Stepper Motor Driver KL-2283

1. Introduction

Descriptions

KL-2283 is a subdivided and high-performance stepper motor drive using constant angle and constant torque，which is designed for 130BYG 、110BYG and other 8A following two-phase, four-phase hybrid stepping motor. The driver uses the circuit which is Similar to the principle of servo control with the features of smooth running, low noise, low vibration, low temperature rise of the motor .It has 16 micro-step settings, and the micro-step can be set from 400 to 51200steps/rev. The working current can be set from 2.0A to 8.3A, and the output current has 16 stalls, the current resolution is about 0.5A; with automatic semi-flow, self-test, overvoltage, under-voltage and over-current protection. This driver is powered by AC power, Voltage should not exceed 240VAC and be given no less than 110VAC.

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

Applications

Suitable for a variety of large-scale automation equipment 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 low-vibration, low-noise, high-precision and high-velocity.

Electrical Specifications

Parameter	Min	Typical	Max	Unit
Input Voltage(AC)	110	-	220	VAC
Output current	0	-	8.3	A
Pulse Signal Frequency	0	-	200	KHZ
Logic Signal Current	7	10	16	MA

2 . parameter setting

Current setting

Dial switch：ON=0;OFF=1

Phase current	SW5	SW6	SW7	SW8
2.0	1	1	1	1
2.4	0	1	1	1
2.8	1	0	1	1
3.2	0	0	1	1
3.6	1	1	0	1
4.2	0	1	0	1
4.8	1	0	0	1
5.2	0	0	0	1
5.6	1	1	1	0
6.0	0	1	1	0
6.4	1	0	1	0
6.8	0	0	1	0
7.2	1	1	0	0
7.6	0	1	0	0
8.0	1	0	0	0
8.3	0	0	0	0

Standstill Current Setting

Half current is default.

Micro-step Setting

Dial switch：ON=0;OFF=1

Subdivision	SW1	SW2	SW3	SW4
400	0	0	0	0
800	1	0	0	0
1600	0	1	0	0
3200	1	1	0	0
6400	0	0	1	0
12800	1	0	1	0
25600	0	1	1	0
51200	1	1	1	0
1000	0	0	0	1
2000	1	0	0	1
4000	0	1	0	1
5000	1	1	0	1
8000	0	0	1	1
10000	1	0	1	1
20000	0	1	1	1
50000	1	1	1	1

3. Connectors and Pin Assignment

Control signal Connector

Signal	Function
FAULT-	Common anode input positive terminal
FAULT+	Common anode input positive terminal(+5V)
ENA-	Enable signal terminal motor is offline when Enable signal is active, no internal current.
ENA+	
DIR-	Direction signal terminal Direction control signal control the motor running direction.
DIR+	
PUL-	Pulse signal terminal Pulse signal control the motor to run motor run 1 step after each pulse.
PUL+	

