JT322AN Ultra-small 2-Phase Hybrid DSP Stepper Drive 12-30VDC/0.5-2.0A

Features

1) Ultra-small
2) Low motor vibration, low noise, low motor heating
3) Maximum speed multi-gear
4) Automatic idle current reduction
5) Precision current setting, the smallest unit of 0.05 A
6) Over voltage, short circuit, phase-error protection functions.
7)switch-controlled signal
8) Can drive 4,6,8 wires of two-phase stepper motor
9) Analog signals to control the speed

Overview

JT322AN is a high-performance two-phase hybrid motor driver, which can be driven by an external potetionmeter or driver. Using the latest 32 DSP technology, providing precision 0.05A current setting unit , and taking advanced digital filtering techniques, anti-resonance technology and precision current control technology to make it implement precise smooth operation, extra low noise . It's widely used in semiconductor, electronic processing equipment, medical and precision equipment.

Capable of driving 35, 39, 42,57HS06, 57HS09 series of two-phase hybrid stepper motors.

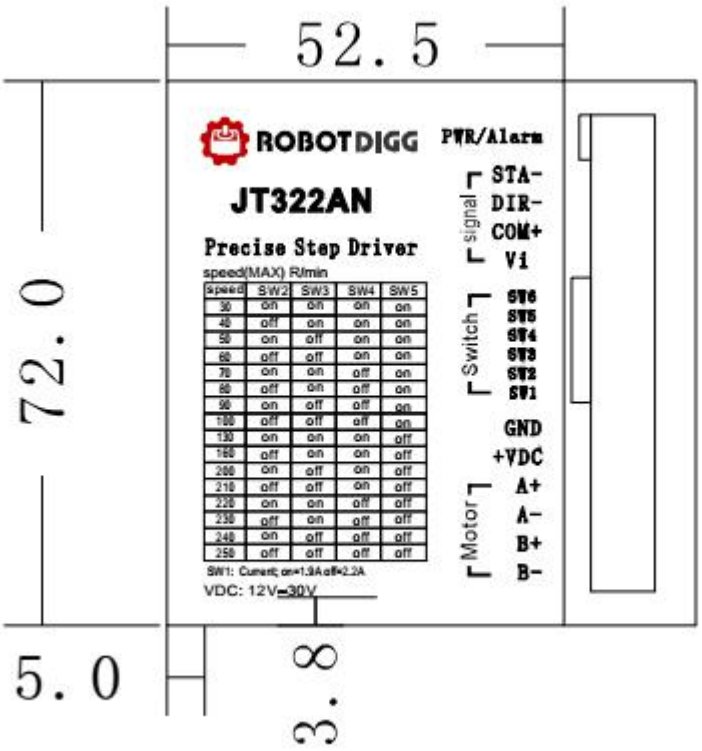
Specification

Model:	JT322AN
Phase:	2
Control Mode:	switch control
Max Input Frequency:	200KHz
Input Voltage Range:	12-30VDC
Suggested Power Supply Voltage	12-24 VDC

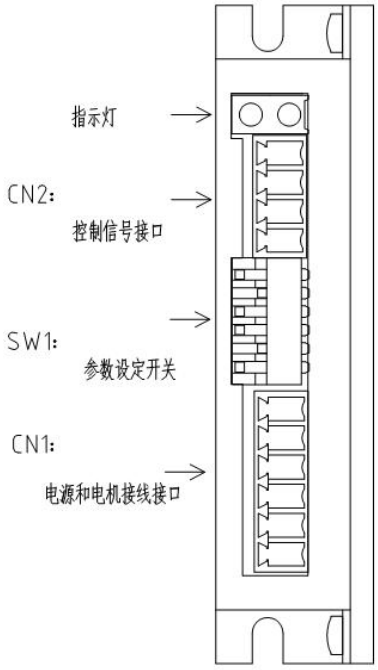
Range:	
Output Current:	0.50 - 2.00 A
Software Configuration. Resolution Range:	200 - 102,400
DIP Switch Resolution Setings:	200，400, 800, 1600, 3200, 6400, 12800, 25600
Software Cofig Current Range:	0.50 - 2.20A
DIP Switch Current Configurations:	0.5A, 0.7A, 1.0A, 1.3A, 1.6A, 1.9A, 2.2A
Logic Current Range:	7-16mA *(10mA typical)*
Logic Voltage Range:	4-5 VDC for pulse active high (default) , or 0-0.5V for pulse active low
Pulse enabled at:	Rising edge
Idle Current Percentage:	50 %
Software Config. Idle Current Percentage:	0-100%
Step Width:	2,500 ns
Minimal Direction Setup Time:	5,000 ns
Protection:	Over-current, over-voltage, and stall, phase-error
Isolation Resistance:	500M Ohm
Environment:	Avoid dust, oil fog and corrosive gases
Ambient Temperature:	0-50°C
Humidity:	40–95% RH
Operating Temperature:	0-70°C
Vibration:	5.9 m/s^2 Max

