



Digital Stepper Drive SEA422C

1. Introduction

Descriptions

The SEA422C 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 18VDC to 40VDC, suitable for driving various 2-phase hybrid stepping motors which phase current below 2.2A. The microstep can be set from full step to 6400steps/rev and the output current can be set form 0.5A to 2.2A; 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 75Kpps.
- 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)	18	24	40	VDC
Output current	0	-	2.2	A
Pulse Signal Frequency	0	-	75	KHZ
Logic Signal Current	7	10	16	MA

2. Current and Microstep Setting

Current setting

Peak	SW1	SW2	SW3
Default	on	on	on
0.5A	off	on	on
0.7A	on	off	on
1.0A	off	off	on
1.3A	on	on	off
1.6A	off	on	off
1.9A	on	off	off
2.2A	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
Default	on	on
1600	off	on
3200	on	off
6400	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

GND	Power
+VDC	Power Supply, +18~+40 VDC
A+	Motor phase A
A-	
B+	Motor phase B
B-	

Control Signal Connector Interface

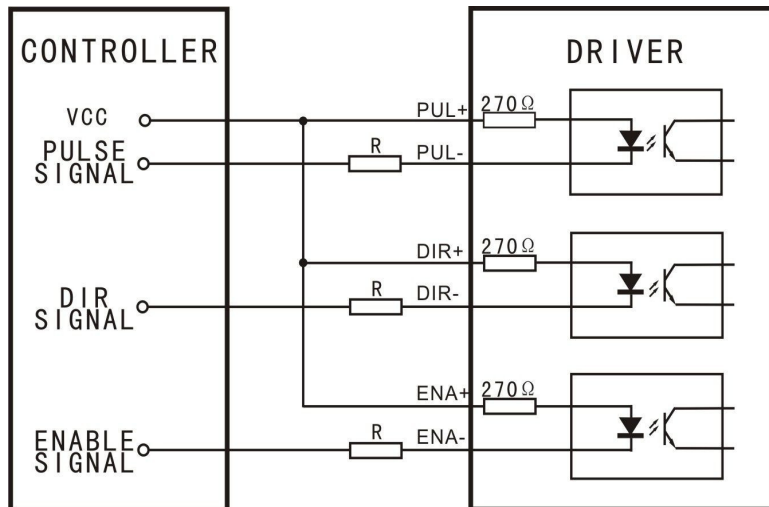


Figure1: Common-Anode

VC	R
5V	0
12V	680Ω
24V	1.8KΩ

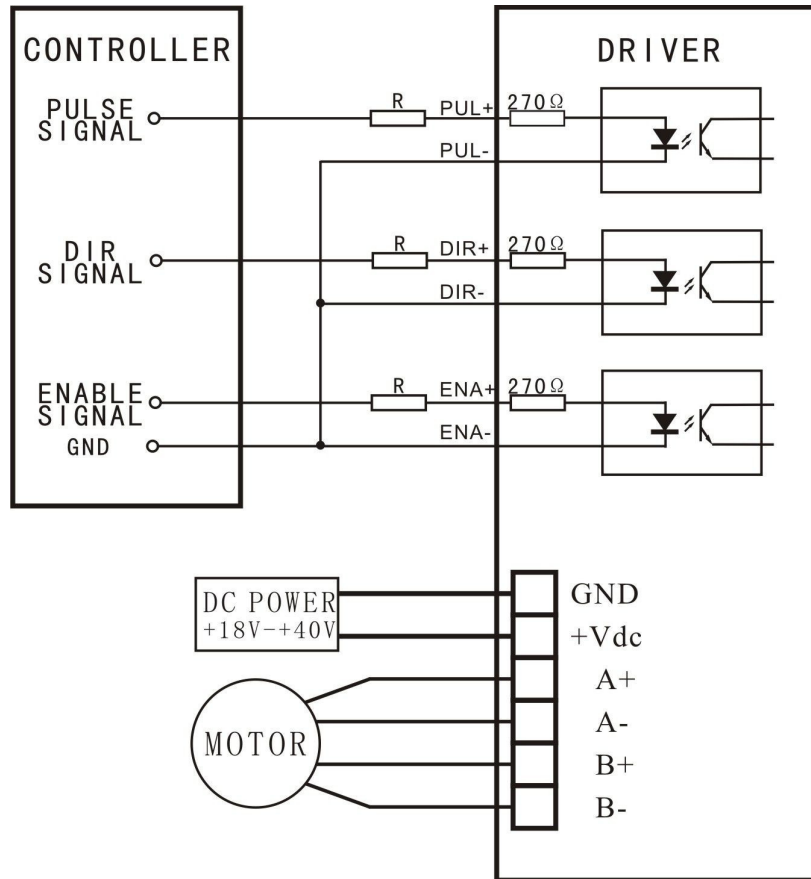


Figure 2: Typical connection

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
ALM lights	Supply voltage is too high or	Check the supply voltage
	Motor line short-circuit	Check motor lines eliminate the
	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 the phases line
	Motor line break	Change the phases are
Inaccurate Position	The Micro steps set	Set the correct segments
	The motor load is too	Increasing the current
	Control signal is interfered	Eliminate interference
Motor Stalled	Power supply voltage too	Increasing the supply voltage
	Accelerating time is too	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)