Power and Motor Connector

AC	Power supply, 110~220VAC
AC	
A+	Motor phase A
A-	
B+	Motor phase B
B-	

Control Signal Connector Interface
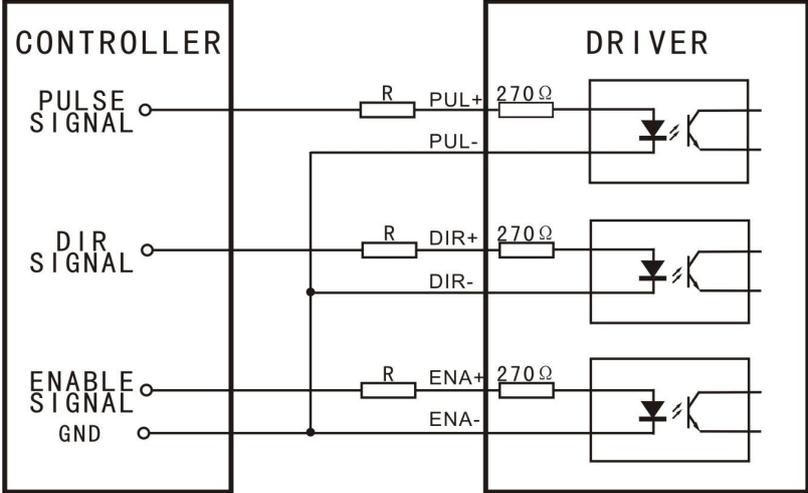
Figure1: Common-Cathode
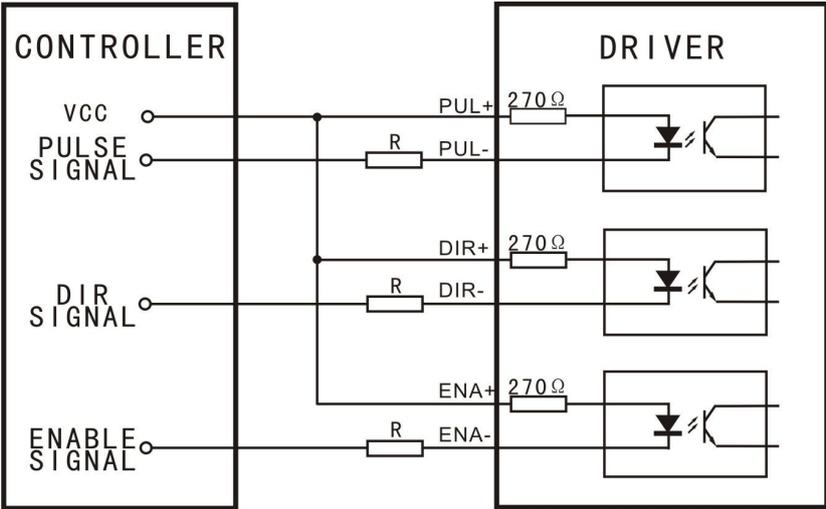
Figure2: Common-Anode
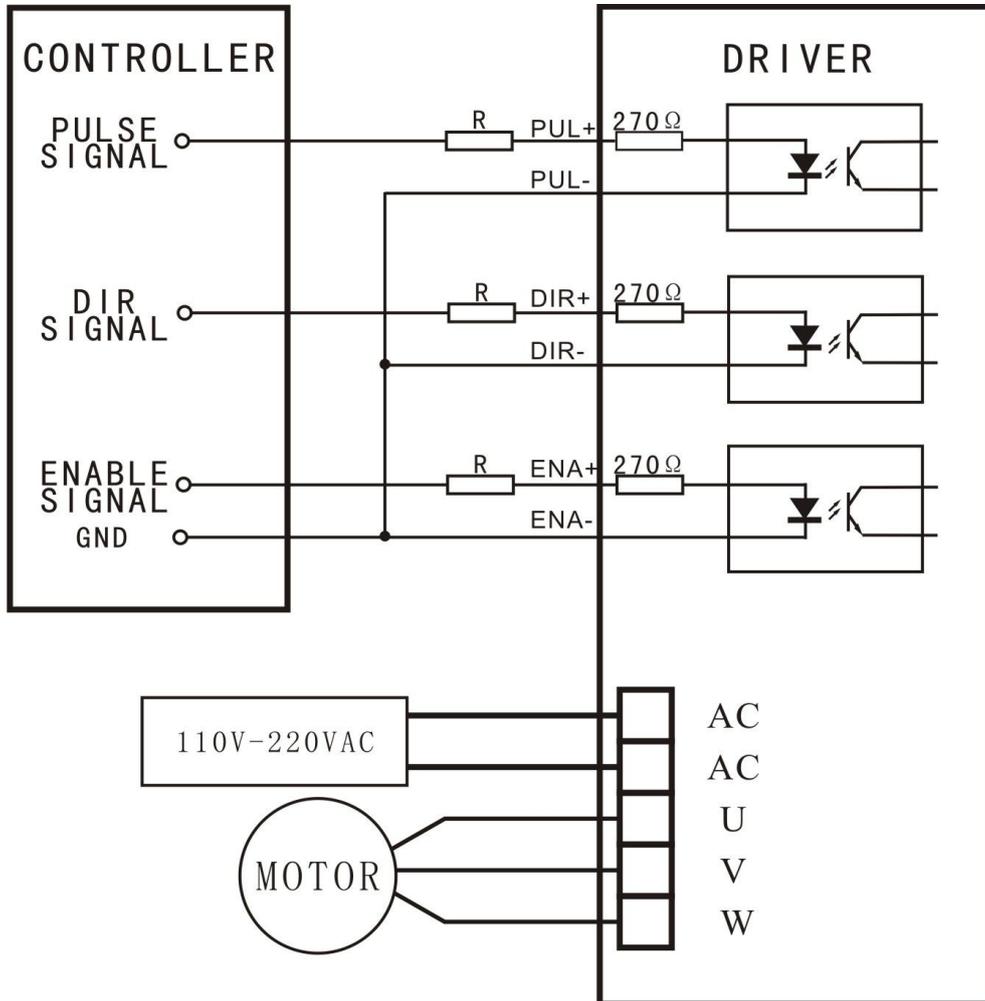
Figure 3: Typical connection

VCC	R
5V	不加
12V	1KΩ
24V	2KΩ

Table1

4. Problems and Solutions

Phenomenon	Possible Cause	Solutions
Fault indicator brightens red for a long time (over-current)	Electrical wire shorted	Check the motor lines and eliminate the short circuit
	Motor failure	Replace motor
	Other reasons	Check back

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