Storage Temperature:	-20-65°C
Specification:	86 X 55 X 20.5mm
Weight:	0.235 lbs

Mechanical Specification

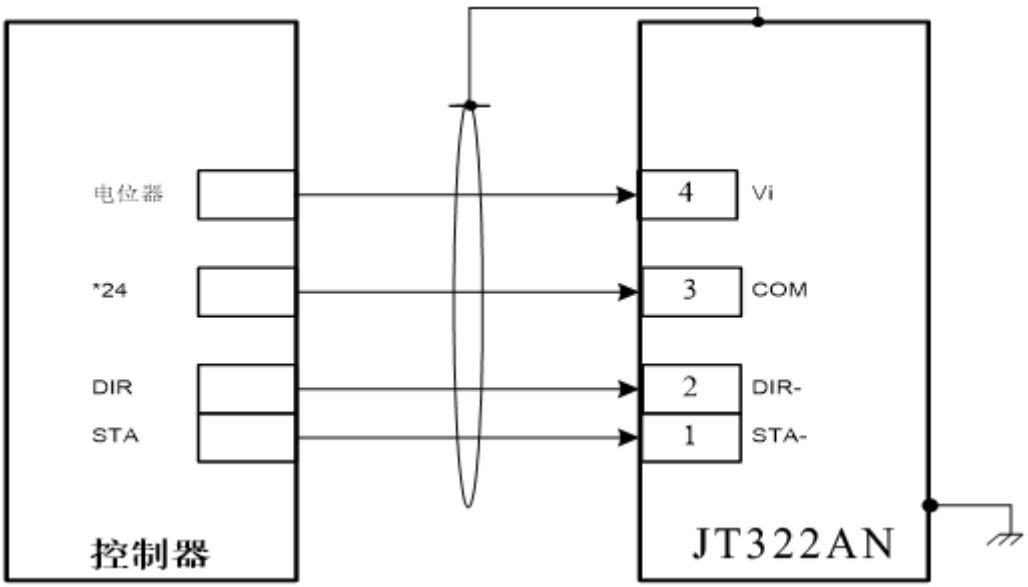


Driver port connection



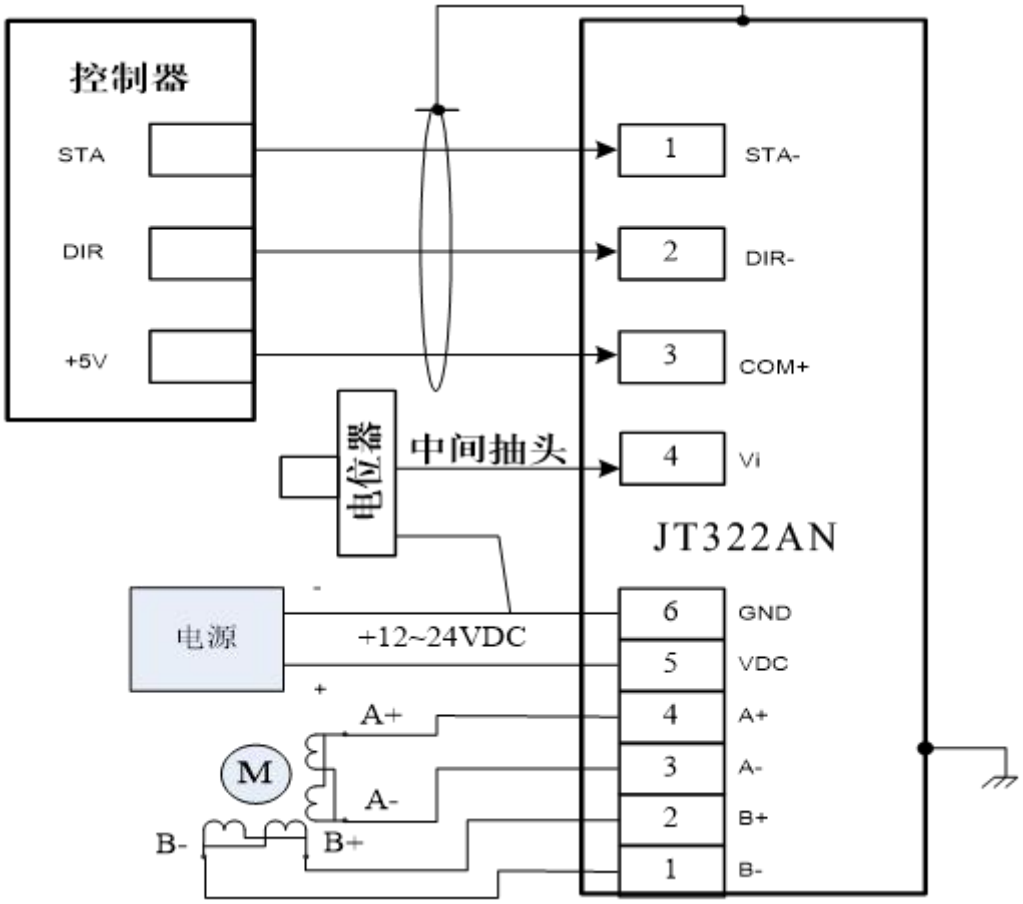
Control signal connection diagram

(If the controller sends the control signal is +12 ~ +24 V, the PUL-, DIR-, ENA- signal line to increase the 1 / 4W 1K ~ 2K resistor current limit)



Typical application wiring diagram

(notice：potentiometer no need to connect power supply, only to connect two pin)



Connector description

1）Power motor connector CN1

Connector	Name	Function
6	GND	DC Power ground
5	+VDC	DC Power anode, can connect during +12V—+24V，users should make sure working voltage not over 30VDC
4	A+	Motor A+
3	A-	Motor A-
2	B+	Motor B+
1	B-	Motor B-

2）Control signal connect CN2

Connector	Name	Function
4	Vi	Analog signal input, maximum 3.3V, connect potentiometer wiper, not recommend to connect power
3	COM+	Input terminal of control signal public power, can connect +24 voltage
2	DIR-	Direction signal: logic “low” threshold direction signal is active
1	STA-	Switch-controlled signal: motor runs when logic “low” threshold

Setting

(1) working(dynamic)current setting

peak（A）	average(A)	SW1	SW2
0.5	0.35	ON	ON
1.0	0.7	OFF	ON
1.5	1.05	ON	OFF
2.0	1.4	OFF	OFF

SW6： Keeping off

(2)Speed setting:

gear / r.p.m	SW3	SW4	SW5
30	ON	ON	ON
60	OFF	ON	ON
90	ON	OFF	ON
120	OFF	OFF	ON
150	ON	ON	OFF
180	OFF	ON	OFF
