse Signal Frequency	0	-	200	KHZ
Logic Signal Current	7	10	16	MA

2.parameter setting

Current setting

Switch: ON=0;OFF=1

Phase current（A）	SW1	SW2	SW3
1.5	0	0	0
2.0	1	0	0
2.4	0	1	0
2.8	1	1	0
3.2	0	0	1
3.7	1	0	1
4.2	0	1	1
4.5	1	1	1

Standstill Current Setting

SW4 is used for standstill current setting. OFF means that the standstill current is half of the dynamic current; and ON means 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.

Micro-step Setting

Dial switch：ON=0;OFF=1

Micro-step	SW5	SW6	SW7	SW8
2	0	0	0	0
4	0	1	0	0
8	0	0	1	0
16	0	1	1	0
32	0	0	0	1
64	0	1	0	1
128	0	0	1	1
256	0	1	1	1
5	1	0	0	0
10	1	1	0	0
25	1	0	1	0
50	1	1	1	0
125	1	0	0	1
250	1	1	0	1
DISABLE	1	0	1	1
DISABLE	1	1	1	1

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

GND	Power Ground
+VDC	Power supply, +20~+50 VDC
A+	Motor phase A
A-	
B+	Motor phase B
B-	

Control Signal Connector Interface

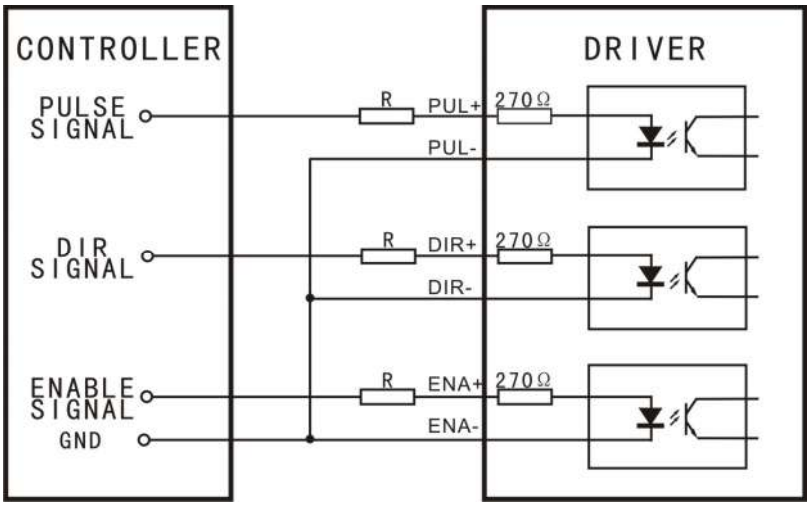

Figure1: Common-Cathode

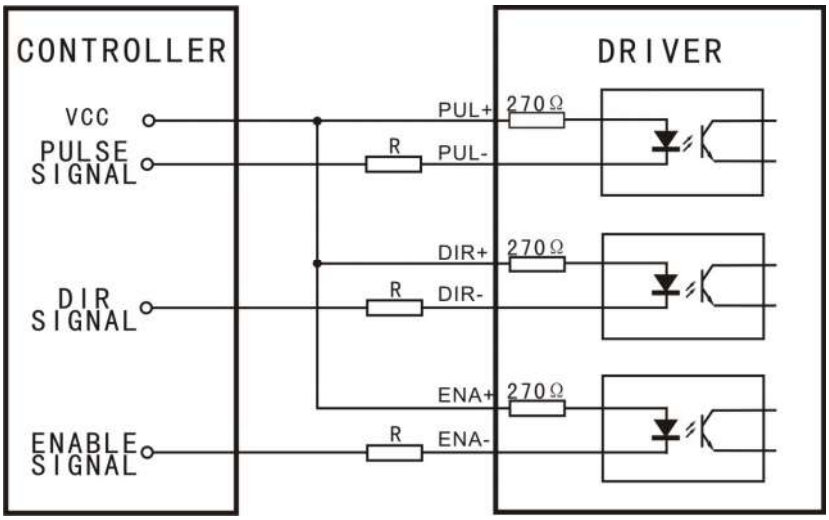

Figure2: Common-Anode

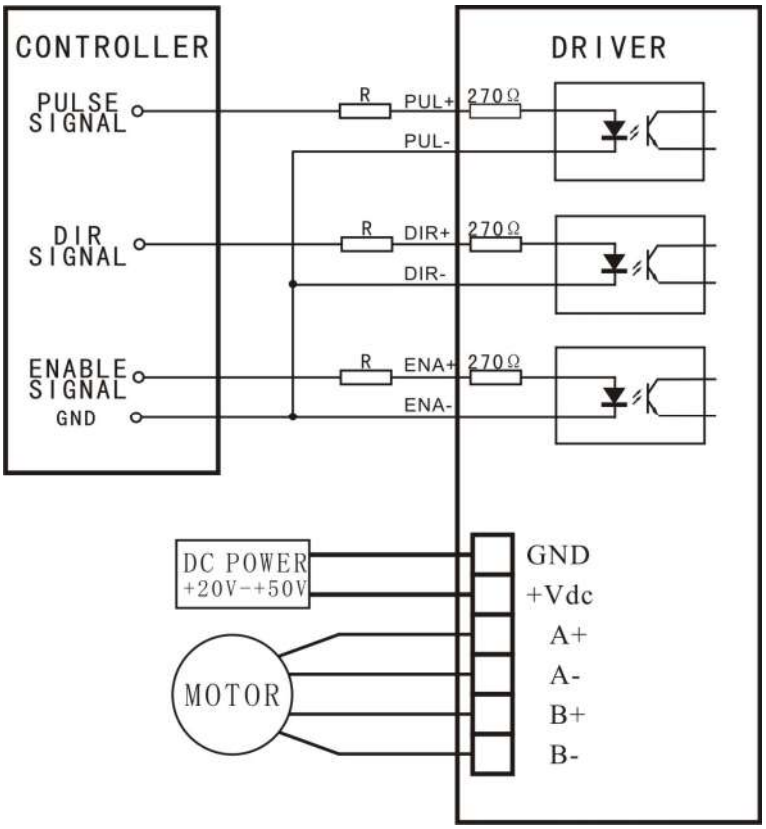

Figure 3: Typical connection

VCC	R
5V	0
12V	680Ω
24V	1.8KΩ

Table1

4. Problems and Solutions

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