

JT442 low-voltage 2-Phase Hybrid DSP Stepper Drive 20-40VDC/1.0-4.2A

Features

- 1) Low motor vibration, low noise, low motor heating
- 2) Optical isolation signal input
- 3) Automatic idle current reduction
- 4) Precision current setting, the smallest unit of 0.05 A
- 5) Over voltage, short circuit, phase-error protection functions.
- 6) The biggest step 512 micro segmentation, the smallest unit of 1
- 7) Can drive 4,6,8 wires of two-phase stepper motor
- 8) Step & direction control
- 9) Fault output

Overview

JT442 is a low-voltage digital 2-phase hybrid stepper drive, 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, laser processing, medical and small CNC equipment.

Capable of driving 36, 42, 57, 86 series of two-phase hybrid stepping motors.

Specification

Model:	JT442
Phase:	2
Control Mode:	Step & Direction
Max Input Frequency:	200KHz
Input Voltage Range:	20-40VDC
Suggested Power Supply Voltage Range:	24-36 VDC

Output Current:	1.0 - 4.2 A
Software Configuration. Resolution Range:	200 - 102,400
# of DIP Switch	SW5-SW8
DIP Switch Resolution Settings:	200, 400, 800, 1600, 3200, 6400, 12800, 25600
Software Config Current Range:	1.0 - 4.2A
# of DIP Switch Current Configurations:	SW1-SW3
DIP Switch Current Configurations:	1.5A, 1.9A, 2.3A, 2.7A, 3.2A, 3.7A, 4.2A
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	0-70 °C

Temperature:	
Vibration:	5.9 m/s ² Max
Storage Temperature:	-20-65 °C
Specification:	4.57 X 2.72 X 1.04 Inches
Weight:	0.456 lbs

Current selection

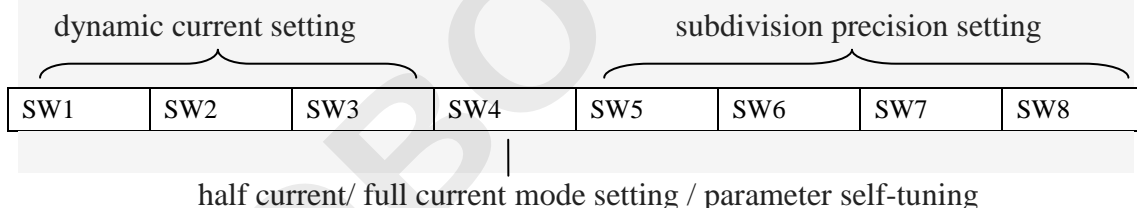
Peak	REF	SW1.1	SW1.2	SW1.3
Default		ON	ON	ON
1.5A	1.07A	OFF	ON	ON
1.9A	1.36A	ON	OFF	ON
2.3A	1.64A	OFF	OFF	ON
2.7A	1.93A	ON	ON	OFF
3.2A	2.28A	OFF	ON	OFF
3.7A	2.64A	ON	OFF	OFF
4.2A	3.00A	OFF	OFF	OFF

When SW1,SW2,SW3 are setting the position of “on”,you can use PC software to set the current you need, the max is 2.2A,resolution is 0.05A,if do not set up, the default peak is 1A.

Parameter settings

(1) JT442 drive uses eight DIP switch settings subdivision precision, dynamic current, standstill half current and achieve internal motor parameters and adjusting parameters self-tuning. Detail description as follow:

Mark: It’s ON status when from factory; user can set their own depending on the application.



(2) Quiescent current setting

Static current can use SW4 DIP switch to set up, on means Static current is the half of dynamic current, off means the same static current and dynamic current.

(3) Parameter tuning

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.