240	ON	OFF	OFF
300	OFF	OFF	OFF

(3）Speed adjustment

Can connect an external potentiometer (recommended potentiometer 10K ohm) to adjust speed, the maximum speed for the above table figures.

Unit: revolutions per minute (R.P.M)

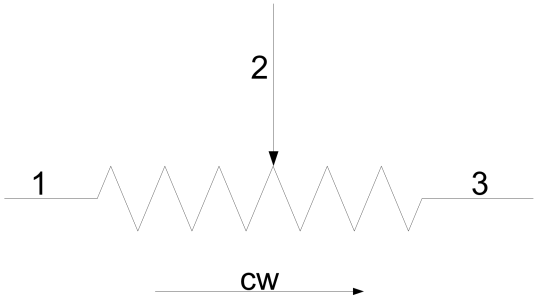
When not connected to the potentiometer, the motor rotates at the maximum value of each gear

Connection way of potentiometer: as following

1 connect GND, 2 connect Vi, 3 no need to connect.

Rotate the potentiometer clockwise, the motor speed from small to large.

Notice: potentiometer no need another power supply, only two pin.



(4）Static (quiescent) current setting

Automatic idle current reduction

(5）Parameter tuning

When the drive is in the standby state, the user can operate the SW4 to complete the setting of the motor control parameters. The operation is as follows:

Implement way 1: SW4 from on to off, and turn back from off to on within 1 second.

Implement way 2: SW4 from off to on, and turn back from on to off within 1 second.

Failure indication

Red LED flashing number within 3seconds represent different fault information.

Number	Flashing number	Red Led flashing wave shape	Fault
1	1	●○○○○○	Over current or phase fault
2	2	●●○○○○	Over voltage problem (vol.>33VDC)
3	3	●●●○○○	EEPROM problem

4	4	●●●●○○	Motor open circuit or poor contact problem
5	5	●●●●●○	In the way of communication control , 3s cannot connect to communication