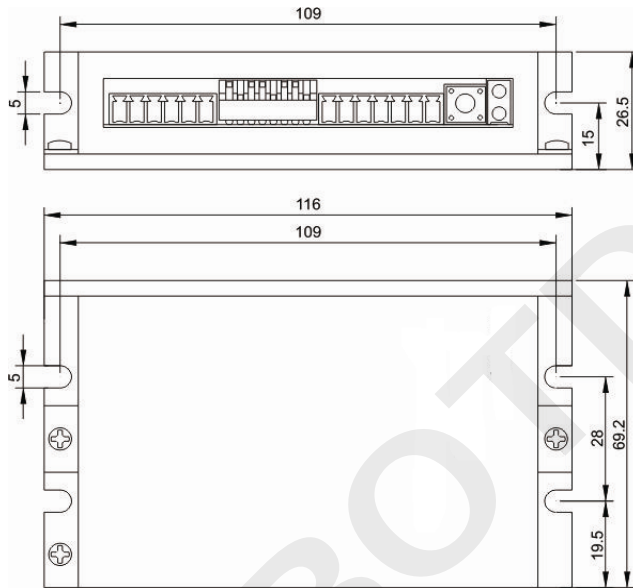
Micro step selection

Pulse/REV	SW5	SW6	SW7	SW8
Default	ON	ON	ON	ON
400	OFF	ON	ON	ON
800	ON	OFF	ON	ON
1600	OFF	OFF	ON	ON
3200	ON	ON	OFF	ON
6400	OFF	ON	OFF	ON
12800	ON	OFF	OFF	ON
25600	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
25000	OFF	OFF	OFF	OFF

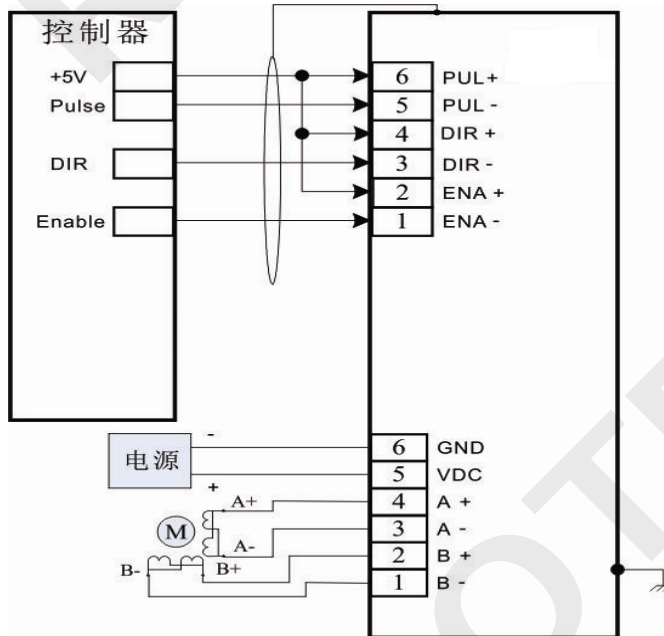
Micro step indication:

When SW5,SW6,SW7,SW8 are on the position of “on”, drives subdivision using the default number of segments inside the drive: 1 (full step = 200 steps / rev): user via a PC dedicated for digital debug software Ezconfigure subdivision to set ,the minimum of 1, the resolution of 1 and the maximum of 512.

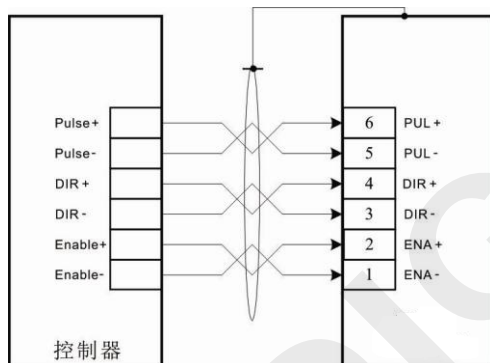
Mechanical Specification



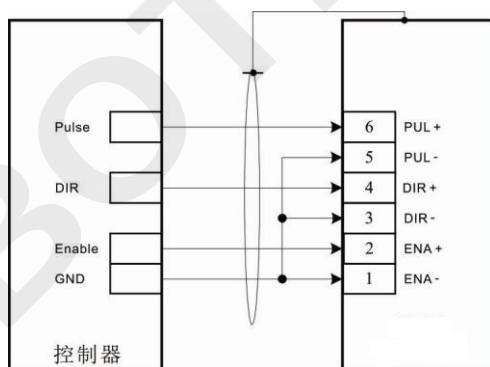
Typical Connection



anode wiring diagram



control signal wiring diagram



control signal +5V cathode single-ended wiring diagram

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.>50VDC)
3	3	●●●○○○	EEPROM problem
4	4	●●●●○○	Motor open circuit or poor contact problem
5	1	●○○●○○	CW limit protection
6	2	●●○●●○	CCW limit protection